

# Changing agricultural education from within

**LESSONS AND CHALLENGES FROM THE GO4IT PROGRAMME**

**Washington Ochola, Willem Heemskerk  
and Mariana Wongtschowski (Eds)**



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# Foreword

The changing nature of African agriculture in the face of myriad global, regional and local challenges demands change in agricultural capacity development. Universities are well placed to spearhead this change, but to effectively do so they need to update courses' content and change the way they are delivered. In particular, changes at an institutional level are required to transform the long-held negative image of universities as backwaters populated by egotistical academics and bureaucratic administrators. The African university must become better positioned to be a facilitator of agricultural innovation, technology, institutions and development.

Any innovation capacity building programme in Africa must go hand in hand with efforts to create a system which can effectively, efficiently and sustainably respond to demands from society, and in particular respond to agricultural policies and the local contexts of farmers, the private sector and other agricultural value chain actors.

For agricultural education and training to realize this largely unfulfilled role, more innovative approaches to agricultural capacity development are needed. In this regard, the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) is engaging with different actors to unlock the potential of universities. Not only are RUFORUM's programmes and projects targeted at creating a new calibre of graduates able to foster innovation but it is also engaged in collaborative capacity strengthening, to help organizations adapt to the changing demands of African agriculture.

The rationale for the innovative approaches are obvious, namely: economies of scale in fostering institutional change and adaptation to new sources of knowledge; the need for universities to be in tune with current demands for new technologies, products and processes, and new organizational cultures and behaviour; the advantages associated with sharing for training and research; and building on the comparative advantages of different universities to offer world-class training and research programmes, while achieving reduced transaction costs and benefiting from synergies.

The GO4IT (Graduate Opportunities for Innovation and Transformation) project is part of RUFORUM's programme portfolio on university capacity development. Drawing on training and organizational learning processes in the GO4IT pilot project, this book showcases the application of an 'innovation systems' perspective for transforming universities from within. The intention is to promote the mainstreaming of innovation systems thinking and practice in universities.

The capacity of universities to realign themselves to regional development needs is dependent on institutional change in order to be socially and economically relevant to smallholder farmers, policy processes and other actors and platforms in agricultural and rural sectors. Currently, many reform agendas revolve around university visions and mandates, relevance to national development priorities, changes in curricula, improvements in incentive systems for researchers, alternative financing strategies and organizational structures, and realization of new opportunities in science and technology. The lessons presented in this book outline how this may be achieved with minimal resources and through the development of wider partnerships.

*Michèle Dominique Raymond*

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Special appreciation is extended to the GO4IT mid-career course teams and university administrators for giving the research and training staff time to participate in the GO4IT training and mentoring processes. Particular mention must be made of the vice chancellors of the three universities – Professor James K. Tuitoek of Egerton University, Professor George Kanyamaphiri of LUANAR and Professor John Ddumba-Ssentamu of Makerere University – who supported the implementation of the project and gave unmatched support in the GO4IT training and research processes.

Many other individuals and organizations collectively and individually, directly and indirectly played a role in the production of this publication. They include:

- The mid-career professionals and their employers who took part in the GO4IT mid-career course, facilitating the innovation processes profiled in the cases detailed in this book.
- The smallholder farmers and other local actors who engaged in the platforms facilitated by the mid-career professionals during the training course.
- The many resource people, especially lecturers, who trained, mentored and supervised the mid-career professionals, postgraduate students, as well as other university lecturers.

Roos Wemmenhove, from KIT, was in charge of a large part of the preparatory work leading to the writeshop. We thank her for the significant amount of work and energy she put into this project. The book was peer reviewed by Mirjam Schoonhoven and Helena Posthumus from KIT, who we thank for the useful comments and contribution. Special thanks go to the language editors, Susanna Thorp, Olivia Frost and Mike Davison (WRENmedia), and the graphic designer, Anita Simons (symsign). The editorial team would also like to acknowledge the support of the associate partners (ASARECA, CTA, FARA, and SADC) of the GO4IT project, as well as staff at RUFORUM and KIT who provided administrative and logistical assistance for the writeshop.

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# 1 Introduction

BY WASHINGTON OCHOLA, MARIANA WONGTSCHOWSKI, WILLEM HEEMSKERK

Fertilizer pre-application meeting with farmers of West Mateka | Photo: Elias Muga Ochieng



# Structure and organization of the book

This book is divided into four chapters. Chapter 1 outlines the context of agricultural research for development (AR4D) and the institutional context of universities in Africa, explains why and how this book was produced, and describes innovation for change, the analytical framework and the approach for GO4IT (Graduate Opportunities for Innovation and Transformation) project implementation. Chapter 2 offers lessons learned and analysis on innovation facilitation by the GO4IT mid-career course participants. Two or three cases from each country (Kenya, Malawi and Uganda) are presented. Chapter 3 showcases lessons and experiences of organizational changes in universities, with cases from Egerton University, Lilongwe University of Agriculture and Natural Resources (LUANAR) and Makerere University.

In Chapter 4, we analyze the lessons from both sets of cases, including how agricultural development practitioners and their organizations, and lecturers and universities, have changed and how to ensure that the changes continue. The potential for institutionalizing the concept to achieve change in universities in a sustainable way is taken into consideration. The profiles of the editors, authors of the cases and other contributors to this book are presented at the end.

In Box 1 the most common terminology used in this book for innovation systems and processes has been defined.

## BOX 1: MAIN TERMINOLOGY

**Innovation:** The process of creating and putting into use combinations of knowledge from different sources for social, economic, and institutional improvements.

**Innovation platform or innovation network:** A mechanism to bring a diverse group of stakeholders together to interact in a concerted manner towards a shared objective. Knowledge and other resources (such as money, equipment and land) are contributed voluntarily, to jointly develop or improve a social or economic process or product.

**Value chain:** The set of linked activities conducted by different actors that are required to produce and market a product.

**Organization:** A group of actors that collaborate over a sustained period. An organization can be either formal or informal.

**Collaboration:** May take different forms, including frequent exchanges of information, joint priority setting for policies and programmes, and joint implementation of innovation projects.

**Innovation facilitators:** Individuals or organizations that help bring actors together to talk to and understand each other in order to work towards a common objective.

**Innovation capabilities:** The skills to build and integrate internal and external resources to address problems or take advantage of opportunities.

**Institutions:** The rules and regulations (formal and informal), norms and behaviour that have a strong influence on how an organization functions.

*Source:* Adapted from World Bank, 2012; Nederlof, Wongtschowski and van der Lee, 2011.

## The context

### Agricultural research for development

Hundreds of millions of people in sub-Saharan Africa rely on agriculture for their employment and livelihoods. Agriculture also significantly contributes to export earnings. However, as national populations continue to increase, food production has failed to keep pace as a result of various production constraints at farm level and beyond (IAASTD, 2008). Combining the use of technologies and innovative approaches has the potential to overcome many productivity constraints, which include abiotic stresses such as extreme climatic events, and biotic stresses such as new pests and diseases. But poor linkages and inadequate infrastructure and governance mean that agricultural practitioners must also be able to cope with many institutional constraints.

AR4D contributes to poverty reduction through the innovative application of new and existing knowledge and practices, thus creating new knowledge for development and social transformation. One of the primary reasons for the slow pace of development in sub-Saharan Africa, however, is the tendency for researchers to develop new technologies based on funding availability, donor drives or the need for quick technical publications, rather than on the true needs and opportunities identified by or with intended end-users (Hall *et al.*, 2001; Ochieng, 2007a; Ochieng, 2007b; World Bank, 2007; World Bank, 2009; World Bank, 2010).

Capacity development approaches for agricultural development have concentrated on building the stock of human and scientific capital through technical training. Experience in the region indicates that this has perpetuated a narrow interpretation of agricultural capacity building (Davis *et al.*, 2007; IAASTD, 2008). A focus on skills and expertise has contributed to this technical focus which is primarily reliant on formal and inflexible public sector organizations and programmes, and is only weakly engaged with farmers and with other economic sectors and knowledge sources (Davis *et al.*, 2007).

Innovation is about doing something 'new', by using existing or novel information in new ways (Davis *et al.*, 2008). Through research and training programmes that foster innovation, higher agricultural education and training in sub-Saharan Africa is poised to contribute immensely to agricultural and rural development (Spielman *et al.*, 2009; Klerkx *et al.*, 2010). But there is an urgent need for universities to take up new approaches in order to provide the technologies and expertise as well as the required institutional innovation.

Agricultural innovation systems present a broad, inclusive and holistic means to strengthening capacity for the creation, diffusion and application of knowledge. However, capacity for institutional innovation is still very limited among organizations in sub-Saharan Africa (Davis *et al.*, 2007). There has been limited attention in the past to cultivating such skills and attitudes within the agricultural departments of African universities, leading to a significant capacity gap for problem solving and rural development. This gap is further exacerbated by the lack of institutional acknowledgement of the importance of such skills. AR4D professionals require specific capacities (knowledge, skills and attitudes) to facilitate, enable and incorporate innovation within tertiary education institutes.

**African universities**

Formal degree training in agricultural sciences in sub-Saharan African universities is largely discipline-based and focused on the development of research skills and discipline-specific approaches (Rivera, 2006). Graduates are equipped with the skills to design, manage and report on research projects, but are rarely able to deal with ‘real life’ situations related to empowering smallholder farmers and reducing poverty. These shortcomings have contributed to sub-Saharan Africa being the only region in the world in which food production per capita has decreased since 1970 (African Union, 2007). The lessons presented in this book will serve to help universities engineer changes in research and training, thereby inspiring skills that enable the application of knowledge gained from science and technology.

In many African universities and other academic and research institutions, quality in research and training is normally judged on the use of sound methodologies, and the communication of research results and deployment of graduates to the wider job market and scientific community. Little attention continues to be paid to the relevance of these graduates and their research findings in spurring innovation at different levels. Graduates should develop skills to design, implement and report on research and innovation processes, drawing on the scientific rigour that gives credibility to agricultural development. In the arena of AR4D however, this is only one dimension of quality (see Figure 1). For AR4D, quality is ultimately assessed on the basis of its contribution to reducing poverty through the use of new knowledge and practices. This has been largely lacking in many university research and training programmes.

**FIGURE 1: DIMENSIONS OF RESEARCH AND TRAINING QUALITY (SOURCE: GO4IT TRAINING MATERIALS)**





Universities' capacity gap to effectively contribute to AR4D has been identified by many (Oniang'o and Eicher, 1998; World Bank, 2010). This gap does not only result from negative attitudes and a lack of staff skills, but can also be blamed on poor organizational commitment, and little acknowledgement by universities of the importance of these skills or the need for programme reorientation. Davis *et al.* (2007) argue that the demand for professionals and graduates from the agricultural sector goes hand-in-hand with an innovation systems perspective, enabling universities to develop individuals and organizations with the capabilities needed to stimulate the growth of a more dynamic agricultural sector. It is now a fundamental requirement that universities understand the role of research in the multi-stakeholder process of innovation, beyond the development of new technology and training of more graduates. This also includes the importance of building university-industry linkages (Brimble and Doner, 2007; Hartwich *et al.*, 2007).

### **Innovation for change**

The 2003 Jinja Consensus called for the creation of a new African agricultural university to build a new cadre of agricultural graduates who would go on to become entrepreneurs and wealth creators, rather than cogs in the wheels of existing agricultural education, research and extension organizations. The International Assessment of Agricultural Science and Technology for Development (IAASTD) Africa report called for carefully thought-out regional postgraduate training and research programmes (IAASTD, 2008). Holistic transformation also demands reliance on student-centred learning styles, with the university environment merely facilitating the development of graduates as innovation system thinkers and facilitators. All in all, such transformations must result in changes in the cultures of universities as organizations, and enhance innovative capabilities among lecturers, students, researchers and practitioners. Only in this way can universities contribute to the development of an enhanced capacity for agricultural innovation, which contributes to overall development.

Organizational change in universities requires interaction between administrators, lecturers, researchers, students and other university actors, which requires internal change champions, facilitation and coordination. At the same time all these university actors interact with others in society (e.g. farmers, service providers, processors, traders) and the way in which this happens is an important part of innovation capacity development.

Among other factors, effective coordination for innovation occurs when: (1) committed and capable leadership promotes the collaboration; (2) an organization offers appropriate (often new) positive incentives to individuals from cooperating organizations (such as researchers or farmers); (3) important stakeholders that coordinate their activities have the mandate, culture and freedom to participate; and (4) turnover of individuals participating in the collaboration is low (a relatively common problem with high-level civil servants) (World Bank, 2012).

To facilitate an innovation process, the stakeholders must have a clear understanding of:

- how innovation comes about;
- the actors involved in the innovation system and the roles they play;
- the 'rules' (laws, regulations, traditions, customs, beliefs, norms and nuances) that guide the behaviour and practices of actors in an innovation system;

- how smallholders are engaged in and affected by a process of institutional learning; and,
- how universities and other actors can facilitate innovation for the benefit of smallholder farmers, the private sector, policy processes and employers of graduates.

By engaging policymakers to create an enabling environment for agricultural innovation systems to flourish, the change becomes achievable. The innovation capacity of universities can be improved through linking professionals via international networks, which also serve to facilitate sharing and managing of knowledge on agricultural innovation for organizational learning.

## Why this book?

This book chronicles specific lessons from the GO4IT project that worked to address the innovation capacity gap of three African universities at individual, organizational and institutional level, and improve the contribution of agricultural practitioners towards innovation for rural development.

The narratives, theoretical foundations and cases presented here are designed to increase university staff and graduates understanding of how innovation (i.e. change) may be facilitated by university programmes and by professionals, in order to contribute to social and economic development. The outcomes of the GO4IT project, which focused on explicit capacity building for African universities to train graduates who can foster change by facilitating agricultural innovation, are analyzed. In particular, how the development and implementation of a short course for mid-career professionals can bring about change as practice is brought into universities is illustrated. The cases described provide examples of how the innovation capacity of professionals, university departments, lecturers, researchers, students, smallholder farmers and other agricultural sector actors can be developed and sustained, and the challenges faced in this process.

GO4IT results showcase how partnerships between local actors, as the primary source of innovative breakthroughs in agriculture and agricultural education, can channel resources towards the steady improvement of the innovative products and processes that increase the capacity and capability of smallholder farmers to boost their productivity and gain competitiveness within emerging markets.

## Target audience

This book has been written for a specific target audience: university administrators, university staff, agricultural development practitioners and policymakers in agriculture and education sectors, as well as employers of university graduates in public, private and civil society circles. For university staff, the volume attempts to present analytical, understandable and usable information embedded in a sound theoretical framework, in order to support: the use of experience in updating the content and delivery of their courses; and the use of cases as examples in course delivery. University students will find the book valuable in its presentation of the qualities and virtues that define effective facilitators of agricultural innovation processes.

University management will find useful insights and details of transformative change facilitation, as well as opportunities for evidence-based university policy and programming. The cases also outline structures and ideas for improving university linkages with the future employers

of their students. Practitioners in AR4D will find the volume useful in providing new ideas, practical solutions and approaches that add value to smallholder farmer and industry competitiveness. The book also presents policymakers with evidence from the implementation of the GO4IT project that they will find informative as they create an enabling environment for agricultural development, support agricultural higher education, and make critical decisions in support of agricultural innovation.

## GO4IT

The three year (2009-2012) GO4IT project secured support from the European Union through its ACP-S&T programme. The implementing project partners were RUFORUM, Egerton University (Kenya), Makerere University (Uganda), LUANAR (Malawi), and the Royal Tropical Institute (KIT, Netherlands). The associate partners were the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA), the Technical Centre for Agricultural and Rural Cooperation (CTA), the Forum for Agricultural Research in Africa (FARA), and the Southern Africa Development Community (SADC).

The project's goal was to enhance universities' contribution to poverty alleviation by promoting innovation systems thinking in training, extension and research programmes, in order to facilitate the production of graduates who can foster change through agricultural innovation. The specific objectives were to:

- Enhance partnerships for effective networking and institutional change management;
- Design, test and roll-out a part-time, mid-career training course on the facilitation of agricultural innovation processes;

Training at LUANAR | Photo: James Sitima





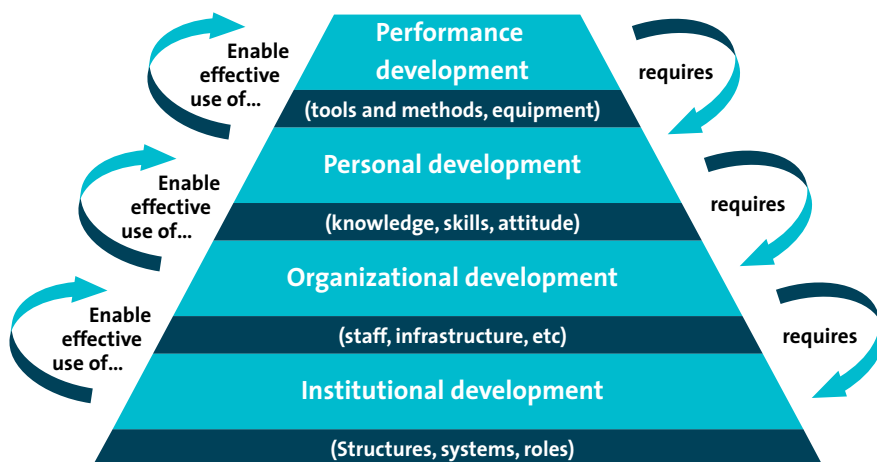
- Develop and integrate courses at participating universities on innovation approaches in graduate training;
- Build cross-disciplinary networks of expertise on the role of agricultural research in facilitating rural innovation;
- Share lessons learnt from the mid-career training course and innovation curricula, and from practical facilitation of innovation for rural development; and,
- Design, test and refine a university strategy for mentoring agricultural innovation facilitators.

The implementation of GO4IT was underpinned by an agricultural innovation system perspective which “provides a means of analyzing how knowledge is exchanged and how institutional and technological change occurs in a given society by examining the roles and interactions of diverse agents involved in the research, development, and delivery of innovative technologies that are directly or indirectly relevant to agricultural production and consumption” (Anandajayasekeram, 2011). AIS perspectives provided the underlying approach to GO4IT implementation, with the following guiding principles being held paramount:

- The need to work with a range of stakeholders through well-developed partnerships;
- Building on interdisciplinary research and development teams;
- Integrating different levels of activity (national/policy, and local/field level) and agricultural sectors;
- Learning from other stakeholders and from successes and failures through an interactive learning process;
- Linking capacity development to the value chain and taking into consideration livelihoods systems; and,
- Working towards systemic change in knowledge management.

The primary objective of the GO4IT project was to develop personal, organizational and institutional capacity for agricultural innovation; both in the participating universities and in the employers of agricultural professionals (see Figure 2).

**FIGURE 1: DIMENSIONS OF RESEARCH AND TRAINING QUALITY (SOURCE: GO4IT TRAINING MATERIALS)**



The project was aimed at two immediate target groups:

- 1 Mid-career professionals and their organizations, with a focus on the development of their *personal* capacity, rather than the impact of their development on their employers.
- 2 Participating universities, with a focus on *organizational* and *institutional* development, rather than capacity development of individuals within the institute (although training of trainers approaches were used to train individuals to bring about change in their organizations).

The book also addresses other aspects of capacity development (see Figure 2) and their interaction. Apart from looking at the personal capacity development of the mid-career professionals (and evidence of that), any evidence of impact on their employing organization, as well as how these organizations interact with other actors in the innovation system (i.e. institutional change) is considered.

### Situation analysis

Baseline studies were conducted in Kenya, Malawi and Uganda, in combination with demand analysis and skills gaps studies, to establish gaps in university curricula and stakeholder demands for innovation. The findings were used to:

- Design the mid-career course, which was carried out by three partner universities;
- Engage universities to adopt systems thinking approaches;
- Update departments on stakeholder needs and curriculum gaps;
- Facilitate development of new postgraduate programmes and university awareness programmes and materials;
- Design strategies for training MSc students and changing lecturers during training of trainers courses;
- Engage with non-university actors in addressing demands of, and planning participation in, the mid-career course.

### Design and implementation of the mid-career course

The situation analysis led to the design of a course for mid-career professionals. The mid-career course was used as a tool to introduce agricultural innovation system practice into universities through participating professionals and their employers, as well as to bring university staff into 'real life' situations, through the supervision of course participants, who would be involved in concrete assignments in their working environment during learning intervals.

The partners in the project developed, peer reviewed and tested a set of modules organized around four blocks (see Box 2). Through a training of trainers approach, a core group of lecturers was prepared to conduct the mid-career course, and train other lecturers and postgraduate students within the three universities.

In a first cohort, over 70 professionals from government ministries, the private sector, civil society and universities were trained in each country. The cases presented in Chapter 2 and 3 of this book are a compilation of innovation lessons from some of the GO4IT course participants and participating organizations.

## BOX 2: MODULES CONTAINED IN THE GO4IT MID-CAREER COURSE

### Block 1: Towards commonly agreed entry points for action

- 1.1 Welcome and participants' introduction
- 1.2 Fears and expectations
- 1.3 Programme introduction
- 1.4 Pre-course self-assessment of current competencies
- 1.5 Agricultural innovations
- 1.6 Introduction to agricultural innovation systems
- 1.7 Steps in facilitating innovation
- 1.8 Partnerships: concepts and principles
- 1.9 Initial stakeholder identification
- 1.10 Actor interaction matrix: a tool for quick system analysis
- 1.11 Facilitation and interview skills
  - A. The role of the facilitator
  - B. Interview techniques
- 1.12 Preparing for learning assignments, first interval
  - A. Introduction to learning assignments
  - B. Developing an action and learning plan
- 1.13 Training block evaluation

### Block 2: Ready, set, go!

- 2.1 Welcome and programme overview
- 2.2 Presentation and discussion of first interval assignments and reiteration of key issues in innovation and partnerships
- 2.3 Perspectives for looking into innovation
  - A. Value chain approach
  - B. Sustainable livelihoods
- 2.4 Farmers as innovators
- 2.5 Jointly developing an action plan
- 2.6 Communication within and facilitation of multi-stakeholder processes – tools and tips
- 2.7 Design a governance system for the partnership
- 2.8 ICT for innovation
- 2.9 Explanation of second learning assignments, plus planning
- 2.10 Training block evaluation

### Block 3: Keep it running

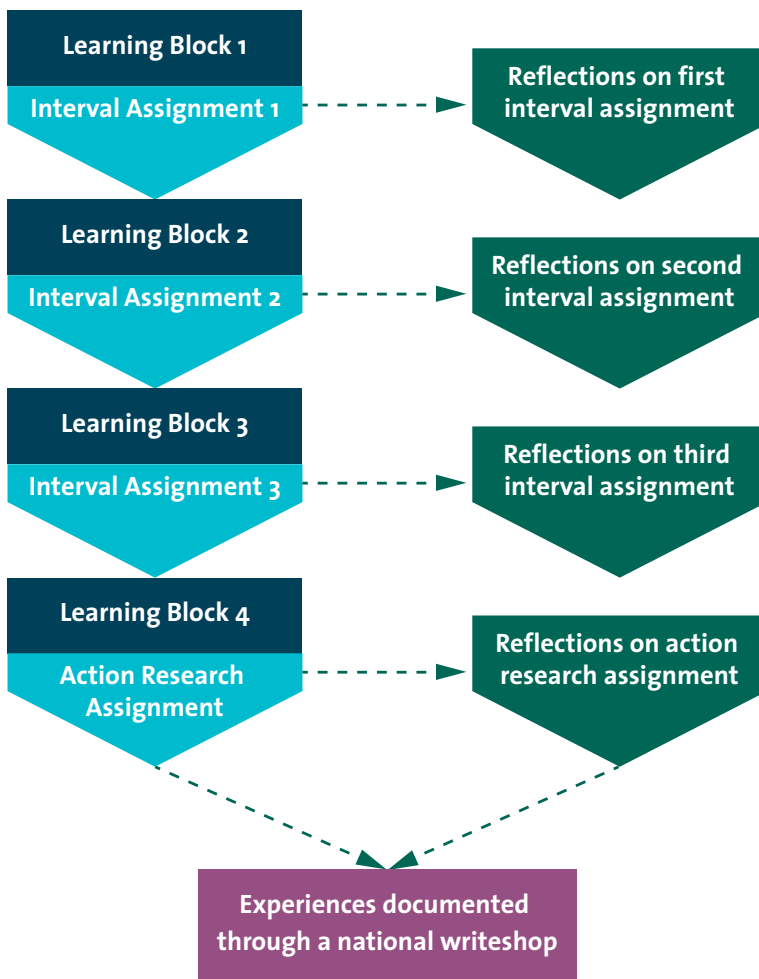
- 3.1 Welcome and programme overview
- 3.2 Presentation and discussion of second interval assignments and reiteration of key issues in facilitation and governance
- 3.3 Knowledge management and learning in multi-stakeholder partnerships
- 3.4 Monitoring and evaluation of the innovation process for learning purposes, as well as for accountability purposes (progress with activities, outputs and outcomes)
- 3.5 Partnership monitoring
- 3.6 Keeping partners engaged
- 3.7 Conflict management
- 3.8 Power relations, gender and inclusion in innovation processes
- 3.9 Impact evaluation
- 3.10 Planning of third learning assignments: finalizing
- 3.11 Training block evaluation

### Block 4: Towards a long-term, solid partnership

- 4.1 Welcome and programme overview
- 4.2 Presentation and discussion of third interval assignments and reiteration of key issues in facilitation and governance
- 4.3 Scaling out and scaling up: an introduction
- 4.4 Using innovations generated by partnership elsewhere
- 4.5 Triggering change in the way your organization thinks and acts
- 4.6 Triggering change in the way partnership members think and act
- 4.7 Policy advocacy: changing the (enabling) environment
- 4.8 Withdrawing from the partnership
- 4.9 Ensuring financial sustainability
- 4.10 Documenting evidence and process
- 4.11 Explanation of fourth interval assignments and preparations for final writeshop
- 4.12 Post-course self-assessment of current competencies
- 4.13 Training block and programme evaluation

The implementation of the mid-career course followed the module approach (see Figure 3).

FIGURE 3: BLOCK AND MODULAR DESIGN OF THE GO4IT MID-CAREER COURSE



Although there were variations in the timing and duration of the mid-career course, it was guided by an action learning framework that contained practical assignments – that took place during two-month long intervals – in between one week-long theoretical training blocks.

### How the book was produced

Towards the end of the GO4IT project, experiences and lessons on how to bring innovation practice and thinking into university courses through a mid-career professional course on agricultural innovation were documented by partners and participant trainees. Sharing documentation and analysis of experiences from the facilitation of innovation for rural development, and experiences from the postgraduate course and the innovation curricula, was a key output of the project. At least 60 learning cases were documented in Kenya, Malawi and Uganda. Documentation of lessons was carried out at each stage of project implementation and after each course in each of the three countries.

At the end of each mid-career course, trainees’ experiences were documented through a national writeshop resulting in three reports describing 20 learning cases. The reports form a resource for future mid-career courses as well as providing the basis for this book.

Finally, an international writeshop was also organized in Lilongwe, Malawi, with participation of the writers of the cases featured in this book (university staff and course alumni), and facilitated by KIT. Alumni of the mid-career course were represented through the selected best authors of the country level cases, listed in Table 1. An analysis across all the documented cases was carried out, and the experience on capacity building has been consolidated and documented in this book.

**TABLE 1: LIST OF CASES DESCRIBED IN THIS BOOK**

Chapter/country	Author	Organization	Thematic focus
<b>Chapter 2: GO4IT mid-career course participants’ cases</b>			
<b>Kenya</b>	David Ngugi Kuria	Ministry of Agriculture	Agribusiness opportunities and farmer organization for collective marketing
	Imelda Sara Namatsi	Mumias Sugar Company	A new approach to sugarcane fertilization
<b>Malawi</b>	Steve Dave Bondo Longwe	Ministry of Agriculture and Food Security	Improved management and usage of Moringa - an alternative income generation based on local initiatives
	Tonike Malema	Baka Research Station	Improved adoption of Nerica rice varieties
	Elias Gaveta	Catholic Relief Services	Partnerships for cassava and sweet potato production
<b>Uganda</b>	Rosemiria Birungi	Agency for Inter-regional Development	Management of links with partners
	Ayiga Patrick Obita	World Vision Uganda	Management of partnerships and documentation of work
<b>Chapter 3: GO4IT university cases</b>			
<b>Kenya</b>	Christopher Onyango, Bockline Omedo Bebe and John Momanyi Mironga	Egerton University	Curriculum change and strengthening of partnerships with other stakeholders
<b>Malawi</b>	James Sitima and John Kazembe	LUANAR	Change of curriculum content and delivery, and strengthening of partnerships with other stakeholders
<b>Uganda</b>	Prossy Isubikalu, Florence Birungi Kyazze, Jacob Godfrey Agea, Bernard Bonton Obaa and Gabriel Karubanga	Makerere University	Student-teacher interaction, curriculum change, and building on existing initiatives

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## 2 GO4IT mid-career course participants' cases

72 year old Lucy Nduta Wachira weeding her cabbage | Photo: David Ngugi Kuria





# Kenya

## Getting people to work together: lessons from Mawingu agribusiness innovation platform

BY DAVID NGUGI KURIA

*For many years, Mawingu division in central Kenya was not the most dynamic place you could find. In 2012, the Mawingu agribusiness innovation platform – a forum where farmers, extensionists, traders and input suppliers jointly set in motion an initiative to strengthen horticultural production – changed the area into a thriving hub.*

### From new technologies to understanding innovation

The Ministry of Agriculture in Kenya is mandated to carry out agricultural extension services and facilitate public-private sector partnerships in rural areas. As the principal of Ol'Joro Orok Agricultural Training Centre, I – like most Ministry professionals – aim to achieve this by using various agricultural extension methodologies, most of which require considerable financial resources for implementation. For example, I was involved with the National Agriculture Programme, the Livestock Extension Programme and the Smallholder Horticulture Marketing Programme. These programmes made use of multi-stakeholder forums to implement their activities. However, it was common for these forums to be dominated by a few individuals or organizations, especially those who controlled funds, while others took peripheral roles. Often, the stakeholders would consider the project a 'Ministry of Agriculture project', rather than their own. There would be no discussion on what was to be done, with decisions frequently made before meetings or consultations had even taken place.

Ol'Joro Orok Agricultural Training Centre had an outreach programme to train farmers in its catchment area, with a target of reaching 5,000 farmers per year. Associating 'innovation' with new technologies, I had tried to introduce greenhouse tomato growing, mud-tank water harvesting, a new technique for seed potato storage, and milk value addition. Photographs of all these technologies were presented to the Ministry headquarters as evidence of agricultural innovation, with my other colleagues at the Ministry taking the same approach. Partnerships were not promoted, as each officer wanted to take credit for the innovations he or she had introduced.

### And then I joined the GO4IT mid-career course with support from the Ministry

I joined the mid-career course to learn more about innovation, so that I could help get new technologies and information to farmers as well as provide an opportunity to support other staff members who were not participating in the course. The Ministry allowed me time to attend the course and engage in assignments. Once the training started, the provincial director

of agriculture would periodically telephone me to check on my progress. Following the GO4IT course, the district agricultural officer from Nyandarua Central deployed an extension worker to be responsible for the area covered by the innovation platform that I had set up. The extension worker was provided with a motorcycle to carry out agreed activities. The district agricultural officer in Nyandarua West, my immediate supervisor, gave me advice and moral support.

## What I learned

After two initial blocks of training in April 2012, I came to understand innovation as the application of new or existing knowledge in new ways or contexts to do something better. Innovation may be connected to technological, social or institutional changes, such as a new production method, new ways of working to enhance effectiveness, or new modes of organization among groups or stakeholders. Innovation may also involve the use of a forum comprising a broad range of stakeholders who share a common interest or challenge. These stakeholders come together to solve problems and develop mutually beneficial solutions. In an innovation system approach, each stakeholder has a role to play; jointly defining the roles and benefits for each stakeholder is essential. Unlike before, I now have stakeholders involved throughout an intervention, from design to implementation.

**Bulking and commercialization of vegetables, Mawingu, Kenya | Photo: David Ngugi Kuria**



## Building the Mawingu agribusiness innovation platform

After the GO4IT course, I began setting up the Mawingu agribusiness innovation platform, a forum whose overall goal would be the empowering of farmers to better their lives. I started in May 2012, talking to individual stakeholders and giving them an opportunity to air their views. A multi-stakeholder forum (including farmers, input suppliers etc.) was created to identify challenges and opportunities, beginning the process of innovation. The information was then used to develop a community action plan. This acted as a guide for the platform and officials were elected to spearhead the planned activities and ensure the sustainability of the platform. All stakeholders took on specific responsibilities towards achieving the plan.

During the initial platform meetings various challenges were identified and prioritized including: low prices of farm produce; lack of markets due to low produce volumes; poor infrastructure, especially rural access roads; high prices of farm inputs; and poverty, due to unemployment and subsistence-only agriculture. Opportunities identified to tackle the challenges included: the forthcoming, modern, horticultural roadside market at Ole'Roriundo; favourable weather for production of vegetables; and the availability of organizations willing to work in partnership with farmers.

The forum members decided to work together to take advantage of these opportunities. Farmers, for example, resolved to begin joint commercial production of vegetables in partnership with other stakeholders, such as input suppliers and traders.

**Samuel Kabucho (right) in his plot, harvesting garden peas with workers | Photo: Francis Muchiri**



Under the community action plan, farmers decided on a wide range of activities, including: bulk purchase of farm inputs like fertilizers and agrochemicals; group hire of tractors and bulldozers for farm operations and water pan construction; use of planting calendars and rotational programmes; registration of farmers' groups; contacting of more buyers for farm produce; following recommended crop husbandry practices; coordination of vegetable production to match market demand; sourcing grants from development partners for construction of agro-processing facilities and infrastructural improvements; and carrying out a feasibility study on the production and processing of sugar beet.

Farmers' technical knowledge was improved through a series of trainings facilitated by the platform on good agricultural practices. With the new roadside market not yet ready, several platform officials and I made contact with buyers in some major markets, including Nairobi and Mombasa. The farmers combined their produce to provide sufficient volumes to fill a lorry, which worked well for farmers with low volumes of produce, especially female farmers. The platform enrolled over 600 farmers and involved 18 self-help groups in six sub-locations.

Once implementation of the action plan had started, platform members began to come up with solutions to other challenges. These included the use of hired tractors for ploughing and use of herbicides within minimum tillage systems to reduce the use of manual labour and enable the farmers to grow vegetables on a large scale and at a very low cost.

Benefits accrued by local communities from being part of the platform have included: attraction of buyers from major markets (Nairobi, Mombasa); farmer empowerment in determining produce prices; bulk purchase of inputs at discounted prices; lower costs of transportation; and creation of employment for farmers, farm workers, loaders, traders and transporters. With infrastructure remaining a problem, platform members repaired some rural access roads themselves, independently of the local government.

The achievements of the Mawingu agribusiness innovation platform inspired some Ministry staff to ask for a similar approach to be scaled out elsewhere. After the final training in December 2012, I briefed the provincial director of agriculture and the three district agricultural officers in the districts that form the Ol'Joro Orok Agricultural Training Centre catchment area. The district agricultural officer in Nyandarua West was particularly keen to create a platform, and it was proposed that I train the staff working in Kangu-bahati locations of Ol'Joro Orok division, in order to initiate a similar process. I began this work in early 2013, firstly by meeting the different stakeholders. We jointly agreed to form a platform for the marketing of Irish potatoes and garden peas, and to train farmers on different production aspects of these two crops. I did this together with the local extensionists, as a way of introducing them to a new way of working and enabling them to continue working with the platform after my departure from the area.

## Hurdles encountered

Finding the time to participate in the training and to attend platform meetings was a challenge, given my responsibility for day-to-day management of the Ol'Joro Orok Agricultural

Training Centre. To address this, platform meetings were normally held at weekends, and I also assigned staff to carry out specific duties during my absence.

While sharing what I learnt with my colleagues and employer, it was at first difficult for them to see the difference between what I was proposing and what other projects were already doing, and how we could collaborate with these existing projects. To solve this, I invited staff from these other projects to join the platform. For example, the Smallholder Horticulture Marketing Programme fitted very well as it was funding the construction of the roadside horticultural market. Senior programme managers met with officials from the Mawingu agribusiness innovation platform, and the roadside market chairperson became a member of the platform.

Other challenges faced included the cost of mobilizing stakeholders and preparing enrolment materials. I footed the bill for these activities, although each stakeholder was asked to meet their operational and subsistence costs. Elected officials, chiefs and frontline extension workers were asked to mobilize farmers to attend meetings and trainings. However, as a result of the phenomenal number of farmers who wanted to be members of the innovation platform, farmers were asked to enrol in village groups, for ease of coordination and training. These groups were then formalized through registration with the relevant authorities.

Initially attendance by some stakeholders to meetings was irregular, which coincided with election time in Kenya. However, after seeing the benefits many realized that the platform was more important and attendance improved.

## Lessons and recommendations for the way forward

Egerton University's management should consider including agricultural innovation and transformation in the curriculum for all postgraduate students, while a related topic should also be included in undergraduate agriculture programmes. Topics such as sourcing funds to enhance scaling up of successful initiatives, incorporation of innovation systems into existing programmes and projects, challenges of forming and managing innovation platforms, and cost-sharing in innovation processes should be included.

All professionals participating in the GO4IT mid-career course should be offered further training and mentoring, which should ultimately lead to a formal degree, in order to maintain their commitment and learning. The GO4IT course should be extended to a period of two years, to help course participants carry out more practical work.

The Ministry of Agriculture's research-extension liaison unit should become an innovation and transformation unit, and be mandated to spearhead the training of extension officers on agricultural innovation for transformation. Personnel trained on agricultural innovation should be deployed at county level to train others and lead innovation programmes. This might help our country achieve its long term development goal, Vision 2030.



# Kenya

## New approach to block fertilizer application in Mumias Sugar Company

BY IMELDA SARA NAMATSI

*In 1998, Mumias Sugar Company encouraged all outgrowers to fertilize their fields through 'block fertilization', through which farmers had to apply fertilizer to their fields the moment it was received, under company supervision. This endeavour failed completely. Fourteen years later, I re-engineered the approach by introducing a small – but important – change in the way people communicate. As a result, the approach became a great success.*

### Agricultural operations in Mumias Sugar Company

Mumias Sugar Company is the largest sugar company in Kenya. It is located in the western part of the country and consists of 59,000 hectares (ha) on outgrower farms and 18,000 ha of land belonging to the company, called the nucleus farm. As well as sugar, the company produces ethanol, and the water used in the factory is purified and sold as bottled water. The factory crushes between 1.6-1.9 million metric tonnes (mt) of cane per year, although the annual target is 2.4 million mt. This target is not met due to the low quality (sugar content) and quantity of sugar cane the company receives, which in turn points to poor soil and crop management.

Fertilizer pre-application meeting with farmers of West Mateka | Photo: Elias Muga Ochieng



I work for the company as a ‘field supervisor’ (i.e. extension officer) in West Mateka. In this region, 3,696 outgrower farmers work in an area of 1,476 ha, divided into 270 blocks. In the out-growers’ section, there are 37 sub-locations, each being staffed by a field supervisor; 10 of these are women. In each sub-location, farmers are divided into groups of 7-15, forming a block.

Since Mumias Sugar Company was established in 1973, farmers have been supplied with fertilizer and left to apply it. The cost of fertilizer was recovered from the proceeds of the cane delivered to the company at the end of the cropping season. By 1990, cane yields had dropped from 80 tonnes/ha to 60 tonnes/ha. The reason for this fall was found to be that the supplied fertilizer was not being applied. Instead, it was being sold by farmers for cash or was applied to food crops. Even when the fertilizer was applied, farmers did not do so at the right stage, often keeping it stored for months beforehand. In 1998, the company’s management decided to adopt the use of block operations to solve the problem.

Under block fertilizer application, groups of farmers are supplied with fertilizer, which is applied by each farmer to his or her own plot on the same day it is delivered, an operation overseen by the company. The fertilizer could be supplied to farmers without warning, yet it was up to them to provide labour for the application the day it was delivered.

The system was badly received by farmers, as operations were planned for their fields without their prior knowledge, and without considering their existing plans and commitments. In addition, farmers resented being supervised, as they wished to sell part of the fertilizer. The block fertilizer application system therefore proved difficult to implement, and with company staff having no better approach, it ended. Nobody tried to understand exactly why it failed, and the supply of fertilizer continued as previously, with farmers free to apply it – or not – at their own convenience.

As a result, cane yields remained low and since the company recovered the costs of fertilizer and other inputs before paying farmers, some received little or no income from their cane. Many farmers became indebted to the company and disillusioned with cane farming. With this in mind, I decided to look into appropriate ways to re-engineer the block fertilizer application system.

## **Facilitating change: the case of block fertilization**

Before attending the GO4IT mid-career course, I used to think that innovation was starting something new that had never previously existed. My organization thought innovation was starting new procedures and allocating resources accordingly. Through the course – and by putting it into practice – I learned that an innovation’s success lies in the transformation of people’s attitudes, interactions and relationships. This may mean that by using the same resources, but by doing things differently, you are able to make things work well.

After attending the course, I decided to promote a different approach to delivering fertilizer to farmers in my area of operation. I began by holding several meetings with different stakeholders. The first was with Mumias Sugar Company staff, including the outgrowers’ service manager, outgrowers’ zonal manager, fertilizer supply section team, outgrowers’ field supervisors



**Block fertilizer application in West Mateka | Photo: Elias Muga Ochieng**

and field assistants in my area of operation. The main objective of the meeting was to share with them what I had learnt in the first block of GO4IT, and to explain my assignment, which was to facilitate an innovation process that could benefit everyone involved.

We discussed the causes of declining outgrower yields, and I told the team I would like to retry block fertilizer application in my area of operation. At first my superiors were unsure, but they promised to support me. Roles for each relevant department in the company were clearly defined. Field assistants were to prepare lists of fields requiring fertilizer and submit them to the fertilizer supply section in good time. The fertilizer supply section would ensure that fertilizer was loaded as per the date of application indicated by the field staff and ensure prompt delivery to the fields.

The second meeting was with area leaders, block leaders and farmers. The intention was to introduce to them a new way to work with block fertilization. There was a lot of resistance from this group but I provided them with space to voice their concerns and challenged them to come up with ideas on how their yields – and therefore their income – could be improved. From their previous experience, they feared that fertilizer would end up arriving very late in the day, without warning, and that its application would interfere with other activities. Responding to their concerns, I explained to them the roles of the different company staff and their own. I assured them that pre-application meetings would be held with them to agree the date when fertilizer should be supplied.



After that, once the lists of fields due for fertilizer had been prepared by the field assistant, I personally submitted them to the fertilizer supply section, so that they could prepare the deliveries. The field assistant conducted pre-application meetings and demonstrations with farmers, to share with them how fertilizer application could improve yields and why application should be done on the same day fertilizer was delivered. A date of application was agreed.

On the day before the agreed application date, I visited the fertilizer supply section to confirm that fertilizer for the intended blocks had been loaded in the lorry, ready to leave in the morning. On the application day, I joined farmers in the field, showing them how to apply the fertilizer. All in all, there was a transformation and willingness of stakeholders from every side to work together. Every stakeholder understood their role in the system and was given the chance to participate in the discussion of when fertilizer should be delivered so that this would fit well in everyone's programme.

The new system also led to an improved working relationship amongst farmers, who now work as a team in discussing and agreeing on when to apply fertilizer in their block. Farmers are also now providing better 'service delivery'. Fertilized plots have had vigorous growth and high yields. In some plots there was an increase of over 10 tonnes/ha above previous harvests, encouraging farmers to stay in the business. While average productivity for the whole company from July 2012 to June 2013 was 41 tonnes/ha, in my area of operation the average was 54 tonnes/ha.

## Challenges

The fertilizer supply section was used to its own system of supplying fertilizer to farmers. Adopting a new system did not come naturally, leading to delays in fertilizer delivery to cane blocks. Fertilizer which was expected in the field by 8 am arrived at 10 am, which demoralized farmers who wanted to finish the application before carrying out other activities. To solve this problem, I liaised with the fertilizer supply section to ensure that fertilizer was loaded on to the lorries the evening prior to the application.

Other extension officers initially did not believe that block fertilization could have a second life, since it had failed in 1998. I shared with them the importance of holding a pre-application meeting with farmers, and agreeing a date with them for the application.

If the farmers were not present in their fields as agreed, I engaged contract labour to carry out the application in their plots. This is paid by the company at KSH100 per bag of fertilizer, which is debited at harvest time from the farmer's account. Mumias Sugar field staff are also meant to be present in the fields during application. However, you might often find only four field staff on the ground to supervise 10 blocks. In response, I involved block leaders and students on field attachment to help in supervision, especially in blocks that did not have active block leaders. In some blocks, farmers have tackled the issue by electing new leaders.

## Support from the organization

Once a month, the senior management team inspects the outgrowers scheme to check on the crop in the field. When they inspected fields in my area of operation, the health of the crop led to them considering whether the methods being used there could be repeated in other sub-locations. They learned that farmers were appreciating the re-engineered block fertilizer application approach and they decided to make my area of operation a demonstration site for other field staff. They later ruled that no fertilizer should be taken to the fields unless the application had been planned according to the new approach.

To curb the problem of lack of staff on the ground for the application, the management decided to give tokens of appreciation – small sums of money – to area leaders and block leaders who assisted in making the application a success. This was given to those who met a target of 80% application, and this proved to be a very valuable incentive. Top management showed appreciation for my work in front of the 835 members of the company's agriculture section and also made it easier for me to reach my area of operation by providing me with a motorbike.

Block fertilizer application is now one of the key performance indicators for field staff. In every field supplied with fertilizer, a target has been set at 60% application. This is used to determine the percentage awarded for the annual bonus and salary increment. I am at 90% block application. In terms of personal professional development, my profile was changed from field supervisor for one sub-location to field operation officer. As such, I am responsible for four sub-locations, staffed by four supervisors and eight field assistants. This role will give me an opportunity to take what I have learned further. Farmers who achieved high yields through the block fertilizer application have been motivated and can now apply fertilizer without support. The communications department is also planning to publish my work in the company magazine, so that it can be read by many and scaled out further.

## Lessons and recommendations for the way forward

Effective listening and communication with stakeholders is very important because it creates a platform for discussion and identification of common goals. Working together and negotiation can lead to a transformation of people's attitudes, which is essential in successfully tackling a problem. In addition, a change of attitude can lead to a result, even with no change in resources. Moral support from superiors really motivates and encourages you to do your best.

There were also lessons learnt for the GO4IT course as a university programme. Egerton University management should consider including agricultural innovation and transformation in postgraduate programmes. Topics such as sourcing of funds should be included so that the course participants can upscale and out scale the innovation. The university could engage with top management in organizations, in order to offer the course through a series of seminars.

# Malawi

## Making the most of *Moringa*

BY STEVE DAVE BONDO LONGWE

*Building on local knowledge of Moringa oleifera, the Linga Agricultural Innovation Platform has promoted improved management and usage of this versatile crop. Partners involved in the platform include professionals, farmers and village heads. Training facilitated by the platform has supported local production of numerous products, for both sale and home use, boosting food and nutrition security as well as income.*

### Background

I work for the Malawian Ministry of Agriculture and Food Security under the Nkhotakota District Agricultural Development Office at Linga Extension Planning Area (EPA). There are 25 staff members at Linga EPA, and their main objective is to provide agricultural extension services to farmers to promote agricultural development through improvement of food, nutrition and income security at household level, thereby reducing poverty. The EPA oversees all agricultural activities in its impact area and farmers have access to high quality agricultural extension services.

The *Moringa Oleifera* tree | Photo: iStockphoto



## From linear extension models...

The Ministry was not fully aware of the latest thinking on agricultural innovation before I joined the mid-career course. Instead it focused largely on promoting conventional methods of farming and agricultural technologies, such as contour ridges, box ridges and crop rotation, among others. The organization also tended to ignore the indigenous knowledge of local farmers, and only disseminated research-based technologies. Additionally, there was little consultation with other stakeholders when dealing with things that needed a multi-sectoral approach, leading to duplication of efforts and occasional confusion, particularly when farmers in the same impact area were given contrary information from different sources. There was also no multi-stakeholder platform active in the area.

As an agricultural officer, my communication on agriculture-related activities and official matters was only with agricultural staff. Other stakeholders, like farmers, were not fully consulted for their views on new agricultural initiatives or concepts to be implemented. The flow of information was only one-way, i.e. from extension agents and researchers to the end users or beneficiaries.

## ... to paying attention to local initiatives

After attending the first part of the mid-career course, in October 2011 at LUANAR, I was introduced to a new concept and approach to the world of agriculture. Before I started the course I knew little about agricultural innovation. I was really challenged to learn the meaning of agricultural innovation and how it could be applied in my day-to-day work. The course broadened my skills, knowledge and competence on agricultural development, such as management and facilitation of a multi-stakeholder partnership, and analysis of an agricultural innovation system. It also enabled me to interact and share expertise with professionals of different disciplines also present on the course.

I shared what I learnt from the mid-career course with colleagues both within and outside my organization. For colleagues within my organization, I had a debriefing session and two subsequent sessions, where I shared the GO4IT course lessons. The feedback I received from colleagues was positive in that they were keen to learn new ways of agricultural innovation and eager to implement these in their sectors. As for colleagues outside the organization (including professionals from the Forestry Department, and development NGOs), I shared the competencies learned during multi-stakeholder meetings. All these efforts were aimed at imparting knowledge and skills to colleagues to improve their approaches and efficiency.

Following the GO4IT mid-career course I set up the Linga Agricultural Innovation Platform. The platform comprised a team of professionals from various disciplines, as well as farmers and local leaders such as village heads. The technical team was drawn from the Ministry of Agriculture, the Forestry Department, development NGOs – such as the National Smallholder Farmers' Association of Malawi (NASFAM), and Nkhoma Church of Central Africa Presbyterian (CCAP) Relief and Development – as well as the Farmers Union of Malawi and Nkhotakota Youth Organisation.

After conducting a situation analysis and problem identification, the platform came up with the idea of promotion, utilization and management of *Moringa oleifera* by local communities. The platform proposed this in order to address the problem of food deficiency and poverty in the impact area, building on local knowledge of the potential of *Moringa* to significantly contribute to households’ socio-economic needs. Each of the members was assigned tasks and roles within the platform (Table 2); sound partnership and collaboration among stakeholders was essential throughout the process. This way of working was the first of its kind in Nkhota-kota district, and was viewed very positively by members of the platform.

**TABLE 2: STAKEHOLDERS’ ROLES**

Stakeholder	Role
Forestry Department	Training farmers and other stakeholders in propagating <i>Moringa</i> and providing other related expertise to the platform
Ministry of Agriculture	Policy direction and provision of knowledge on management of <i>Moringa</i>
Farmers	Management of <i>Moringa</i> , i.e. planting, tending
NASFAM	Provision of seedlings and other inputs
Nkhoma CCAP Relief and Development	Conducting training in utilization of <i>Moringa</i>
Local leaders	Mobilization of local communities

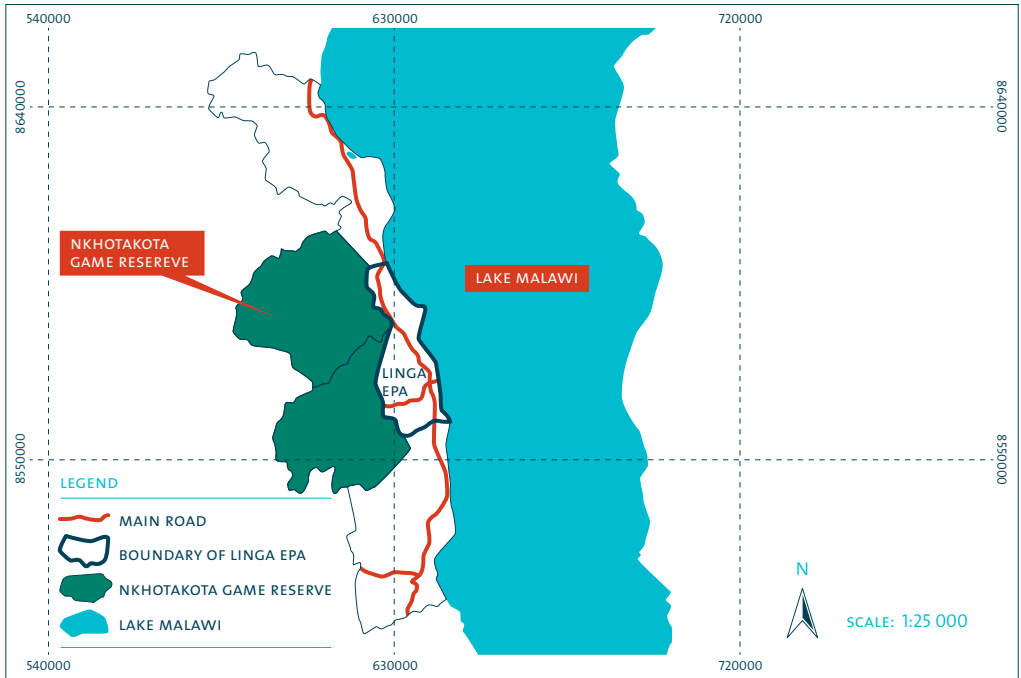
While farmers were already managing and processing *Moringa*, field days and on-farm demonstrations, organized through the platform, highlighted improved methods of management and utilization of the crop. In total, 250 farmers, 20 community-based organization members, 12 professionals from different sectors and six local leaders were trained. Through these trainings, farmers were able to process and sell *Moringa* products, including seeds, pods, poles, roots and powder made from *Moringa* leaves. In addition, 450 seedlings of *Moringa* were raised and transplanted into woodlots in six impact villages.

*Moringa* products were used by local communities for a variety of purposes, including as medicines, herbs, beverages (tea leaves), relish, vegetables and poles for live and ordinary fences. With many Malawians facing economic hardship, *Moringa* provided valuable locally-made products rather than communities having to use more expensive, commercial alternatives.

### Organizational and institutional change: Linga EPA

My organization learned a lot by virtue of my participation in the GO4IT course. Points of learning included a revised understanding of the term ‘agricultural innovation’, and the benefits of multi-stakeholder partnership. The idea of agricultural innovation in Linga EPA is bearing fruit: we are now working to scale out best practices in the use and management of *Moringa*, thereby adding value to the lives of the local communities. Some members of staff are using the knowledge and skills they acquired from participating in the innovation platform and the agricultural innovation systems training sessions, in other aspects of their work.

**FIGURE 4: MAP OF NKHOTAKOTA DISTRICT SHOWING LINGA EPA, WHERE THE PROJECT WAS CARRIED OUT**



While policies regarding EPAs are formulated at Ministry headquarters level, I am optimistic that we will manage to promote the agricultural innovation concept to sister EPAs in Malawi, resources permitting.

### Innovation platform: overcoming challenges

Some of the major challenges I encountered were:

- Transfer of some public sector innovation platform members from Nkhosakota to other districts. Other members left the area to seek greener pastures, especially in the private sector;
- Finding a time to meet was a challenge, as every member had regular commitments to their employing organizations;
- Lack of financial support to fund facilitation materials, such as flip charts and markers for multi-stakeholder partnership meetings.

In response to these challenges, innovation platform members agreed to carry out their platform duties on a voluntary basis, on the strength of their personal commitment to the work. Platform meetings took place on Friday afternoons, from 2-5pm – a time that best suited the members. Transferred innovation platform members were replaced with new ones, and I used my own financial resources to buy facilitation materials and refreshments for the multi-stakeholder meetings.





The *Moringa Oleifera* tree | Photo: iStockphoto

## Lessons and recommendations for the way forward

I would like to make a number of suggestions and recommendations for the GO4IT organizers in planning the next course:

- Communication with course participants should be improved. Dates for the courses should be announced far in advance, allowing trainees to better plan their schedules;
- The organizers should consult and raise awareness with the employing organizations about the course. It would be useful, for example, if LUANAR organized a meeting with the employers to explain the purposes of the course;
- There needs to be a clear policy on how field work expenses are to be covered. This will motivate both trainees and facilitators of the course;
- Intervals between the blocks of training are too long and should be shorter to allow better monitoring of the trainees and to maintain their enthusiasm. A considerable number of trainees on the first course dropped out because of this, and because there was to be no certificate awarded. The organizers should therefore ensure those who follow the course receive a proper certificate. This will attract many course participants, as well as motivate them to work even harder in course assignments;
- LUANAR should think about upgrading the course and offering higher certificates, like a BSc or MSc in Agricultural Innovation Systems.

# Malawi

## Overcoming resistance to the adoption of Nerica rice in northern Malawi

BY TONIKE MALEMA

*Disseminating a new crop variety to smallholder farmers is not always straightforward. Many farmers are hesitant to innovate and adopt a technology unless they can clearly see the benefits. By establishing an innovation platform for the adoption of Nerica rice varieties, I facilitated collaboration between key players in the local rice value chain, giving farmers access to seed and training, and motivating 100 farmers to adopt the new varieties.*

### Introduction

The mission of Baka Research Station in Karonga district, northern Malawi, is to conduct strategic, demand-driven research and generate technologies and information in cereals, horticulture, fibre crops and grain legumes, in order to alleviate poverty. Crops that have benefited from new technologies introduced by the station include sweet potato, cassava, rice, maize, banana, pigeon pea and groundnut. The research station has been in operation since 1974 and is mainly engaged at full capacity during the rainy season. It has been using a number of methodologies and initiatives to ensure that technologies are disseminated to farmers and NGOs in Karonga district. These include conducting field days, on-farm and on-station demonstrations, training, and distribution of factsheets on new technologies.

### Before GO4IT

While Baka Research Station considers agricultural innovation as important for sustainable rural development and success in the uptake of technologies that it has developed, it had not adopted agricultural innovation approaches in its research and dissemination before I started the GO4IT mid-career course. The agricultural experiments at Baka aim to improve the living standards of farmers by developing varieties that are high yielding as well as disease and drought resistant. However the research station has lacked skills and knowledge on how to form an innovation platform in order to bring about change in the local communities. Baka had no proper procedures in its operations, and a systemic process was not followed when implementing technologies, particularly as technicians were used to working only in their respective sections. This meant that there was a need for technical staff to understand the agriculture innovation system concept, in order to develop better ways of disseminating technologies to farmers in the district.



Though I had been working in the agriculture sector for more than two years, I had limited knowledge of agriculture innovation prior to the course. I was motivated by the desire to be able to facilitate agricultural researchers, end users and others to adopt technologies for improvement of their livelihoods, but I did not have the knowledge and skills to facilitate an innovation platform.

## Smallholder farmers

In Karonga district, smallholder farmers who grow rice have had poor access to high yielding varieties, resulting in low yields, food insecurity and poverty at household level. The fields which are suitable for upland rice are underutilized and no proper mechanism has existed for the dissemination of new varieties.

In 2005, the Department of Agriculture Research Services began to acquire Nerica varieties from Uganda, these improved varieties of upland rice becoming the subject of research in the 2005/2006 rainy season. Two of these varieties, Nerica 3 and 4 were released in 2011 for adoption by farmers, with a potential yield of as much as double that of traditional varieties. The new varieties were also more resistant to drought and dry spells, had greater disease tolerance, were less likely to shatter on maturing, had higher protein content, and matured in 90-120 days, compared to around 150 days for traditional varieties. Hence adoption of the Nerica varieties offered farmers considerable benefits.

## Change after GO4IT

With support from the GO4IT project, Baka Research Station established an innovation platform with the goal of promoting Nerica 3 and 4 among smallholder farmers in the district. However, stakeholders in Karonga's rice value chain had different interests and had no access to new technologies for the management of the newly-released rice varieties. Many stakeholders, including the Farm Income Diversification Programme, still promoted traditional rice varieties, and it was difficult to find interest in the introduction of Nerica 3 and 4. Initiating the platform was therefore not easy.

However, the GO4IT course taught me a lot that was useful in the process of setting up the platform. In particular, I learned how to monitor and evaluate partnerships and became familiar with the ways of facilitating innovation, framework analysis and other partnership concepts. Through the various activities and discussions we had with platform stakeholders, I learned that the success of an innovation platform relies heavily on knowledge-sharing, since farmers and NGOs have different ideas, interests and opinions. Secondly, consultation and collaboration with platform members is crucial and should be carried out as part of the innovation process, so that all members feel fully involved. Through proper co-ordination, the roles, responsibilities and use of resources are shared equally among platform members.

## Organizational change

Baka Research Station has learnt a lot about team work. Technicians who used to work only in their respective sections are now actively involved in implementing this Nerica project as a team. In understanding the agricultural innovation concept, Baka staff learned that farmers are key partners in an innovation process and we have to work hand in hand with them. Farmers need knowledge and skills for the implementation of a technology. If farmers are ignored in decision making they may fail to take part in an innovation platform. The research station now operates differently and understands what agriculture innovation is all about, in theory as well as in practice. The activities of the Nerica project have become part of the organizational work plan.

### Implementation of an innovation platform and results

Despite attempts to involve different types of stakeholder in the innovation platform, it was quite a challenge to find potential partners. I was able to overcome this, however, by using the strategies learned during the course on identifying stakeholders. The innovation platform was then formed through several meetings with those I had identified. Each stakeholder was assigned specific roles and responsibilities for the smooth running of the platform and its activities. In a pilot phase, 10 interested farmers were identified as the ultimate beneficiaries and were each given 3 kg of Nerica seed as a starter pack by the research station, for demonstration and multiplication on a 400 m<sup>2</sup> piece of land. These 10 farmers were trained by extension workers in cultivation techniques for Nerica varieties. Individual farmers were also given coaching in commercial rice production, with the help of the Foundation for Community Support Services and Karonga Agriculture Development Division.

Promoting collaboration with stakeholders has been a key part of my work to facilitate the innovation platform. Initially, when I was attempting to disseminate the Nerica varieties to farmers in the Lupasyo area of Karonga district, there were only 10 farmers who agreed to plant demonstration plots. But after a field day conducted on 27th April 2012, a lot of farmers who saw how the varieties performed were interested in them, due to their early maturing, high yielding and drought resistant characteristics. As a result, we are now dealing with one hundred farmers (68 males and 32 females) who are cultivating Nerica varieties.

Secondly, we formed 12 Nerica adoption groups in three villages in the Lupasyo area, which have been trained in managing the varieties. Extra field days and demonstrations have been established for farmers to appreciate the varieties. Lastly, there is scaling up of Nerica seed production on 1.5 ha at Matera in Karonga, with funding from the Irrigation, Rural Livelihoods and Agriculture Development Project, so as to multiply the seed and meet the increasing demand among farmers who are ready to pay for it.

The demonstration plots were critical in helping to overcome farmers' reluctance to adopt the new varieties. Farmers also wanted to be given the rice seed and fertilizer for free, which was difficult to achieve. This was solved through the platform, with the Foundation for Community Support Services agreeing to buy the seed from the station and distribute it to farmers. Discus-

sions were made with farmers on market issues and it was agreed that the platform will try to find potential buyers of Nerica rice, since more farmers are adopting it. The Government of Malawi has also started buying the rice through the Agriculture Development and Marketing Corporation.

### **Support from Baka Research Station**

Baka Research Station management supported me by giving me permission to attend the agriculture innovation course, and by providing both a vehicle and free Nerica seed for initial farmer demonstrations. They anticipate that the knowledge and skills that I gain will enhance my capacity to conduct relevant AR4D, and to facilitate collaboration between extension staff, farmers and other development partners, in order to promote agricultural innovation.

### **Lessons and recommendations for the way forward**

The GO4IT mid-career course is helpful and LUANAR should continue with it so that a lot of people can benefit from enhanced skills and knowledge. The course and field work have helped to connect different people in my organization, such that we are now able to identify farmer's needs and address them using the innovation system concepts. LUANAR and other universities implementing the GO4IT project should offer tailor-made, short courses so that other mid-career professionals can benefit. Meanwhile mid-career course participants could also continue to share among themselves through a Facebook page.

# Malawi

## Enhancing partnerships for cassava and sweet potato production in Malawi

BY ELIAS GAVETA

*Learning to operate as part of a value chain, through sharing of information and complementary efforts with different chain actors, is the most rewarding aspect of partnering, as it eases the identification and solving of problems.*

### Introduction

The USAID-funded 'Wellness and Agriculture for Life Advancement' (WALA) programme is implemented by Catholic Relief Services, through the diocese of Chikwawa, in the Chikwawa district of Malawi. The programme promotes agricultural practices such as conservation agriculture, watershed management, post-harvest handling and storage, together with seed and vine multiplication, to contribute to reduced food insecurity. This is not unique to WALA, with the Ministry of Agriculture and various NGOs carrying out similar interventions. However, such programmes and projects have, until recently, been taking place without any attempt by technical staff involved to combine their experiences or coordinate their activities, leading to duplication of efforts and wastage of resources.

Involving farmers in vine multiplication | Photo: Elias Gaveta



Cassava and sweet potato are important food security crops, as they require fewer inputs, less labour and can be produced in marginal growing conditions, including dry spells and poor soils. In addition, they are established using low-cost vegetative propagation, have a flexible harvesting calendar and can be safely 'stored' in the soil prior to harvesting. Orange-fleshed sweet potato varieties are fortified with beta-carotene, the precursor to vitamin A, which is important for growth and development and for maintenance of the immune system, and is therefore particularly crucial for children and pregnant women (Abidin *et al.*, 2012; Haggblade *et al.*, 2012).

The value of these tuber crops is particularly important in the low-lying areas of Chikwawa district, where the temperatures are generally high, ranging from 27.0 to 37.6°C. This, coupled with seasonal floods and mid-season droughts, makes Chikwawa one of the most vulnerable districts in Malawi (Shumba *et al.*, 2012). Demand for cassava and sweet potato among smallholder farmers has not yet been met in the country, due to poor access to improved sweet potato vines and limited capacity of farmers to keep virus-free planting material (Moyo *et al.*, 2004). These problems have also been linked to ineffective delivery of extension messages.

For WALA, the need to build resilience among farmers through cassava and sweet potato production requires a different approach than the piecemeal, uncoordinated efforts by different organizations. Without proper strategies for deliberate collaboration among NGOs, research departments, extension services and input suppliers, farmers will continue to face challenges in accessing appropriate varieties, production technologies and profitable markets.

In the news! | Photo: Ephraim Nyondo

12 ENVIRONMENT

THE NATION  
THURSDAY, APRIL 18 2013

EPHRAIM NYONDO  
News Analyst

# Chikhwawa winning with conservation agriculture

Some districts in Malawi have been known to be food secure in one year, only to fall into the club of food insecurity the next. But Chikhwawa is not one such district. Its food security pendulum does not oscillate.

Every year, Chikhwawa is always on the list of districts with cases of food shortages. What could be the problem with the district?

"Climate change is taking a heavy toll mostly in Chikhwawa. Apart from frequent floods, the district, due to its high temperature, experiences frequent dry spells. This destroys its soil structure, which leads to crop failure," says Duncan Magwira, Chikhwawa district agricultural development officer (Dado).

Interestingly, the challenge facing Chikhwawa affects many other districts in the country which continue to struggle due to climate change.

But with support from the Catholic Relief Services (CRS), which is a grant

holder, and funds from USAID, the Chikhwawa Diocese is implementing a project called Wellness and Agriculture for Life Advancement (Wala) in six traditional authorities, namely Kasisi, Lundu, Mankhwira, Ngabu, Masaya and Katunga.

According to Elias Gaveta, Wala's agriculture and natural resource coordinator for Chikhwawa Diocese, the project mostly targets smallholder farmers.

"We train farmers on how they can conserve soil fertility through use of manure, crop rotation and also, most importantly, in seed multiplication which, basically, aims at involving farmers in the multiplication and dissemination of improved varieties of sweet potato and cassava," he says. Elliness Chipwala of Traditional Authority



Wala officials and some local farmers in a nursery of cassava seedlings

Kasisi is one of the maize and cassava farmers who, two years ago, attended the training and orientation of the programme.

"Despite working hard every growing season in the past four years, I have always found myself going hungry during the

consumption season," she says. However, in the 2012/2013 season, Chipwala is not one of

the 257 653 people who were food insecure in the district.

In her maize garden, instead of applying fertiliser, she filled the ground with residues and planted improved maize varieties in carefully dug holes which had manure in them. She also did this in her cassava farm.

"The residues helps to keep the ground cover warm and fertile, as a result, makes it healthy for the crop to grow easily," explains Gaveta.

And it worked for Chipwala.

"After I started using these conservation methods, I harvested 15 bags of maize. I also had a lot of cassava to eat. I am expecting more this year," she says.

Magwira says his office will work closely with Wala to ensure that the farmers don't fall back.■

PHOTOGRAPH: EPHRAIM NYONDO



## Situation before GO4IT

Several organizations, besides WALA, were involved in cassava and sweet potato promotion but without any intentional collaboration. More importantly, there was no forum where these different organizations and programmes could meet to share experiences and lessons from their work. The lead farmer approach – whereby volunteer farmers act as focal persons in communities and take the responsibility to keep farmers organized – was endorsed by the Department of Extension Services, but was only practiced in pockets and not by all organizations. Promotion of crops tended to only emphasize production, with little attention paid to agro-processing or marketing. Finally, farmers were seldom organized, resulting in a general lack of collective action and reduced access to planting materials and other related services.

## Stakeholders and facilitation

After the first and second GO4IT course blocks, I shared the outcomes with work colleagues and we decided to organize a workshop to which key stakeholder representatives were invited to discuss opportunities and means of achieving greater cooperation. As a result of the discussions, each member organization of the platform agreed on their roles and responsibilities.

The district agricultural office – as the most permanent and overarching structure in the district – agreed to coordinate and oversee cassava and sweet potato activities. WALA took on the logistical support, reporting on progress and acquiring vines for dissemination. The district office (Chikwawa Rural Development Project) and Catholic Development Commission were given the responsibility to link stakeholders to decentralized vine multipliers (commercial farmers), having had prior experience of working with them. Kasinthula Research Station was given the role of providing information on varieties and cleaning of plant material, while World Vision, Concern Universal and Eagles Relief assisted in extension message delivery and assessing knowledge gaps among farmers.

The platform took advantage of the unique characteristics of each participating organization. For example, we learnt from the extension department the approach of using farmers as extension agents as well as vine multipliers. Farmers are organized in 15-member ‘producer groups’ under a lead farmer, who volunteer to invest individual resources such as land, time, labour and equipment. The lead farmers were trained and given the responsibility to share extension messages and to multiply vines for dissemination to the other farmers. The platform disseminated improved varieties to 45 farmer groups to discourage cultivation of recycled plants.

Following the creation of the platform, exchange of information between researchers, extension services and NGOs has improved. The Catholic Development Commission linked WALA to its decentralized vine multipliers, who became the farmers’ main source of the Zondeni sweet potato variety. The stakeholders were engaged in building the capacity of extension staff and farmers in vine multiplication. The International Potato Center (CIP), which is implementing a ‘*Rooting out hunger in Malawi with orange fleshed sweet potato*’ project, also became interested in the initiative. As a result, CIP provided 10 drip irrigation kits to support vine multiplica-



tion in drier areas, to address the challenge of losing vines through water scarcity. Kasinthula Research Station provided farmers with 500 kg of Chipika and 100 kg of Kalawe vines.

To achieve sustainability, stakeholder involvement in programme activities is now a critical strategy being implemented by WALA, which is due to end in June 2014. The vine multiplication element has also been more widely adopted by smallholder farmers, both within the flood recovery plan and other WALA interventions.

## Individual learning

Facilitating an innovation process requires interpersonal skills, which were acquired through the GO4IT project. Stakeholder analysis and careful handling to keep partners engaged are key to the platform remaining intact and focused on its core objective. Agricultural innovation encompasses both technical and management issues. The training built self-confidence and led to lobbying for resources and support from managers in the different organizations involved. Their continued support is evidence of changing attitudes towards innovation platforms among individuals from different organizations. The learning itself depended on actual practice and became more interesting as we applied our understanding of innovation platforms in our day-to-day activities. Peer-learning, not only among platform members but also with farmers, was essential in understanding the full potential of working in collaboration.

## Organizational and institutional learning

The general objective of the platform was to contribute to food security among smallholder farmers through improved production of cassava and sweet potato. However WALA, as an organization, adopted the approach more widely, through its health and nutrition interventions, and benefited through improved collaboration and increased numbers of beneficiaries reached. Establishing a network for knowledge and resource sharing builds the capacity of an organization and increases its relevance in society. Participating organizations managed to adjust their ways of operating, enabling them to reach out to more farmers than before the platform was established. Learning to operate as part of a value chain, sharing information, and looking for ways to set in motion complementary efforts, have been seen as the most rewarding outcomes for platform members.

Facilitating and maintaining partnerships incurs costs, and this was covered by the WALA programme as evidence of Chikwawa Diocese-WALA support for the platform. Active participation at meetings by the programme manager, agricultural livelihoods manager and finance personnel are indicative of the organization's commitment to the initiative.

## Challenges

The platform has experienced success as well as challenges. Among the setbacks has been the diminishing commitment of some stakeholders in executing their roles, which may have been due to a lack of adequate resources and staff turnover. Meetings to get to the root of this problem are underway. The initiative was also affected by the limited efforts of some lead farmers

to effectively engage other farmers. This required extra resources to re-orient farmers in group dynamics, which is now bearing fruit. Insufficient vines at Kasinthula Research Station halted activities on the ground. Fortunately Bvumbwe Research Station came to the rescue by making up the shortfall.

## Lessons and recommendations for the way forward

To sustain innovation in the longer term, platform members suggested that farmers be trained in a number of skills that can assist them to better understand the value chain. For that, we are building on the ‘five skills’ approach – combining crop production, marketing, savings and loans, group organization and innovation – that was rolled out to farmers in other interventions. It outlines the roles of farmers at every stage of the chain and encourages them to look beyond production towards a business approach that will, in turn, sustain their production practices. This is in line with the agriculture sector-wide approach that the Ministry of Agriculture has adopted, and embraces issues of value addition as a way of developing a domestic market. The approach has elements of participatory planning, monitoring and evaluation, to allow platform members and farmers to own the innovation and develop mechanisms for scaling out and up.

The involvement of the district agricultural office was to ensure the continuation of extension messages. This will also be done through the lead farmer model. Kasinthula Research Station has committed to working with some of the farmers in on-farm trials for cassava and sweet potato to involve them in the ongoing promotion of these shock-tolerant crops. To ensure that skills are sustained within an organization, there has been emphasis on the documentation of case studies, which ensures continuity in times of staff turnover and provides a greater number of staff access to information.

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# Uganda

## Setting in motion organizational change to create partnerships on poverty and hunger

BY ROSEMIRTA BIRUNGI

*Strategic partnerships are a key approach in the work of the Agency for Inter-regional Development (AFID). Using lessons from the GO4IT mid-career course, I have been able to introduce a new understanding to Agency management and staff on how partnerships need to be managed in order to foster innovation. Communication with potential partners has now been prioritized within the organization, and the finance unit has allocated funds to support this. Staff are now tasked to engage with partners in all Agency projects.*

### Introduction

AFID is a development agency working in three programme areas: capacity building, research and strategic partnerships. Its work targets six sectors pertinent to the Eastern and Central African region, notably: water, agriculture, health, environment, livestock and gender. In the agricultural sector, AFID focuses on promoting, coordinating and facilitating technologies in market-oriented agriculture. Strategic partnerships with stakeholders at community, national and regional levels have been at the heart of the Agency's approach.

### Situation before GO4IT

By the mid-2000s, international, regional and national organizations in AR4D were highlighting the need for technologies that truly impacted on people's livelihoods. Innovation, in this context, goes much further than technology: it looks at how a 'new way of doing things' has been applied to make a difference in people's lives. The concept of innovation and its application were relatively new to me and my organization, as well as most of our project partners. Nevertheless, I was engaged in developing and implementing projects to generate technologies, methods and approaches that I thought were new and would deliver change. This situation could be described as 'learning through trial and error'.

AFID was already employing a collaborative approach, involving a number of actors throughout its project implementation. This collaboration emphasized the definition of roles and expected outputs, adherence to a project reporting framework, and participating in partner review meetings. The overarching thinking was that innovation was central to livelihood development, especially at community level. Key to success was an understanding of how the innovation process could be facilitated to bring about the desired change in technology development and transfer. For an example of what that meant in practice, see Box 3.

### BOX 3: PRIOR TO THE GO4IT MID-CAREER COURSE

A project for the development and incubation of market-driven innovations for dry season feed supply among agro-pastoral women in Migyera-Nakasongola district was funded by ASARECA. This was a partnership project that involved an agro-pastoral women's group, a zonal agricultural research organization and three national universities in East Africa. AFID's partnership with universities and research organizations in the region was a result of my previous participation and contacts made during ASARECA capacity building activities. My contribution to this collaboration was to give support in the area of community engagement and market-driven agriculture, both in project design and implementation. By the end of the project, the partners and funders were familiar with

me, rather than with my organization and staff, because I was always the one to represent AFID in project activities. This included community-level activities, attending regional review meetings, and providing feedback and reports on project progress. Reflecting on this situation some time before the GO4IT course, I felt this emphasis on my involvement was undesirable for AFID, posing a risk that projects would not go ahead if I, personally, was unable to participate. In addition, sharing of knowledge would be limited when only a few AFID staff members were involved. I then started thinking about, and seeking to learn from other organizations, how I could engage AFID staff more actively in knowledge sharing and creating partnerships.

In 2012, I enrolled for a PhD in Agricultural and Rural Innovation with Makerere University, hoping to learn how to do things differently. A number of relevant modules were delivered but I was still struggling with how to apply the knowledge in my work as a programme manager, responsible for project development, implementation and reporting. I had taken over 25 national and international short professional development courses in the fields of export marketing, competitive grants, project design and implementation, consultancy and advisory skills, training and adult facilitation skills, and management of development projects. However, I still felt that I was lacking skills and knowledge in how to build partnerships for my organization, and how to make my staff dynamic and take leading roles in the innovation process. In February 2013 I was selected for the GO4IT mid-career course.

Hay feeding for calves | Photo: RoseMirta Birungi



## Impact of GO4IT

The GO4IT mid-career course was a timely training that was directly relevant to what I was seeking to understand: setting in motion organizational change to create partnerships. During the course, the innovation systems perspective was presented as an approach that seeks to improve the way things are done, both in terms of efficiency and effectiveness. The need to follow a systematic process in forming and sustaining partnerships was particularly emphasized. As it happened, the case study presentations were picked from some of the projects that I had participated in, including the Sub-Saharan Africa Integrated Agricultural Research for Development initiative, and collective marketing for smallholder farmers. Constraints in the management of partnerships were highlighted, making me realize that the way partnerships are managed in most development projects is a serious issue that needs attention. This became my take-home message at the end of the training, having been encouraged to practice what we learnt.

### BOX 4: POST GO4IT

In March 2013, a month after the GO4IT course, I took a two-month placement under a Borlaug Fellowship at Pennsylvania State University, USA, funded by USAID. During this period I sought opportunities to create partnerships for my ongoing livestock feed innovation project among agro-pastoral communities in Nakasongola district. I was invited to give a lecture to undergraduate and postgraduate students on the International Agriculture and Sociology course. My task involved reflecting on the course content and a book,

*The Last Season of Hunger*, which was being used to guide a discussion on the hunger situation in Africa. I organized discussions on the innovation approach and emphasized that the hunger situation in Africa is a multi-stakeholder issue. These discussions prompted follow-up meetings with staff and affiliates of the agricultural and food science departments of the university, to discuss possible partnerships for ongoing projects and to share perspectives on the challenges and possible project interventions.

### Farm Field visits on hay making | Photo: RoseMirta Birungi



## Individual change

The GO4IT mid-career course changed my knowledge, attitude and practice in how to interact with people in the creation of partnerships. The innovation concept provided me with a framework to discuss ways of tackling poverty and hunger through agriculture and rural development in Africa (see Box 4), and to set in motion a change in my own organization. In the process of putting the latter into practice, I have learnt that coordination skills are important when dealing with multi-actor and multi-level processes. In that respect, I had to improve my punctuality in attending scheduled e-discussions and other meetings, as well as in giving feedback on action points agreed upon.

## Partnership

Discussions with potential partners are now open to all interested and relevant AFID staff. Engagement in discussions has helped staff understand the importance of seeking partnerships for projects, and they are now being tasked to engage with partners in their AFID projects. Flexibility in allocation of staff time for setting up and strengthening partnerships has improved, with the finance unit supporting this process by allocating funds for communication with potential partners. A key achievement is that the staff feel more empowered to initiate discussions with potential partners rather than looking to me to spearhead activities. Staff now appreciate that project collaborators are organizational partners, rather than personal friends or peers, as was the earlier situation.

## Institutional change

Setting in motion organizational change to create partnerships for development projects is a step-by-step process. Previously, AFID partnerships had been on a personal level. Realizing this gave me an opportunity to bring other AFID staff on board, to own the process. In the case of the partnerships initiated during my visit to Pennsylvania State University, for example, it meant that I made a purposeful effort to introduce the university partners to several staff from my organization. I delegated further contact to the head of the Nakasongola projects on feed management, which gave the partners a better understanding of the people within AFID. The potential partners expressed confidence in building partnerships with AFID for ongoing projects.

## Lessons and recommendations for the way forward

Building partnerships needs commitment, because at inception, the process for involving partners requires investment of resources such as staff time and funds, which may not be supported by the organization. The facilitator needs to look at future prospects from the partnership rather than at immediate project gains, in order to successfully set in motion organizational change to create partnerships. Managing partner expectation is a skill that should be acquired or strengthened during the GO4IT mid-career course, otherwise divergent expectations can make potential project partners lose trust in the partnership.

As a way forward, I will document lessons learnt in setting in motion organizational change to create partnerships, and share them widely among AFID staff members. Guidelines on attracting and nurturing partnerships will be documented and discussed by AFID staff, for integration in the Agency's projects and programme implementation manual. In addition, the new experience will be used to seek more partnerships for project support in other AFID countries and project sites. AFID is also committed to enable another staff member working in projects and programmes management to attend a future GO4IT course.



# Uganda

## Cultivating an innovation culture from the field up: World Vision Uganda's Mpigi and Butambala programmes

BY AYIGA PATRICK OBITA

*My role within World Vision Uganda has been to provide an environment in which innovation processes can be undertaken by the staff, which is achieved by giving space for staff to share their ideas and put them into practice.*

### Introduction

World Vision is a Christian relief, development and advocacy organization dedicated to working with children, families and communities to overcome poverty and injustice. World Vision Uganda began operations in 1986 to respond to the needs of the victims of the 1981-1986 National Resistance Army guerrilla war in the Luwero Triangle, in northern Uganda. The intensification of the ongoing unrest led World Vision to introduce food assistance in early 2000. From 2003 to 2008, the organization ventured into food security grants, supported by USAID, both in northern Uganda and Masaka district, in central Uganda. This approach emphasized input distribution with some incorporation of market approaches. The organization has since embraced food assistance in emergency situations in areas that are vulnerable to harsh weather conditions, such as Karamoja. However, there has been inadequate integration of agricultural interventions to address food security and livelihoods in other World Vision projects.

### Where were we, in terms of agricultural innovation systems thinking?

World Vision identified several capacity gaps in their agricultural interventions, such as a lack of integration within projects and, at the national level, targeting too many enterprises. This led to limited impact. World Vision therefore sought partnerships with organizations with the technical capacity to address these gaps, including the district production and agricultural offices (community level) and the Ministry of Agriculture, Animal Industry and Fisheries (national level). The organization also sought partnerships with research institutions, university agricultural and extension departments, and marketing channels. Participating in the GO4IT mid-career course was therefore welcomed by World Vision Uganda in its efforts to realign approaches to innovation, contributing to greater impact from its interventions.

My role in the organization is to provide leadership and management of World Vision's programmes (area development programmes and grant projects) within Mpigi and Butambala

districts. My mandate is to support the development of programme and project design and planning, and facilitate their implementation in a manner that empowers communities, children and local organizations, including the facilitation of multi-stakeholder interaction's activities. I oversee and coordinate interaction with farmers and communities, as well as build the capacity of our team and partners.

Prior to the GO4IT course, I lacked an in-depth understanding of innovation systems and the factors which need to be strengthened in order to foster innovation. My interest in the training was to find out how innovation facilitation processes can be used to support development processes. I sought to acquire practical skills and knowledge on how to facilitate innovation processes within my team, and on documentation of innovation processes. Documentation is a key area of interest as it allows us to showcase our work and share experiences with stakeholders at various levels.

## What has changed?

### At the individual level

Individual reflection on what we needed to do differently from 'business as normal' was a valuable lesson. In addition to the group action plans, the Mpigi programme staff came up with specific actions for acting on individually, which was great, as it gave them responsibility for addressing issues within their mandate. Secondly, the training on innovation practices helped them to list successful approaches and processes. We achieved consensus about documenting and sharing management of key performance indicators, meetings, concept notes, and working documents, both within and outside the organization with partners.

The role of communication within the facilitation of multi-stakeholder processes was also very useful as it stimulated me to reply to letters from partners to assure them of my commitment, and to show that their communication was valued and respected. Another module on facilitation and interview skills helped me to document the steps used in engaging partners at the district and sub-county levels in planning project activities. As a result, my supervisor encouraged me to take part in a training of trainers activity focussed on project management for development professionals.

### Organizational change

Two World Vision Uganda staff were supported to take part in the GO4IT course: Khauka Edward and myself. We were chosen due to our agricultural background and competence in facilitating development processes involving multiple stakeholders. World Vision considers us as pioneers who will assist in rolling out new innovation processes, which are an organizational aspiration.

I geared a GO4IT training report towards how to identify and document innovation, and this was shared with the team. Based on additional discussion, the programmes development director and the livelihood specialist have developed a plan for Edward and myself to meet the national director to share the course report and discuss how it can be integrated within the organization. World Vision Uganda's leadership is keeping a keen eye on how the knowledge



Drawing made by Washington Ochola

and skills obtained are being used before rolling out the approach more widely. To this end, the regional operations manager has decided that the Mpigi and Butambala programmes should implement the training course content as a model that other programmes can learn from.

After our participation on the course, staff were able to better understand innovation and hope to see more innovation processes being undertaken within our work. One staff member commented, “I used to think that innovation needed to be calculated and had formulas. What I have learnt is totally different: it is about a process whereby knowledge is used to create value in the lives of people.” This change in understanding provides a platform through which the staff can contribute to developing a culture of innovation within the organization.

### **Institutional change**

The participation of district and sub-county stakeholders in monitoring project activities, and the steps taken in coming up with a joint strategy for planning and implementation of World Vision project interventions, were thoroughly documented. The strategy was then shared with World Vision staff in the Mpigi and Butambala programmes, the Uganda national office and other staff across East Africa.

As a result of the staff training, there has been increasing openness to document the organization's work and successes, with the involvement of the Mpigi and Butambala programmes.

## Lessons and recommendations for the way forward

Modules and course procedures need to be adapted to take into consideration organizational needs that are to be addressed, making the mid-career course more tailor-made. In the case of World Vision, for example, this would mean that on any future course it would also be helpful to involve trainers and practitioners with significant experience of community interaction in giving the trainings. Partnerships between Makerere University and participating organizations need to be built and/or strengthened to provide a platform in which theory and practice are merged to effectively improve the wellbeing of the communities served.

The course organisers also need to follow up with the client organizations on the kind of support that will be provided to the trainees to aid adoption of the course content within the institution. The client organizations need to follow up on the trainees' progress in implementing the knowledge received during the course.

The provision of feedback on course participants' action plans requires more attention. Some trainees during the course did not seem to understand what was required of them in writing these individual plans, which may mean a person achieves little because their action plan is poorly thought out.

Challenges faced during the mid-career course included the shortage of time, which led to us skimming through some modules in order to keep up with the schedule. There were instances where some course participants did not fully understand certain concepts because of the rush in completing the topics. Trainees were not given sufficient opportunity to share their feedback or to discuss among themselves to see how they were progressing, even though we were in the same location for the training. This led to slow progress, with trainees not encouraged to ask for assistance where needed.

There is a need to come up with innovative approaches, such as virtual communication between course participants. In addition, it was difficult to report on new practices because of the limited knowledge and skills of trainees on documentation.



## 3 GO4IT university cases

Innovation platform members in pea field of Esther Mbaire (2nd left) | Photo: Francis Muchiri





# Kenya: Egerton University

## Fostering change: experiences of innovation systems at Egerton University

BY CHRISTOPHER ONYANGO, BOCKLINE OMEDO BEBE AND JOHN MOMANYI MIRONGA

*“You must be the change you want to see in the world” (Mahatma Gandhi). Egerton University realized that to come down from its academic ‘ivory tower’ and make a difference in the real world, it had to start by changing the mindset and attitudes of its staff, management and the organization as a whole. Implementation of the GO4IT project provided us with the opportunity to start this change process.*

### The university

Egerton University is a leading institute for agricultural education and training, offering several undergraduate and postgraduate programmes from its campus in Njoro, Kenya. It has experienced staff in diverse fields including agriculture, education, medicine, engineering, environmental sciences and business studies. However, only a few of the faculty staff have been exposed to agricultural innovation concepts, which have therefore not informed or promoted change in the working of the university. There has been little cooperation among different faculty staff for developing and implementing university programmes. The few faculty staff who do have experience of innovation systems have, equally, had little interaction with their colleagues, either within their departments or across the university as a whole.

Although the university routinely engaged external stakeholders in curriculum review, this was often restricted to soliciting views on a curriculum already developed by the subject specialists within departments and faculties. This process did not include true engagement of external stakeholders in identification of their requirements as potential future employers of graduates, in order to inform curriculum developers of which competencies employers required. These were the main conclusions of the first activity of this project – ‘Labour market needs and curriculum assessments’ – which drew on the input of employers of Egerton graduates (see Box 5).

In addition, the implementation of the curriculum did not take into consideration the needs of society as a whole. The university continued to operate within an ‘ivory tower’, without engaging with the ‘real life outside its gates’. Consequently Egerton has continued to produce elitist graduates who are unable to spur change in society and who face low employability because potential employers complain that they are unable to meet their job requirements, meaning the graduate is not able to ‘hit the ground running’. Few venture into self-employment.

A number of departments (Human Nutrition; Environmental Science; Agriculture and Community Studies; Agriculture Education and Extension; Animal Sciences; Dairy and Food Science Technology; and Crops, Horticulture and Soils) have programmes which require that lecturers work with different stakeholders and engage students in community outreach activities or practical assignments in society. The challenge in these outreach activities is that they follow a conventional approach, according to which students take 'solutions' to the communities, without engaging them, or any other stakeholder, in this process.

**BOX 5: MARKED COMPETENCY CHANGES EXPRESSED BY GRADUATES  
AT EGERTON UNIVERSITY AFTER GO4IT TRAINING:**

- **Conducting partnerships and multi-stakeholder analysis**
- **Better understanding of stakeholders' needs**
- **Working with stakeholders to prioritize entry points for innovation**
- **Communicating effectively in a multi-stakeholder environment**
- **Engaging in active learning and change processes with stakeholders**
- **Managing conflict resolution**
- **Monitoring and evaluating projects and innovation**

Importantly, the way curricula have been delivered also left room for improvement. Both undergraduate and postgraduate lectures were delivered through traditional teaching methods where the lecturer controls the instructional process, the same content is delivered to the entire class and the lecturer tends to emphasize factual knowledge. This conventional approach has limited impact on the learning of the student, particularly as passive learning does not encourage student-lecturer interaction.

Egerton's participation in the GO4IT project meant that university management had to understand the project, its implementation process and its objectives in enabling the university to produce graduates with knowledge, skills and attitudes that can spur change in society. This understanding was essential to ensure the support needed for effective change at individual, organizational and institutional levels. The university management was receptive to the idea and extended support to the project, including additional funding, office space and admin staff. The management also attended the opening of all training sessions, which helped senior management to understand and support the implementation of innovation systems thinking.

With the support of the management, we were able to assemble the right mix of people within the university to initiate the change process. A team drawn from the faculties of Agriculture, Education and Community Studies, Health Sciences, and Environment and Resource Development sprang into action. The team worked well together and found strength in each other and

common ground. The members all looked for ways to introduce change, and were excited at the opportunity provided by the GO4IT project (see Box 6).

#### BOX 6: HOW THE GO4IT PROJECT WAS IMPLEMENTED AT EGERTON UNIVERSITY

**Sensitization** – university management was informed about the project, its implementation process and its objectives. The project was then launched in a meeting at the university attended by potential employers, NGOs and government officials working in the agricultural sector.

**Training of trainers** – 25 faculty staff from diverse disciplines were trained in three phases. A first training was held in Malawi; the second and third trainings were at Egerton University.

**Gap analysis** – this was a desktop study of the undergraduate curriculum and interviews with the heads of departments to identify competence gaps.

**Needs assessment** – this was carried out with the participation of employers and farmers about agricultural graduates in the labour market.

**Identification of organizations** – selected organizations were visited and briefed about the project, its implementation process and its objectives.

**Identification of course participants** – the employers were asked to identify and nominate their employees for training. They were asked to commit themselves to allowing the trainees to complete the course. The trainees were drawn from the Ministries of Agriculture and Livestock, Kenya Agricultural Research Institute (KARI), Baraka Institute of Agriculture, Kenya Sugar Board and Farming Systems Kenya (NGO).

**Implementation of the training** – there were three cohorts of course participants. The first cohort consisted of 25 mid-career professionals who went through three cycles of training (14 men and 11 women; 21 completed the course). The first cycle of training was for block 1 and 2 combined, followed by an interval during which the trainees identified entry points for change and also prepared and initiated an innovation process. The second cycle covered the contents of block 3 and was also followed by an interval, during which the trainees were required to maintain the innovation process.

The last cycle covered block 4 and was once more followed by an interval assignment, during which the trainees were required to engage in long-term partnerships for continuing the work. The second cohort was a group of 10 PhD students (two male and eight female) in Agricultural and Rural Innovation and Agriculture and Community Development Studies. The third cohort was made up of 23 Masters students (15 female and 8 male) who had just finished their courses in different faculties of the university. Both the Masters and PhD cohorts were trained for three weeks but did not take part in the field-based interval assignments.

**Supervision of mid-career professionals** – was carried out during every block interval and involved discussions with supervisors and other organizations/individuals involved in the practical work of the students; in addition to continuous feedback on their progress through email and telephone conversations. The information collected through these activities was always reviewed at the beginning of the next training session.

**De-briefing of the employers** – was carried out by the trainers to inform the employers on how the whole process was managed and completed. They had a chance to listen to presentations of case studies by their participating employees who had supervised the implementation of innovation actions. Challenges faced and opportunities encountered by the trainees were discussed during these meetings. This was done jointly by the trainers and the supervisors in the fields. Three such supervisions were carried out.

**Writeshop** – a national writeshop was held to enable the 15 students that managed to write up their stories on time to further document their case studies. Employers also attended part of the meeting and were requested to provide feedback on how the innovation process had been facilitated. Two cases, one from the public sector and another from the private sector, were picked to represent the Kenyan experience in the regional writeshop in Lilongwe, Malawi.



**Supervisory visit to GO4IT course participant** | Photo: Simon N. Mutonga

Implementation of the GO4IT project has led to changes at individual, organizational and institutional levels. Faculty staff improved their abilities to engage students in interactive learning, which is contributing to enhanced creativity and critical thinking among students. Faculty staff now increasingly play the role of facilitators and mentors, and use case studies to encourage problem solving in students. Many students have appreciated this approach, especially the postgraduates. Another change is evident in partnerships with stakeholders. Faculty staff are able to initiate and maintain partnerships with farmers, farmer organizations, public and private extension and research organizations, and processors, as well as other value chain actors. The change has extended to more interaction between faculty staff in the university, through e-learning trainings, pedagogical workshops, informal meetings and postgraduate collaborative supervision.

The organizational changes have been supported by the university management as part of a change in the process of engaging with the outside world. Inter-faculty interaction has increased in the development of new programmes. Several departments in the faculties of Agriculture, Education and Community Studies, and Environment and Resource Development partnered to develop a new postgraduate Diploma programme on 'Innovation and Integrated Research for Agricultural Development'. Both MSc and PhD students were offered the same content contained in the GO4IT course modules undertaken by the mid-career professionals. This training has influenced graduates in how they conceptualize their research projects, who now embrace action research and work closely with stakeholders to solve practical problems. The decision to offer GO4IT to all these groups of participants was informed by the professional competency gaps in agricultural training, which were identified from needs assessments with employers, agricultural field staff and farmers.

Institutional changes are also evident, with some departments having changed their procedures of engaging stakeholders in curriculum review. With this new approach, the university engages private partners in assessing students during their internship periods; previously, only lecturers were the assessors. The employers recognized the value of the GO4IT mid-career course and agreed to grant study leave to their employees for further studies. In particular, the Ministries of Agriculture and Livestock have recognized GO4IT as an approved course for their staff, who can now be given study leave for the training. The value of this mid-career course has been embraced by both public and private stakeholders whose employees participated in the training, by expressing willingness to pay for the GO4IT course when offered. This represents an important change from the previous relationships and collaboration with external partners.

It is worth noting that during the stakeholder needs assessment, a good relationship was built with a large variety of employers of Egerton graduates. Teaching staff gained sufficient knowledge and confidence on the mid-career course to effectively market the course. Staff talked intensively about the course with training departments of, for example, the Ministry of Agriculture, KARI, and the Kenya Sugar Board. The confidence of the Ministry of Agriculture, Livestock and Fisheries Development was gained, expressed by the fact that it recommended the course for its staff even before the first course was complete! They also organized sessions for mid-career course participants to highlight the results of the action research, as well as the results of the GO4IT course itself, to employers and farmers.

During the GO4IT mid-career course, a total of 25 mid-career professionals participated and carried out action research in their place of work. The field work was supervised by university staff together with their employers. The established relations also allowed for the involvement of student interns from the regular curriculum courses, and in fact led to a network of possible internship options.

**Interaction with farmers' group during supervisory visit | Photo: Elizabeth Kamau-Mbuthia**



At the end of the course, employers were consulted on the performance of the trainees. Some key issues arising from these consultations can be found in Box 7.

#### BOX 7: FEEDBACK FROM EMPLOYERS ON PERFORMANCE OF THE COURSE PARTICIPANTS

**What the organization did before their staff attended the mid-career course:**

- Simply creating awareness about available research information. Not much to do with innovation but only trying to solve problems related to productivity with minimal success.
- Staff had serious limitations with respect to supporting multi-stakeholder involvement.

**The change observed in the course participants:**

- Trainees became more self-confident, more innovative and skilled, and responsive to clients.
- Able to create linkages, and document and transfer information faster.
- Planning has also been improved, with

emphasis on punctuality, sticking to budgets, and efficient use of resources.

**What has your organization learned:**

- Organizations have recognized that a small innovation can have huge benefits/results with minimal financial inputs from stakeholders.
- Organizations have become more receptive to farmers' needs and have included visits to farmers.
- Organizations have become more results oriented and have enriched service delivery.
- Organizations have seen improved stakeholder relations, trust and definition of roles, leading to efficient delivery of services.

Employers also suggested that the success of the GO4IT course should form the basis for collaboration between the University and other stakeholders for more training, to include more people at different levels. They also suggested introducing, where possible, innovation system modules in the undergraduate curriculum.

### Hurdles and lessons

There were some hurdles to implementing the GO4IT project. It was critically important to secure administrative support from the university's senior management, which was initially not an easy task, leading to delay in the project start-up. It was also challenging to convince employers and public and private sector players to buy into the course's content, approach and values. Funding was insufficient for full implementation of the project activities as initially set out, so the university administration was approached to top this up. The trainers and trainees also had to accept lower allowances than the rates offered by their respective organizations. Finally, the trainees often had to mobilize funds beyond those given by the project or their employers, to implement activities for their innovation projects. This was because the projects undertaken by the trainees had not been budgeted for by their employers.

### Lessons and recommendations for the way forward

In view of the lessons learnt from the GO4IT project, a number of concrete suggestions emerged on how to make sure the outcomes became integrated into the way the university worked. These particularly related to marketing the GO4IT mid-career course, strengthening partnerships created and mainstreaming elements of agricultural innovation in university curricula.



In order to market the course, Egerton aims to engage large employers in the agricultural sector, such as the Ministry of Agriculture, Kenya Sugar Board, Kenya Forestry Services and private sector players, for future editions of the course. This will be reinforced with advertisements through the university website, personal contacts, and the presentation of successful cases. The aim is to offer the mid-career course through a competitive process to targeted clients in the public and private sector, but also to restructure the course to respond to the specific needs of these different clients. This could also mean that specific modules will be based on the needs of individual clients. The costs of the blocks and fieldwork will be determined and options for full payment, as well as cost-sharing with employers will be pursued. One of these options is the organization of the training blocks on employers' sites, including the Agriculture Training Centres. Egerton University aims to further strengthen the mid-career course.

In response to demand, a plan to establish a Centre of Excellence in agricultural innovation within the university has been developed. This Centre will host a variety of short courses – potentially using the existing GO4IT blocks as a starting point – on issues such as facilitation and communication. These courses will target mid-career professionals in both the public and private sector.

At the same time, there is a need to strengthen lecturers involved in project implementation, which will lead to a larger core team to champion and drive the agenda of agricultural innovation systems within and outside the university. Learning from practical experience will, apart from involvement with employers, come from the involvement of GO4IT alumni in guest lectures and the co-facilitation of fieldwork for students and new mid-career course participants.

The development and strengthening of partnerships is another follow-up strategy. A number of partnerships were already established during the GO4IT implementation process and other projects. Strengthened partnerships will provide more students with the opportunity to attend courses. In addition, we believe these partners will give university lecturers an opportunity to work directly with the local communities to better understand their realities. We also want to continue our current international and regional partnerships with KIT, LUANAR, Makerere University and RUFORUM, to share experiences and join forces where possible (for example, in the development of a curriculum for a Masters programme on Agricultural Innovation).

The GO4IT course modules developed and used, and the practical lessons learnt, are already being used to mainstream elements of agricultural innovation systems within university curricula. Elements of the GO4IT course are also being used in extension courses and will be used in other courses provided by the Faculty of Agriculture. The dean has also requested the mobilization of resources to train lecturers not yet trained in agricultural innovation systems. Lessons from the mid-career course can be incorporated in courses offered to staff each year by the Faculty of Education and Community Studies. Elements of interest include mentorship, leadership, conflict resolution and negotiation, as well as facilitation skills. Other outcomes foreseen are the upgrading of the postgraduate Diploma on 'Innovation and Integrated Research for Agricultural Development' into a Masters, as well as the launch of a two-week certificate course on Environmental Innovation.

The project also generated several case studies with relevance for teaching agricultural innovation systems in various courses; resources are to be mobilized for publication of these case studies.

# Malawi: LUANAR

## Changing the way a university teaches and acts beyond its walls: LUANAR's experience

BY JAMES SITIMA AND JOHN KAZEMBE

*The pressure placed on universities to meet increasing demand by employers for high quality and relevant graduates calls for action to make higher education more relevant and produce students better able to understand multiple perspectives found in the field. Innovation systems thinking has helped us to do that.*

### Background

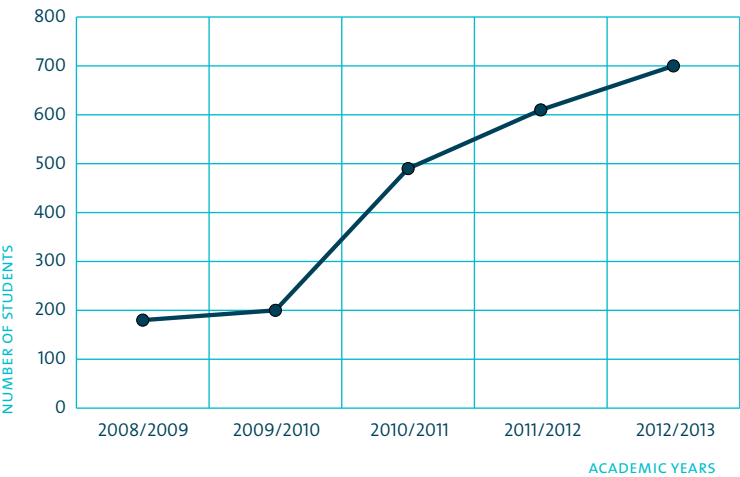
The agricultural sector in Malawi has remained the hub for economic growth, promoting food security and rural development. However, despite many innovative efforts such as rural growth centres and the 'One Village One Product' movement aimed at promoting rural livelihoods, the advancement of agricultural innovation systems is relatively new. However, agricultural innovation systems have become more appealing than ever before because: i) it is drawing the attention of agricultural actors to work together for improvement and growth; ii) it is underscoring the imperative need for interaction of various actors; and iii) the emphasis on the outcomes of technology and knowledge generation and adoption is shifting away from the predominant approach of strengthening research systems and their outputs.

Local writeshop, Malawi | Photo: Fred Kalengamaliro



LUANAR has been operating as a constituent college of the University of Malawi, offering agriculture-related courses to supply the national demand for extension skills. As an academic institution, the university's mandate is primarily to teach, conduct research, provide consultancies and offer impact-oriented outreach activities to local farmers to promote food security in the country. However, the quality and calibre of the extension agents produced has not satisfied demand for agricultural expertise at managerial level for policy and logistics. This necessitated an introduction of Bachelor of Science Degree programmes in agriculture in 1975 based on stakeholder aspirations. These developments, however, were characterized by inadequately qualified staff, a single disciplinary approach and a curriculum with limited scope to address critical emerging issues such as agricultural innovations. The situation remained the same until early 2000. The college expanded with two different faculties including Environmental Science and Development Studies. The college has since matured into a fully-fledged university and consequently, the student population has grown at a faster rate than the university can handle, with demands placed on space and quality learning (Figure 5).

**FIGURE 5: STUDENT INTAKE (NUMBER OF STUDENTS PER ACADEMIC YEAR) IN LUANAR OVER THE PAST FIVE ACADEMIC YEARS INDICATING A DRASTIC INCREASE IN STUDENT INTAKE IN THE LAST TWO ACADEMIC YEARS**



Due to large class sizes, coupled with limited teaching skills among lecturers, the mode of course delivery has been based on the traditional lecture approach, creating limited lecturer-student interactions. Figure 5 signals an increasing pressure on LUANAR to find ways to adapt rapidly to the growing demand for higher education. Increasing demands for student admissions means that LUANAR needs to demonstrate to stakeholders that it is enhancing institutional efficiency and effectiveness. Pivotal to a university's success is the quality and relevance of its courses. LUANAR employs the services of about 150 teaching staff and over 300 clerical and technical staff. However, because of the difficulties involved in ensuring the match between student population growth and infrastructure development, there is a growing concern about quality of teaching programmes and their delivery. With a lack of a defined student-

teacher ratio, the college experienced variations in class sizes ranging from 1 to 700. Large classes and use of a lecture teaching method – which had limited learner interaction – posed a threat to the quality of instructional delivery.

## Current state of university innovation

### *The level of understanding on agricultural innovation*

Before inception of the mid-career course, the concept of agricultural innovation was limited to development of local technologies. University departments were unlikely to collaborate with each other in teaching or research. Innovations were understood as only linked to developments in fields such as biotechnology, which affected the way staff delivered their lessons. For instance, in the Department of Animal Science some activities reflected concepts of innovation like the multi-stakeholder process for the construction of modern animal kraals.

### Curriculum development processes

The process of developing new and/or reviewing existing courses in the university involves identifying stakeholder training needs, development of content and stakeholder validation processes. However, course experts have a strong influence on the nature of the content, making the final programmes expert-centred. Moreover, the curriculum review conducted prior to the GO4IT mid-career course revealed that most programmes lacked the fundamentals of innovation system thinking, although some elements existed in selected courses. One course with elements of agricultural innovation is the Agribusiness Programme of the Faculty of Development Studies. Even courses that are practical in nature have little time allocated for students to put course content into practice. In other words, more time is devoted to learning theory rather than practical work.

Further, at the time of commencing the mid-career course, many lecturers had limited knowledge about agricultural innovation systems. While each programme in the faculties are structured around student learning objectives, lecturers are overwhelmed by inadequate teaching and learning materials against a background of insufficient training skills and increasing student numbers. In addition, at LUANAR it is a programme requirement that each student undergoes industrial attachment for a month, giving extra opportunity for students to practice what they learn in class as they join professionals in various industries. However, the industrial attachment has maintained a business-as-usual approach in which the students make no attempt to implement new initiatives for change in the host organization.

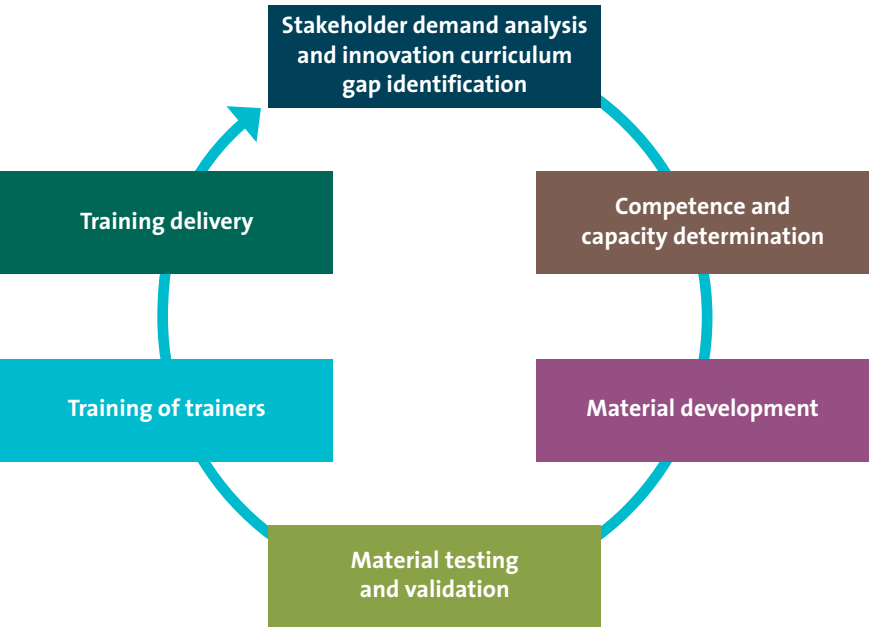
Innovation demands cross disciplinary and multi-level understanding and practice, not reflected in academic management.

## The mid-career course - implementation processes

The mid-career course underwent sequential processes in its planning and development starting with stakeholder analysis through to actual course delivery (Figure 6).

**FIGURE 6: MODEL OF GO4IT MID-CAREER COURSE DEVELOPMENT AND DELIVERY**

Features of the process include stakeholder demand analysis, culminating with the delivery of the course to frontline staff.



### Stakeholder demand analysis and curriculum stocktaking

The mid-career course began with two complementary studies: (1) to determine the demand of stakeholders for competencies and capacities in fostering innovation; and (2) to identify critical curriculum gaps. The two studies were participatory, engaging key stakeholders including current students and lecturers in the university. Results of the studies were then shared college-wide for input.

### Development of training material

The development of training materials was spearheaded by KIT in collaboration with LUANAR as well as Egerton and Makerere universities. In each university the teams had an opportunity to consider and reflect on the concept of the course based on study findings resulting in frequent discussions on various topics. The process provided sufficient feedback for the teams working on the mid-career course and enabled a continual cycle of reviewing and refining the content. Subsequently, the training materials were tested and validated in a joint workshop where all teams from the three universities were brought together to provide necessary technical input to the course content. After course validation, university lecturers who would be responsible for course delivery underwent capacity building. This was carried out through two regional consecutive training of trainers' workshops and local training of facilitators. At LUANAR a total of 16 male and two female lecturers took part in a training of trainers' course

to be able to facilitate the GO4IT course and build capacity more generally of LUANAR staff. The course was delivered by each team in their respective universities.

#### BOX 8: HOW THE GO4IT MID-CAREER COURSE WAS IMPLEMENTED AT LUANAR

**Identification of organizations** – these were mainly government departments, private sector organizations and NGOs whose activities focussed and/or related to agricultural and rural development. Examples include the Ministry of Agriculture, tea research stations, Universal Concern and Baka Research Station. Here, priority was put on those that had larger coverage and were perceived to be making an impact among the communities they serve.

**Identification of course participants** – this was done by immediate employers who nominated trainees based on criteria that the college developed. The idea was to encourage employers to own the process and support the trainees.

**Redesigning of the training blocks into cycles** – the four blocks were compressed into three cycles: Cycle 1 (Block 1), Cycle 2 (Block 2 and 3), and Cycle 3 (Block 4). Each cycle took one week to complete. Availability of time, team members, trainees and financial resources were the main factors in determining the duration.

**One cohort** – The first cohort had 17 course participants (11 male and six female), all from various organizations (largely NGOs). They underwent Cycle 1 residential training during October 2011 at LUANAR, Cycle 2 in June 2012 at Raza Hotel in Lilongwe and

Cycle 3 in June 2013 at Mesa Lodge in Lilongwe. At the end of the course, 11 trainees remained. Some withdrew due to further studies and change of employment where new employers could not support them. The group was made up mainly of frontline staff with a Diploma in Agriculture. Very few were postgraduate students (MSc and BSc students) enrolled or employed at LUANAR and in NGOs. A second cohort will start in the second half of 2013.

**Follow-up** – At the end of Cycle 1, each trainee developed a tentative action/work plan of how they intended to integrate the concepts in their organisation/work to over 100 members. All trainees were followed up throughout the mid-career course to find out the extent to which each of them had planted a GO4IT ‘seed’ in their work activities. From the follow-up, we discovered that employer organizations had incorporated the GO4IT lessons in their work plan.

**In-country writeshop** – from the follow-up exercise all the course participants had done something at different levels. In fact they had been sending regular reports upon completion of their field assignments as provided in the training manuals. Those that had done more were selected to participate in the writeshop. It is from the 11 cases that three cases studies for the regional project writeshop were selected.

### Course delivery modes

In line with the initial course design, the mid-career course adopted an interactive and experiential learning approach that emphasized the need for students to fully understand what they were being taught. The trainers were lecturers from various academic departments who were first acquainted with group facilitation methods and techniques. The development of course material, trainee selection, and mode of course delivery were all based on the assumption that learning occurs best through interactive discourse and when it directly relates to the learner’s needs, realities and experiences. Course participants learn better by choosing what they want to learn, and by doing rather than merely listening to presentations. Consequently, learning was enhanced when knowledge and skills were practiced during the workshops and in their workplaces after each block training workshop (Box 8).





Training field trip | Photo: James Sitima

In each face-to-face training session, a variety of training methods included presentations, interactive plenary sessions, brain-storming sessions and various group work exercises. Again, trainers were requested to make appropriate use of the trainees' experience, building on their knowledge and opinions. An internet-based exchange was used for the assignments to be carried out in the intervals between the workshops. Its implementation depended on the capacities and infrastructure available. Where the internet-based exchange was used it structured the sharing of experiences, putting knowledge into practice and the provision of feedback by fellow course participants.

## Results

The trainers have learned course development and facilitation skills which have brought various changes at different levels. Discussed here are only those proximate results which have been observed so far.

At the time of introduction, the idea of agricultural innovation was generally new to most academic departments. As of today, some departments and faculties have used the findings of the baseline studies to improve their training and staff development portfolios to include aspects of innovation facilitation. For example, the Natural Resources Department in the Faculty of Environmental Sciences has developed a unique course on Natural Resources and Environmental Innovation Systems; the Agriculture Education Department has developed a BSc in Agricultural

Innovation and, through a World Bank initiative, the college has proposed the establishment of a Diploma in Agricultural Innovation to be offered through Open Distance Learning. These courses and programmes aim to equip students with knowledge and skills in solving agricultural, environmental and natural resource management challenges through innovation.

The paradigm of agricultural innovation systems has been new to most of the trainers and trainees. The initial training of trainers' course empowered individual lecturers with skills and knowledge in both the content and delivery of the material. Some lecturers have adapted selected methods of course delivery to the classroom. It is now common to find students working in groups on various assignments.

At the university level, a team of researchers led by one of the members of the training of trainers' course has been involved in the facilitation of the Lilongwe River Rehabilitation project, working in collaboration with the Lilongwe Water Board (LWB). The role of the university was to broker partnership between and among the LWB, farmers, the Department of Land Resource Conservation and other interested stakeholders. The approaches used in bringing the various stakeholders together were drawn from the GO4IT mid-career course with emphasis on the rehabilitation work as an environmental innovation platform (see Box 9).

One of the most important and positive outcomes of the mid-career course is the creation of a new and useful dialogue that brought together different university departments in a forum of experiential learning and diversity. Lastly, engaging course participants with hands-on practical innovation projects enhanced the understanding of the theoretical content of the course more than if the course was purely class-based. The opening up of distance learning by LUANAR may also make use of the experiences drawn from the mid-career course.

The participation of staff members in the training of trainers' course and facilitation sessions enabled departments to integrate issues of innovation in their curricula reviews that began shortly after the commencement of the mid-career course. The college curricula reviews were not initiated by the GO4IT project, but college management encouraged lecturers to integrate GO4IT mid-career course content into the curricula.

#### **BOX 9: LUANAR'S ROLE IN THE REHABILITATION OF THE LILONGWE RIVER WAS TO:**

- Develop the individual and organizational capacities of farmers cultivating along the river banks to be able to deal with the dynamic challenges and changes of the catchment management.
- Facilitate a process of self-organization and community emancipation to enable people to better articulate and represent their needs for agricultural and social services.
- Develop and spread technical and social innovation in a process of joint learning, which builds on the experience and local knowledge of rural people who have agriculture as a common foundation, and then spread to other fields of catchment management.
- Link rural people and their local committees to external service providers, input and output markets and sources of innovation in order to create a functional innovation system where the demand side and the service supply are both well developed.

## Hurdles

A characteristic feature of the partnership established to implement the GO4IT project at LUANAR is that lecturers had varied interests. Implementation of the mid-career course was complicated in a number of ways; such as creating effective management awareness, coping with some members' resistance to change, and dealing with limited numbers of lecturers initially. It took almost a year of sensitization to get university staff on board. The most intricate challenge, however, was the coordination of various activities as the team members had displayed divergent interests and consequently different levels of commitment, for example, in field supervision work and development of relationships with employers.

At an individual level, commitment to responsibilities was generally frustrating. At times assigning roles and responsibilities was done to simply maintain the partnership between departmental representatives even when it was apparent some members would deliver below team expectations. Similarly, some members felt that coordination of the team was not satisfactory, which equally affected the team performance. It can then be hypothesized that quality of course delivery could have been negatively affected by these two factors.

## Lessons

The complexity of ascertaining and determining quality and sustainability of degree programmes requires input from a range of stakeholders, notably employers of graduates, to embrace all their demands and aspirations. A distinctive feature of the GO4IT mid-career course was, on one hand, the independency of the processes involved in development of the training modules and, on the other hand, the constant engagement with relevant stakeholders. To begin with, respective university project teams conducted the stakeholder demand analysis through a consultative process with continuing students, organizations in research and development (R&D) and even university management. The consultation process provided the opportunity of capturing relevance and ensuring sustainability. KIT involved all the universities in the development processes of the training modules, thereby avoiding individual lecturers providing expert-based and subject-specific content. The approach of course development however, besides being cyclic, will need to evolve to respond to the changing needs and aspirations of R&D organizations.

The issues of quality and relevance have been addressed to a fairly detailed extent. However, in terms of financial viability, the mid-career course was designed in a way that would allow it to be self-sustaining, although initially the course implementation received technical support from KIT and RUFORUM and financial support from the European Union. The training of trainers' course was an important strategy for sustainability which has equipped lecturers with competences to continue offering the course in the event that the project is phased out. However, little is known as to whether prospective students could afford to pay commercial school fees in the absence of third-party financial support.

The course was split into four blocks, with learning intervals in places of work interspersed between each block. This caused little disruption to the work commitments of the course participants, enabling them to participate in the course, and put the theory they were learning

during each block into practice. LUANAR could adopt this approach to upscale its programme on widening access to higher education which the university is currently pursuing.

## Lessons and recommendations for the way forward

There is no question about the robustness of the GO4IT project in terms of approach to building capacity of universities, to better enable them to develop competencies in agricultural innovations among students. The GO4IT mid-career course has been uniquely implemented, rendering itself a shining example of a way to improve the quality and relevance of university education. However, a number of areas could be improved upon in order to derive greater results. This includes modifying the GO4IT curricula to create a BSc programme. This could be developed if the second cohort of training enabled trainees to provide more feedback on the course. The second cohort met with financial challenges but once the funding is resolved the training will be conducted.

Based on the GO4IT processes the implementation of the mid-career course and the results realized, the following are some major points of action for wider application:

- LUANAR should develop and adopt systems for regular monitoring and periodic evaluation by employers and other stakeholders of the impact of existing curricula and their subsequent changes in terms of innovation and systems thinking;
- LUANAR should promote institutional collaboration and linkages with other universities (in country or regionally) to out scale innovation systems thinking and share practical lessons from the mid-career course;
- LUANAR should develop the mid-career course to the level of a BSc and then offer it as an Open Distant Learning programme;
- The team of mid-career course staff should extend the training to both postgraduate students (MSc and PhD) and other members of staff to build capacity and further help institutionalize innovation systems;
- The mid-career course team should document the rest of the case studies and publish them for future use in upcoming innovation programmes.

# Uganda: Makerere University

## Building capacities on agricultural innovation within a university context: the case of Makerere University

BY PROSSY ISUBIKALU, FLORENCE BIRUNGI KYAZZE, JACOB GODFREY AGEA, BERNARD BONTON OBAA AND GABRIEL KARUBANGA

*The GO4IT project fitted well with Makerere University's efforts to increase its relevance and visibility in the development arena. The programme has planted seeds of innovation systems thinking among university staff, students and practitioners. Outcomes have included greater interaction between staff and students and significant changes in the curriculum.*

### Introduction

The Department of Agricultural Extension and Innovation Studies (DEIS) provides training on social issues for students from all schools in the College of Agriculture and Environmental Sciences. Housed in the School of Agricultural Sciences, DEIS has the responsibility to improve the capacity of graduates and staff to effectively interact with communities, in order to facilitate the translation of technical agricultural information and technologies into solutions to farming problems.

DEIS aims to train dynamic graduates who are responsive to the needs of the public sector (such as national agricultural research and advisory bodies), as well as to the specific demands that arise from the private sector. In preparing professionals to serve as facilitators and leaders of community change processes, whether in public or private institutions, the department indirectly contributes to agricultural and rural development.

### Makerere University: situation before the GO4IT project

Challenges and emerging issues in demand-driven research and extension call for new skills among practitioners, and hence changes in both what is taught and the delivery style at institutions of learning. One of the most important skills is the integration of 'systems thinking' in university-level training and research activities. Makerere University, specifically the School of Agricultural Sciences, embraced the innovation systems concept before the start of the GO4IT project, as part of a university-wide effort to increase its relevance and visibility in the development arena.

These initiatives implemented before the project started (see Table 3), aimed at improving the impact of the university on communities (including employers), were largely informed by studies of graduates in the field. These studies (Mangheni et al., 2006; Makerere, 2006; Asimwe et al., 2001; Patel et al., 2001; Hawkins, 2010) all pointed to similar gaps in the competence of grad-



Professionals sharing experiences during a GO4IT course | Photo: Prossy Isubikalu

uates to support positive change in the livelihoods of communities. Employers too reported inadequacies in certain skills among graduates, notably: communication and facilitation skills; interpersonal and social skills; gender analysis; financial management; project planning and monitoring; agribusiness management and resource mobilization; organizational and management skills; team development; business and agricultural entrepreneurial skills; development and maintenance of public-private partnerships; and familiarity with recent changes in approaches to rural and agricultural development.

Recommendations that emerged from these studies included the following: strengthen engagement and inclusion of stakeholders in community development initiatives; mainstream gender in academic units; focus on social skills, to enhance communication and networking; mainstream innovation in the university; and develop new, market-responsive courses and programmes. In a nutshell, the university needed to think of new ways of doing things, to produce a different 'breed' of graduates that were responsive champions of change. Hence it embraced the GO4IT project.



**TABLE 3: RELEVANT INITIATIVES FOR INNOVATION SYSTEMS THINKING AT MAKERERE**

Initiative (projects/ programmes)	Major objective	Units that participated at the university	Partners	Outcomes of the initiative
<b>Innovations at Makerere Committee (i@mak.com) 2002-2007</b>	Build capacity (existing and future) of staff in decentralized or local government for effective and efficient service delivery.	Agriculture, Veterinary, Medicine, Science, Social Sciences, Technology.	Ministries of Education, Finance Planning and Economic Development, the Economic Policy Research Centre, Mbarara University, Gulu University, Uganda Martyrs University - Nkozi, local government (district level) and local communities.	Formalized, university-wide system of field placements.  Development of new programmes.  Enhanced capacity in local government, and scholarships.
<b>Personal Mastery (PMSS) 2003-2005</b>	Build competence of lecturers, and consequently the students, in the social skills required to meet current and emerging realities in the field.	Mainly targeted: Agriculture, Forestry and Veterinary. Education and Social Science also participated.	RUFORUM, Rockefeller Foundation and PICO	PMSS mainstreamed in the curriculum. Fully-fledged course under BARI and ARI. Components enhanced in topics and delivery of lectures.
<b>Integrated Agriculture for Rural Development (IA4RD) 2004-2006</b>	To strengthen and institutionalize the ability of Makerere University to provide capacity-enhancing opportunities in IAR4D for various stakeholders.	Agriculture, Forestry and Veterinary.	ICRA, NARO, PICO, local communities/farmers.	Researchers adopted participatory learning and action research concepts in their work.
<b>Bachelor of Agriculture and Rural Innovation (BARI) programme 2006-2007</b>	Produce a new cadre of graduates that champion and facilitate development processes and are responsive to current and emerging development issues.	Agriculture (all departments) and potential graduate employers.	NGOs (World Vision, VEDCO, Sasakawa Global 2000, Africa 2000 network), SAFE, NAADS and PMA, MAAIF, local government - district level, private sector (Agri-business Management Association - AMA), British Council.	Fully-fledged three year BARI programme that started in 2008. Three cohorts so far completed.
<b>Regional PhD programme in Agriculture and Rural Innovation (ARI) 2008-2011</b>	Creating a critical mass in promoting an innovation systems perspective in development.	Hosted by Department of Extension and Innovation studies; open to all agriculture-related fields.	Wageningen University, Montpellier SupAgro in France, Egerton University, Sokoine University.	Lecturers skilled in innovation system concept.  Fully-fledged PhD programme initiated, with second cohort to start in November 2013.
<b>The Canaan mindset model 2010</b>	Changing attitudes towards work, service and sacrifice.	Agriculture.	Office of the President, Korea International Cooperation Agency, MAAIF.	Course in 'mindset change' offered to third year students.
<b>Outreach 2012-2013</b>	Facilitate the creation of responsive university programmes (research, education and outreach) that deliver competent graduates to support farmers and small and medium enterprises to establish sustainable agro-food value chains.	Lecturers (25) selected across all departments within the School of Agricultural Sciences.	ICRA, Wageningen University, students in School of Agriculture, communities offering experience and field opportunities to the students and staff.	Lecturer delivery style improved by laying emphasis on experiential and interactive learning.  Experiences used to modify the recess term.

Many of these initiatives recognized that the university needed to add value to its current activities and to society as a whole. This implied doing things differently; including working closely with the private sector as employers, as well as with self-employed service providers. It also meant producing graduates that competed favourably in the changing job market, and produced technologies that helped solve current farming challenges.

Through these initiatives, Makerere took on the challenge by reshaping its training and education so as to produce responsive and enterprising graduates through a number of approaches. These included: changing the mindset of the staff and students; building a new vision of purpose and innovation; introducing new skills for training and research among academic staff; and curriculum review.

## Why GO4IT was needed

The emphasis of pre-GO4IT initiatives was largely on current students, especially in undergraduate programmes at the university, and less on the postgraduates and practitioners already in the field. But building a critical mass of innovation process facilitators required building the capacity of university staff, students and practitioners, such as mid-career professionals. The GO4IT project was timely in helping to fill the gap, as the project sought to equip mid-career and young professionals with the essential skills, knowledge and attitudes to contribute to and facilitate innovation processes for rural development.

Box 10 shows how the programme was implemented in Uganda.

## What changed at individual, organizational and institutional levels?

### Change at individual level

#### *Improvement in delivery methods by university lecturers*

Previously, DEIS lecturers used teacher-centred approaches. The GO4IT project strengthened our enthusiasm to adopt learner-centred approaches, to make the teaching-learning processes more interesting and relevant for both students and teachers. Use of audio-visual aids, including PowerPoint presentations and video clips, and flip charts in the delivery of lectures is now becoming a common practice. Other changes include: a significantly changed attitude among lecturers towards students; increased student-lecturer interaction; greater effort by students to attend class; proactive participation of students during lectures; and delivery of more structured lessons by lecturers.

Through the mid-career course participants, DEIS has also built a pool of guest speakers who bring a more practical, problem-oriented approach to teaching in a formal classroom environment. Problem-oriented teaching encourages a lot of discussion, reflection and feedback among students and their instructors, breaking the stereotyped belief that 'the teacher knows it all'.

#### *Increased student-lecturer interaction*

Student-lecturer interaction in most African universities is too limited to encourage effective learning. The GO4IT project has been very influential in building supportive relationships that enhance student-lecturer interaction. Small group discussion narrows the gap between them

## BOX 10: HOW THE GO4IT PROJECT WAS IMPLEMENTED AT MAKERERE

**Support from university management** – there was no difficulty in seeking support from the university's management which has always been supportive to projects and programmes that make it responsive, relevant and important in the development arena. The GO4IT project fitted well with the university's mission 'To provide innovative teaching, learning, research and services responsive to national and global needs'.

**Formation of a GO4IT project task committee** – for smooth implementation of project activities, the coordinator identified three people within the department to form a task committee. The task committee played a central role in planning and operationalizing what to do, when and how.

**Needs assessment** – a study was conducted to identify the desired skills prioritized by employers in agro-organisations. This helped to clarify the training needs of potential recruits, in order to make them more marketable, as well as performance and impact-oriented. The findings were shared with a wider audience for verification and potential topics or courses of study were identified. Elements of the needs assessment were included in the GO4IT curriculum and training materials.

**Preparation of GO4IT training materials** – by KIT and re-orienting the lecturers responsible for the four blocks of the GO4IT course, through training of trainers sessions.

**Identification of organizations** – these were mainly private sector and NGOs whose activities related to agricultural and rural development. Priority was put on those that had wider regional coverage and were perceived to be making a greater impact among the communities they serve. Four universities (Mukono, Gulu, Kyambogo, and Nkonzi) also participated.

**Identification of course participants** – this was carried out by the immediate bosses who nominated participants based on criteria developed by the

GO4IT team to ensure that the bosses 'owned' the process and would support their chosen trainees.

**Redesigning of the blocks into cycles** – the four training blocks were compressed into two cycles: Cycle 1 (Block 1 and 2) and Cycle 2 (Block 3 and 4). Each cycle took one week. Availability of time, team members, trainees and resources were the main reasons for the one week duration.

**Two cohorts** – for each cycle, course participants were split into two cohorts. Cohort I had 29 practitioners (largely NGO) who underwent residential training in January 2013 at the Centre for Continuing Agricultural Education. Cohort II had 26 participants – postgraduate students (PhD-ARI and MSc students) enrolled in the Department of Agricultural Extension and Innovation Studies. Training for cohort II was non-residential (Jan/Feb 2013, at the college). Cycle II was held in June-July 2013. Out of the 55 course participants, five were academic staff members from the different universities.

**Follow-up** – at the end of Cycle I, each trainee developed a tentative action/work plan of how they intend to integrate innovation concepts into their organization and their work. All trainees were followed up (mid-April 2013) to find out the extent to which each of them had planted a GO4IT 'seed' in their work activities. Priority was given to Cohort I because they were expected to practice or operationalize their plans. The students, on the other hand, were already back for lectures and had less time for operationalization. From the follow-up, we discovered that some lecturers (e.g. Kyambogo University), have already initiated integration of GO4IT concepts in their curriculum.

**In-country writeshop** – as revealed by the follow up exercise, all the trainees had done something at different levels. Those that had done more were selected to participate in the writeshop. From 10 cases, two were selected for the regional project writeshop.

and creates a supportive environment for sharing issues on level terms. The outputs of group discussions are often presented by the students using flip charts, PowerPoint presentations, posters or orally. These presentations have made the students more confident, motivated and open to change. Students no longer see their lecturers as unapproachable, but rather as responsive people who are there to guide and support them.

### *Improvement in teacher skills and attitudes towards teaching*

Instructors in the university tend to teach for the sake of it, with little passion. The GO4IT training of trainers course and subsequent training opportunities (e.g. pedagogy, mind-set change, personal mastery and soft skills), have enhanced the facilitation, communication, creativity, content and practical activities that students experience. There is now evidence of increased openness to learning and sharing of information among staff in DEIS.

## **Change in learning and practice at organizational level**

### *Changes in courses and programmes offered*

A number of new programmes and courses have been developed and modified as a result of earlier initiatives and the GO4IT project. The new programmes in DEIS are the three-year Bachelor of Agriculture and Rural Innovation and a four-year regional PhD programme in Agriculture and Rural Innovation. For first year students staying at the University Agricultural Research Institute in the recess term to acquire practical skills in different fields of agriculture, the programme has been modified to include more practical and interactive sessions. DEIS lecturers participating in the recess term training have enriched their lectures with some innovation process components, such as stakeholder analysis, partnership and communication.

### *Internship structure*

In its bid to improve the quality of agriculture graduates to meet the challenges of the world-of-work, the former Department of Agricultural Extension initiated a field attachment programme in 1993, under which students were posted to their home districts to engage farmers in participatory problem solving. This innovation was later taken up by other departments in the then Faculty of Agriculture, and in 2005 it spread through the entire university. The main challenge for field attachments has been adequate documentation of processes and outcomes by students, which has made it difficult to identify innovation-related case studies. Furthermore, while the concept of internship was adopted by the entire university, there are still issues of quality assurance that need to be addressed. These include the quality of reports, including the approaches used, responses of the communities and the implications. There is also need to identify other programmes in the university, such as those in social sciences, which could easily adopt GO4IT concepts in their internship programmes.

The internship experience at Makerere University shows that innovation at one academic unit can have a ripple effect across the entire system, if the results are visible. However, a platform is needed that engages all units within the university that use the innovation concept in their work. This will help to achieve a common understanding and identify areas of synergy, in order to ensure high quality in student placements. The GO4IT course is one such entry point, and could be used as a platform to improve the quality of internships, maximizing their contribution to the improvement of rural livelihoods.

### *Curriculum review in response to market demands*

Routine reviews made it possible to incorporate innovation concepts into the curriculum, in response to the rapidly changing extension environment in Uganda. In particular, DEIS reviewed the former Bachelor of Agricultural Extension and Education, replacing it in 2008 with the new Bachelor of Agricultural and Rural Innovation. This new programme emphasizes a systems approach to agricultural development. However, the major hurdle in integrating the innovation concept in curriculum review is the rigidity of university systems, including the bureaucracy of having a programme approved, and the reluctance of some academic staff to embrace change.

### *Supportive leadership at the department, school and college level*

The GO4IT project came at a time when the leadership structures of the university were changing from a faculty to a collegiate model. Faculties with similar courses and objectives merged or expanded to form semi-autonomous units called colleges. The current College of Agricultural and Environmental Sciences, for example, represents the merging of three former faculties of Agriculture, Forestry, and Geography and Environment. As a result, departments had to change their names, given that they had taken up staff from other departments and had therefore expanded. Since the people in charge of the process had prior knowledge of agricultural innovation and systems thinking, they used the opportunity to rebrand the departmental name as Extension and Innovation Studies. This was fertile ground for the GO4IT project.

The future success and sustainability of GO4IT project outcomes, however, lies in formalized delivery of its content at university level, which will be possible when DEIS takes charge of the Continuing Agricultural Extension Centre. The centre is, according to the collegiate structure, under the department, but has not yet been officially handed over by the college. The Centre's mission is to enhance the capacity of professionals and practitioners, and to disseminate knowledge and technologies for sustainable development of the agricultural and agro-industrial sectors. Within this mission, we hope to design and implement short and medium term 'GO4IT-like' demand-driven training programmes for public and private sector employees in agriculture-related organizations and businesses, as well as for farmers.

### *Teamwork and supportive spirit among members of DEIS*

Another factor that has enhanced the success of the GO4IT project in the department is the teamwork and supportive spirit among staff members. We often take advantage of different opinions within DEIS. In fact, the more a team member brings out divergent points of view that are thoughtfully presented, and supported with facts as well as opinions, the better for us. We communicate freely and we believe in a sense of responsibility. Above all, we have the unwritten rule that everyone must be tolerant and should respect different customs and individual preferences. We agreed to jointly modify the nine-month GO4IT course into a shorter one, with each member willing to play their part in this process. In addition, the GO4IT project leader has been very transparent and encouraged the full participation of all other GO4IT actors, despite the challenging work schedule in the department.

### *Challenge to prove relevance*

DEIS is increasingly being challenged to be more accountable to the public. As such, the department is looked upon to: develop, field test and disseminate curricula materials for agricultural

extension and educational organizations in the country; design and conduct programmatic research activities that foster agricultural development in Uganda; and inform policy processes for agricultural innovation in line with ministries and government departments. In this respect, the GO4IT project has helped to clarify an agricultural innovation systems perspective which addresses the demands of a multi-stakeholder, multi-actor and multi-functional work environment, such as the one we are working in now. People have a better understanding of what innovation systems are, when and why they are important, and how to form and manage them. In most of our research, development and training initiatives as a department, we endeavour to bring other relevant actors on board. We are currently building a database of potential partners from NGOs and the private sector.

## Change in learning and practice at institutional level

### *RUFORUM umbrella*

The implementation of the GO4IT project at Makerere University has been made possible by the university's membership in RUFORUM. Our membership did not only facilitate the development of the GO4IT proposal and its implementation but also enhanced collaboration with GO4IT partner institutions, such as KIT, and other participating universities (Egerton and LUANAR).

The personal contacts developed led to other collaborative research projects, such as the community action research project, which brought Makerere and Egerton universities together. GO4IT D-groups (an e-based group communication tool) have also facilitated information sharing and learning.

Group picture GO4IT course in Makerere | Photo: Prossy Isubikalu





However, the participating universities did not fully achieve what was described in the GO4IT project proposal. For example, apart from training of trainers courses, there was no exchange of lecturers among the partner universities, in order to share their experiences. A key take-home message from the interaction with RUFORUM is that there is always a need for more flexibility and innovation by project implementers. In the case of the GO4IT project, DEIS had to reorganize the modules and sequence them differently, in order to complete the training in a shorter period and meet the project timeline.

### *Memoranda of understanding with local government*

The GO4IT project has been relatively easy to implement at district level because of the already good working relationships between the university and local governments. Prior to the GO4IT project, the university implemented the Innovations at Makerere University Project (I@Mak.com), which sought to strengthen the government's decentralization policy by building the capacities of local government workers. The then Department of Agricultural Extension and Education signed a Memorandum of Understanding with local governments for cooperative training of students. Under the arrangement, the local governments would provide study leave to mid-career students and also host them for field attachment. The advent of agricultural innovations and systems thinking was therefore only deepened by the GO4IT course. However, there is need to continue engaging local government partners in order to achieve GO4IT project sustainability.

### *Good policy environment*

Agricultural development in Uganda has undergone several policy shifts during the last decade, the most significant being the transition from the paternalistic, public extension system to private, farmer-led, and demand-driven extension. While discourse on the subject focused on the weaknesses of top-down, public extension, in Uganda, a National Agricultural Advisory Services (NAADS) was created in 2001 as a farmer-owned, decentralized extension approach with the vision of increasing farmers' access to information, knowledge and technology. This paradigm shift in service delivery posed several challenges to agriculture graduates and called for new competencies, including critical thinking in agricultural innovation systems. The GO4IT project has therefore helped to build the capacities of academic DEIS staff to effectively function in a multi-stakeholder environment involving public and private sectors, as well as farmers. It has also helped to deepen staff understanding of key innovation competencies, such as communication and facilitation skills, multi-stakeholder partnerships, and agricultural value chains, among others.

### *Interaction with PhD students*

Continuous dialogue with our ARI PhD students has provided fertile ground for national policy engagement. Currently these students – including two Members of Parliament – are pushing for the innovation systems approach to be mainstreamed into NAADS and education policies. The MPs plan to sensitize their fellow policymakers towards innovation systems for public (and private) service delivery, and highlight the priorities for government budget allocation.

## Lessons and recommendations for the way forward

We plan to scale out the GO4IT project results beyond the current members of the project team, so that all academic staff in the department are on the same page in conceptualizing innovations and systems thinking in agricultural development. We also plan to scale out the GO4IT innovation systems thinking to the wider Makerere University community and to stakeholders from other universities, such as Kyambogo and Uganda Christian University, through a series of seminars.

Building on the GO4IT project, DEIS is in the initial stages of developing a new Masters' programme (MARI) to bridge the gap between BARI and ARI. Courses to be offered under the proposed Masters have already been identified, and include around 70% of the GO4IT course content. Our future plan is to customize the GO4IT mid-career course for in-service training programmes for public and private sector employees in agriculture-related organizations and businesses, as well as farmers. The department proposes to deliver these customized, demand-driven training programmes as short courses at its Continuing Agricultural Extension Centre.

One of the key drivers for successful teaching and learning in the university is the availability of a ready job market to absorb agricultural graduates. Integration of GO4IT course modules at the university is expected to produce the desired graduates, who will be in demand, and will be readily absorbed into the job market.



# 4 Analysis

Group exercise during GO4IT course | Photo: Whighton Makina



# How have agricultural development practitioners and their organizations changed?

BY ORPAH MUCHANETA KABAMBE, MARY C. LOPOKOIYIT, SIMON N. MUTONGA AND BERNARD OBAA

*“Learning to operate as part of a value chain, sharing information, and looking for ways to set in motion complementary efforts, have been seen as the most rewarding outcomes for platform members.”* Elias Gaveta, Agriculture and Natural Resources Management Coordinator, WALA, Malawi (page 46)

GO4IT course participants were mid-career professionals. They learned from their lecturers, through interaction with other trainees, and by trying things out for themselves in the field. But the learning did not stop there: through these trainees, their organizations (referred to in this chapter as ‘employers’) have also learned and changed. In this chapter, we review change at three levels – individual (trained staff), organizational (beyond trained staff), and institutional (relationships with other organizations, changes in policy) – by presenting challenges and lessons that emerged from the seven trainee case studies, along with lessons derived from 39 other case studies presented at national workshops by Egerton, LUANAR and Makerere universities (15, 12 and 12 studies respectively).

## Individual capacity development: the course participants

The course participants learned from the GO4IT course in two main ways: they gained knowledge which strongly enhanced their understanding of innovation systems and stimulated them to approach multi-stakeholder processes differently. Secondly, they were also trained in ‘soft’ skills, such as presenting in front of a group and facilitating meetings and discussions. By putting the soft skills into practice in the classroom, trainees gained the confidence required to effectively use them in the field. Although the GO4IT course delivery approach – interactive, centred on learning, and drawing on participants’ own ideas and experiences – was new for trainees and lecturers, it was supported by teaching methods that encouraged interaction, which were well received by both groups.

### Think outside the box

Perhaps the most striking change seen across all the case studies was that course participants all sought to find new ways to carry out their day-to-day jobs. They were encouraged to think outside the box, daring to try out new ideas and solutions. In some cases, it took only a more careful look around to realize, for example, that a different crop variety existed that deserved to be tried out (Nerica rice, Malawi). In other cases, it involved trying to change the way people worked together (World Vision, Uganda; AFID, Uganda), or opening up to ideas from stakeholders who had not been listened to in the past (Moringa, Malawi).

Course participants were confident and passionate; they took risks and experimented with novel ideas and technologies (Mumias Sugar Company, Kenya; Moringa, Malawi). This allowed such ideas to be explored and shared among stakeholders and created an openness to embrace new knowledge or ways of doing things (Moringa, Malawi). The 7 cases featured attest to the fact that these new capacities flourished largely as a result of the GO4IT course, and not through a biased selection of staff to participate in GO4IT (Mumias Sugar Company, Kenya).

Course participants envisioned new models for carrying out extension services, using a more inclusive approach to mobilize and engage stakeholders, as shown by the case of WALA in Malawi (Cassava and sweet potato, Malawi). Before the course, the flow of information had been one-way, from extension agents to the end users. Innovation platforms, however, enabled all stakeholders to communicate equally. The trainees made it their business to seek and develop networks and partnerships, and to identify resources and roles for the different stakeholders. This new drive and initiative to do things differently and to challenge the status quo was typical of the participants. Many of the case studies refer to these changes in the engagement and roles of public and private service providers. Thus, changes in the trainees were accompanied by changes in organizational processes and modes of engagement.

### **Capacity to establish innovation platforms**

The GO4IT course participants established innovation platforms and other multi-stakeholder arrangements to address diverse problems. These included: crop production and marketing in Mawingu agribusiness innovation platform in Kenya; improving procedures of fertilizer application by Mumias Sugar Company in Kenya; participatory engagement of stakeholders and formation of partnerships by AFID in Uganda; dissemination of Nerica 3 and 4 upland rice varieties in Karonga District, and seed bulking for sweet potato and cassava in Chikwawa District, both in Malawi. These examples show how the innovation concept was perceived and implemented, including a significant emphasis on the establishment of platforms at local level.

Within each innovation process, a wide range of stakeholders was engaged to address multifaceted problems, such as food security, climate change, nutrition, marketing, poverty and natural resource management (e.g. World Vision, Uganda). Course participants learned to conceptualize an innovation system in a new way, in order to creatively mobilize stakeholders, initiate dialogue, promote alternative solutions and suggest synergies to address the challenges.

It is important to note that the employers provided a major input by creating an enabling environment. This was achieved through co-financing, provision of field supervision staff time and other resources, and providing the course participants with time off work in order to attend the training.

### **Capacity to engage different stakeholders**

Despite the varied interests and approaches of innovation platform members, the trainees' capacity to mobilize people behind a common goal led to the voluntary participation of stakeholders in the innovation process (World Vision, Uganda; Mawingu Agribusiness Innovation Platform, Kenya; Moringa, Malawi). In addition, the trainees' openness to diverse ideas, and



their capacity to engage stakeholders and seek their opinions, inspired and excited stakeholders to commit themselves to the purpose of the innovation platform. This commitment was shown in members' willingness to fund activities, pay for goods and services and seek funds to support the innovation platform. Moreover, trainees were often able to help stakeholders find common goals instead of emphasizing differences (World Vision, Uganda). The trainees were passionate about the process, and were able to reach consensus and negotiate between different interests to create win-win collaborative platforms. A sense of openness and transparency allowed innovation partners to enter and exit naturally.

GO4IT course participants were able to see the world with new eyes as they shed their 'expert' roles and took up the role of facilitators of the innovation process. As such, they were able to remain focused and maintain momentum for the platform's goal and vision.

To build consensus and ownership of the process, trainees held several meetings with stakeholders. Managing multi-stakeholder expectations, interests and interactions was not always easy. Critical listening, negotiation skills, effective communication, conflict management, facilitation and knowledge of participatory approaches, and the ability to analyze power relations, areas of benefit and the influence of stakeholders were key competencies exemplified by GO4IT course participants in bringing diverse stakeholders together in an innovation platform.

Convincing local communities to take on responsibility for work considered as public service or government responsibility was a specific challenge in a few cases. Strong leadership and management skills were evident in the ability of course participants to interact with local stakeholders, regardless of socio-economic status. In the Mawingu Agribusiness Innovation Platform, the farmer group included internally displaced people from the 2008 post-election violence in Kenya, poor farm labourers, teachers and pastors in the community.

### **Capacity to enhance governance of innovation processes**

GO4IT course participants established formal and semi-formal structures to govern the innovation process and the platforms that were needed to sustain partnership, trust and commitment among stakeholders. In the Mawingu Agribusiness Innovation Platform, this included registration with the Ministry of Gender, Children and Social Services in Kenya, involvement of the local government administration, local leaders such as the village chief, councillors and the Member of Parliament. This was necessary to get political, government and private sector support for innovation activities. The registration of farmer groups empowered farmers to take responsibility for their activities and finances by electing a chairperson, treasurer and secretary. Farmers got involved in several platforms. The Linga EPA platform (Moringa, Malawi) engaged public stakeholders as well as farmers and local leaders; previously, farmers had not been fully consulted on new agricultural initiatives or concepts.

The establishment of formal structures provided a framework for stakeholders to raise funds for meetings and activities. For example, in one innovation platform in Malawi, one partner provided farmers with drip irrigation kits (Cassava and sweet potato, Malawi). In the case of the Mawingu Agribusiness Innovation Platform, all stakeholders paid for their lunches and transport to meetings (Mawingu Agribusiness Innovation Platform, Kenya). They also lob-

bied for support from the Smallholder Horticulture Marketing Programme to complete the construction of the Oleroriondo market as an outlet for local produce. The farmers' group also organized a credit line for tractor hire, and with seed and fertilizer suppliers, so that all were supplied with inputs at the same time. This enabled them to synchronize planting so as to meet market volume requirements. The development of these formal farmer and community structures, or constituencies, were necessary to lend legitimacy to the innovation platform and provided GO4IT course participants with the critical mandate to negotiate with other organizations external to the platform.

### **Capacity to identify quick returns for stakeholder engagement in the innovation process**

GO4IT course participants were able to identify quick returns in order to build momentum and encourage participation and continued interest of stakeholders in the innovation process (Mawingu Agribusiness Innovation Platform, Kenya; Moringa, Malawi). In Malawi, the participation of farmers in on-farm trials, and demonstrations by lead farmers showing the higher yields of new varieties, led to an increased uptake (Cassava and sweet potato, Malawi). These demonstrations were critical in helping to overcome farmers' reluctance to adopt the new varieties. This suggests that stakeholders need assurance that the objectives of the innovation process are achievable before they fully commit themselves and their resources; trainees were often able to initiate activities and discussions in such a way that stakeholders became enthusiastic.

### **Capacity to document experiences and good practices in innovation processes**

Documenting experiences and progress was done by trainees using video, photographs, reports and case studies, with the participation of stakeholders (AFID, Uganda). The Mumias Sugar Company magazine featured their trainee employee's re-engineered block fertilizer approach as an exemplary innovation for other sugar growing zones (Mumias Sugar Company, Kenya). The WALA experience with sweet potato vine was featured in a Malawian national newspaper, an article which has helped to interest others in the approach and triggered training sessions on the technology (Cassava and sweet potato, Malawi).

### **Looking beyond the GO4IT course**

GO4IT participants endeavoured to promote sustainability in the innovation platforms by developing partners' sense of ownership, and also by training other officers in the organization and ensuring that platforms became part of the institutional structure. This was enhanced by effective and targeted communication throughout the innovation process to sustain interest, address challenges and doubts, and engage new stakeholders to address emerging issues.

Once the innovation platform was in place, communities started addressing additional concerns using the same mechanisms. This demonstrates the success that trainees had in building networks and enabling stakeholders to identify other partners and activities to solve emerging challenges. Once the original idea of collective marketing was up and running, the Mawingu Agribusiness Innovation Platform in Kenya, for example, began to take it upon themselves to maintain rural access roads, which ensured they were passable during the rainy season for trucks to collect farm produce.

New challenges and opportunities led to frequent changes in the innovation platforms, often



Field day with IP members in the plot of Gibson Gitonga (middle in front) | Photo: Francis Muchiri

resulting in a need to shift priorities and develop new partnership arrangements. In most cases, trainees were able to make use of the same knowledge to effectively facilitate the new phase of the platforms (Nerica rice, Malawi; Cassava and sweet potato, Malawi). Thus the ability of GO4IT course participants to create a robust, multi-stakeholder platform capable of reinventing itself when required became more important than the initial innovation.

### **Capacity to monitor the innovation process for learning and accountability**

Monitoring and evaluation of the innovation process was important to ensure accountability and build momentum, whether for the multi-stakeholder platform, the employers of the course participants or the GO4IT project itself. Field visits from GO4IT facilitators and reports from supervisors were part of the formal monitoring of project activities. The facilitators provided mentorship to trainees. Sharing challenges and successes among course participants during subsequent GO4IT blocks also encouraged them to continue with their innovation process. Continued mentorship and capacity building, provided by the universities to address training gaps, were a key success factor when well executed; and a limiting factor when not.

Trainees were also encouraged to develop simple monitoring tools to assess progress, for instance by taking minutes and writing diaries. This enabled stakeholders, especially farmers, to celebrate milestones and take stock of the progress made. In the case of Mumias Sugar Company, Kenya, parameters used by farmers and trainees to monitor progress included the health of the sugar cane crop, its colour, height and girth. These progress markers were instrumental in spurring change.

Nevertheless, it can be said that, in general, the documentation and monitoring focused on activities and indicators (results/outcome/impact) for the purpose of accountability to employers rather than individual or group learning and change. GO4IT course participants found it easier to document and report on activities, as opposed to changes in attitudes and practices. While the latter are not easily quantifiable, they are just as important to track and understand.

## Organizational capacity development

Organizations whose employees took part in the GO4IT mid-career course were also influenced by the course, helping to achieve some impacts at scale. The achievements of the Mawingu Agribusiness Innovation Platform, for instance, inspired some ministry staff to scale out similar approaches in other locations. Mumias Sugar Company started using the new system developed by their trainee employee to organize interaction with farmers in other zones.

Organizational capacity development came about in different ways:

- Through interaction between employers and the university;
- By taking part in activities in the field – which provided clear proof that things could be done differently in comparison to the organization's standard practice;
- By allowing GO4IT course participants to share lessons and experiences within the organization. The trainees were requested to make at least one presentation to their colleagues/managers after each GO4IT training block.

Whether the new experiences of the GO4IT course participants found fertile ground in their organizations was determined by a combination of factors:

- The closeness of the relationship between the university and the employer. A close relationship with the university is a good start for joint work and joint learning: it indicates that the employer is open to suggestions from 'outside' and takes the role of the university seriously. Normally, this is reflected in a more careful selection of personnel to attend the course, and serious field supervision by the employer;
- The position of the trainee within the organization. If the trainee is a senior manager, they may be too busy with management to get engaged with change on the ground. Any new practices or behaviour that 'trickle down' from the trainee may be met by little understanding or commitment from other staff members. If the trainee is too junior, they may not be taken seriously by the higher level management. A recommendation made by the case study authors is that the mid-career professionals should be at 'mid-level', ensuring good access and rapport with both their bosses and field/local staff;
- Field supervision by the university. Courtesy visits to the field and meetings with senior management in the trainee's workplace add credibility to the trainee's work. Close supervision also challenges the trainees to continuously improve their work;
- Personal openness to new ideas and approaches of the organization as a whole, and in particular the trainee's immediate manager. This is often a reflection of the incentive systems at the organization, such as the criteria for promotion and distribution of rewards.

Examples of organizational change that took place are described below.

### **Re-defining roles**

Trainees continued to facilitate organizational change using the same principles learnt during the GO4IT mid-career course. For example, in the case of AFID, Uganda, the trainee changed the way the organization worked, putting in place mechanisms to ensure that contacts made with other partners were not exclusively linked to her. She did so by involving others in the process, ensuring the continuity and sustainability of these contacts. In the case of Mumias Sugar Company, Kenya, the trainee re-organised processes and re-defined staff procedures so that, using the same resources, the company could achieve better results. Also in Nerica rice, Malawi, technicians who previously only worked in their respective sections began working together as a team, thanks to the work of the GO4IT trainee, a development that was seen in other organizations where trainees were employed.

### **Getting others involved**

Information sharing within an organization on the activities carried out by the trainee was also important. This was done in different ways in the case studies. Some GO4IT course participants gave presentations in their own organizations after the course, some provided training and coaching to colleagues, and others just informed superiors about what they had learned and what their plans were to engage stakeholders and try something new. Trainees also shared outcomes from the innovation platforms with top management and with colleagues, both from within and outside their organization.

In several cases, course participants involved one or more colleagues in their day-to-day activities, which helped in spreading knowledge and skills within the organization. In Mawingu Agribusiness Innovation Platform, Kenya, the trainee trained other extensionists, helping them to start up a similar process (this time for marketing of Irish potatoes and garden peas) in another district. Promoting the trainee (as in Mumias Sugar Company, Kenya) is another way of scaling up change, as the trainee tends to implement what they have learned at a higher level.

However, involving colleagues in innovation platform outcomes can be problematic, as the quality of the work carried out by untrained colleagues may be poor if not monitored closely. Very often, those untrained tend to look at the innovation as a new technology, without the proper understanding of what it takes to develop and introduce a new way of doing things. Thus, there is an intrinsic danger that unsupervised colleagues end up reproducing a linear model of technology transfer, which is at odds with innovation systems thinking. The quality of work carried out by untrained or newly-trained staff within the organization requires follow-up, monitoring and joint work in the field by the trainee and their employer, to share experiences in a hands-on environment.

In addition, changing jobs can also create a gap in any organizational change process initiated by the trainee, as he or she may not be able to continue their work from a new position. In the same way, when trainees change jobs, there is need to follow up with both the new and old employers, to ensure that the work already in place continues (Nerica rice, Malawi). Of course,

a new job also means that another organization will be exposed to innovations thinking, which is a valuable opportunity.

### **Organizational involvement precedes organizational change**

Support from superiors is very important for piloting something new (Mawingu Agribusiness Innovation Platform, Kenya), so regular briefing of higher level staff is essential for their buy-in and support. Commitment to support the completion of the training is also vital, if the training is to have any impact on the organization. This commitment by the organization has to start from the selection of suitable candidates and proper briefing and communication prior to the training. An organization needs to own the innovation process, and take responsibility for ensuring sustainability of the process started by the trainee (AFID, Uganda).

Organizational involvement at all stages of the change process, right from before the course starts, is essential for facilitation of information sharing and feedback on the results and outcomes. It is for this reason that sharing with co-workers what was learned in the course (after each block), and engaging a supervisor from the same organization, were both requirements of the GO4IT course.

A transparent selection process is also needed at organizational level, in order to select capable individuals who will have the interest to drive the innovation process. In addition, potential GO4IT course participants need proper briefing about the training, prior to final selection, so they are fully aware of what the course is all about. This was not always in place, resulting in a few students coming into the course with little idea of what they would find.

### **Institutional level**

Institutional change is about changes in policy, rules and regulations as well as in the way organizations collaborate and work with each other. Agricultural innovation systems thinking assumes that changes in the way organizations relate to each other and provide space and support for change internally are essential to agricultural development.

### **Enhancing partnerships**

Implementation of the mid-career course has only recently been concluded, and it is therefore too early to find clear institutional changes at the level of employer organizations. What is most visible, up to now, is the change in the way organizations relate to other stakeholders. World Vision set in motion a process of joint planning and implementation of its project interventions (World Vision, Uganda). In Malawi, partners learned to share information and looked for ways to work together, not 're-inventing the wheel', but building on each other's expertise (Cassava and sweet potato, Malawi). In the case of Mumias Sugar Company, Kenya, the work of the trainee led to improved relations between the sugar company and farmers. Relationships became less dependent on one person and more efficient and effective in the case of AFID, Uganda, while project activities became part of the formal working plan of Baka Research Station (Nerica rice, Malawi). In all five cases, it can be said that a new way to relate to partners became common practice and, one may argue, policy.



## **Rewarding systems**

An important element of support to those trying new approaches is a proper reward system. Although in several cases GO4IT course participants were rewarded for their work (by being promoted, better accepted by the local communities, having their story publicized, etc.), only in one case has the reward system changed to accommodate the findings of the trainee's work. This was the case of Mumias Sugar Company, Kenya, where block fertilizer application is now one of the key performance indicators for field staff. The percentage of fields treated under block application is now used to determine the percentage awarded for annual bonus and salary increment. Reward here is not necessarily seen as monetary, but also – and perhaps more importantly – public recognition of the work carried out. Being rewarded for trying new things (even when they fail) is essential for creating an open culture at the organizational level. Discussing potential reward systems with employers prior to student enrolment in the GO4IT course could be a worthwhile development for the future.

## **Role of graduate students in innovation policy development**

The large majority of the participants in the GO4IT mid-career course were from public service providers (research and extension departments, as well as donor-funded projects), NGOs, and a few private companies. These organizations all face the challenge of how to facilitate innovation processes – and the GO4IT course gave them a chance to do that in practice and learn from it. Graduate students participating in the mid-career course can be influential in agricultural innovation. For instance, professionals in Uganda participating in a GO4IT course specifically for PhD students delivered by Makerere University held prominent positions in parliament, in the Ministry of Agriculture, Animal Industry and Fisheries, the National Agricultural Advisory Services, the National Agricultural Research Organization, NGOs, industry and other government agencies.

# How have lecturers and universities changed?

BY: WILLEM HEEMSKERK, ELIZABETH KAMAU-MBUTHIA, GABRIEL KARUBANGA AND JOHN KAZEMBE

*Lecturers need to change themselves before they can change the students.*

Change has been sown in the three partnering universities with the introduction of the GO4IT mid-career course. Based on the presented cases from Egerton University, LUANAR and Makerere University, lessons were drawn and challenges identified. This analysis is based on the three interactive levels of the capacity development pyramid, as presented in Chapter 1: individual, organizational and institutional change.

## Change in capacity of individual staff in universities

Capacities of the university staff were built in three main ways: through the training of the GO4IT trainers; through actually delivering the course; and by supervising the GO4IT trainees on the ground. It must be said that the project was more successful in some places than in others. For instance, where university staff and management had previous exposure to innovation systems thinking and theory (e.g. Makerere University), the project was easily incorporated into the university's day-to-day practice, and new ideas and practices it promoted were taken on board quicker.

As argued earlier in this book (see Chapter 1, p.5-8), new mindsets, skills and practice of university staff are important steps towards a university that is more responsive to the needs of society.

### Soft skills

A variety of skills are required to bring about innovation. Individuals from different technical professions appreciated the GO4IT course, as it enhanced their 'people' or 'soft' skills. This enabled them to better communicate technical information to others, and to work with people in other fields more effectively. The staff members who went through the GO4IT trainings of trainers and taught the course became more confident of their own capacities. They were able to integrate and use skills – such as facilitation – within and beyond the classroom. In LUANAR, a team of researchers has facilitated a process of rehabilitating the Lilongwe River catchment. In Egerton, the nutrition department was able to facilitate a leadership course for all staff.

## Teaching methods

Importantly, the course also stimulated university staff to re-think their teaching methods. GO4IT showed lecturers that a more action-oriented, learner-centred approach, and open interaction with students, was possible and desirable. The course exposed teachers to working methods (such as working on case studies in small groups) that could be – and were – applied to their own teaching situation, often in large groups in an auditorium.

The three cases suggest that university staff improved their ability to engage students in interactive learning, often drawing on trainees' own experiences and ideas, which contributed to enhanced creativity and critical thinking among students, most of whom were enthusiastic about the new way classes were given. Interactive learning also contributed to skill development among GO4IT mid-career course participants, as they were able to practice facilitation skills, such as presenting in front of a group or managing a discussion, within the classroom environment.

Esther Mbaire, an IP member posing in her garden peas plot | Photo: Francis Muchiri



These changes also meant that lecturers took upon themselves the roles of facilitator and mentor, encouraging and enabling students to discover the world by themselves, rather than being a teacher who tells students what they should think and know.

## University teams

Following the training of trainers' course, the trained staff became very motivated. Several individuals engaged enthusiastically with the project throughout its entire duration. They also expressed a desire to be updated with new skills and approaches.

Each partner university worked with a team of trained GO4IT mid-career course facilitators. The team members provided peer support, and the social cohesion of these teams became important. Having team members of the same generation made it easier for people to work together, as they shared similar points of view and understanding.

In Makerere, the team was composed of people who had already worked together, had had prior exposure to innovation concepts and were keen to make a difference through the project. In Egerton, people were also able to work together very well despite not having worked together before, and by the end of the project had formed a cohesive team. Team members showed personal interest and self-motivation, maintaining momentum as they worked progressively towards a common goal.

However, whilst the majority of individuals showed interest in facilitating training, some individuals had challenges in conceptualizing innovation systems or putting the thinking into practice in their disciplines (particularly those in 'hard' sciences), and hence lost interest. Lack of interest in some universities was further compounded by a lack of appreciation of staff efforts to put the GO4IT mid-career course into practice among senior management. The three people who dropped out of the Egerton course did so from a lack of interest, while in LUANAR, there were divergent personal interests which consequently affected the level of individual commitment. In Makerere, where the project was coordinated by a single department (DEIS), staff who dropped out were not from this department. Reducing the number of drop outs raises the need for other strategies to better engage individuals with a negative mindset towards innovation systems thinking.

## Organizational change

The university teams further disseminated what they had learned through the GO4IT project in different ways within the universities. These included internal seminars and courses, and by changing existing course curricula, thereby securing the participation of other lecturers. For this, the support of university management was vital. The establishment of university teams to work with the GO4IT project, and carry the message of the project beyond its duration and scope were another organizational change.

## Organizational awareness and ownership

A key aspect at the start of the GO4IT project was creating awareness among top management and relevant stakeholders, in order to get institutional 'buy in' for the project. Seminars

for top management and university staff were conducted in each participating university, which ensured financial and moral support to the university teams. For example, in LUANAR the management pre-financed the first cycle of training. At Egerton University, the management provided moral support as well as funds for procuring a project vehicle. At Makerere University, the management was fully committed to supporting the lead department of the project.

While support provided to the GO4IT mid-career course was commendable, there is still a need for management to develop a critical mass to champion sustainable innovation processes within universities. When only a few lecturers champion a new approach, they tend to encounter much more resistance than when a team of 10, for example, champion the cause.

### **Across disciplines and courses**

The implementation of the GO4IT project involved various individuals and departments from across different disciplines. For example, at LUANAR, the implementing team comprised of staff from the Departments of Agriculture Education and Development Communication, and Natural Resources. In Egerton, departments involved included Agricultural Education and Extension, and Human Nutrition. By contrast, the team at Makerere University came from a single department (DEIS) with diverse expertise, including sociology and innovation approaches, and with staff who also taught courses outside social sciences and agriculture. The diversity at Makerere was a particularly good entry point for organizational level change, as it was easier to encourage other lecturers from a broader group of disciplines to be involved.

More work, however, needs to be done to facilitate interaction and joint learning between departments of the universities. In addition, more effort needs to be made to inform other lecturers about innovation systems thinking, through workshops, seminars, departmental meetings or short courses for staff. LUANAR argues, for example, that the training of trainers course on innovation systems thinking should be offered to all new university staff. Other existing trainings – such as the Canaan leadership training on changing mindsets – also support organizational change.

### **Curriculum change**

The course content was made relevant by engaging various stakeholders to identify their training needs, which was undertaken by all three universities. The current relevance of the GO4IT mid-career course can be attributed to its comprehensiveness in capturing stakeholders' aspirations and individual capacity needs, including the universities. Following this identification of training needs, changes have taken place to improve teaching and learning.

In LUANAR, for example, the participation of staff members in the training of trainers enabled departments to integrate innovation issues in curricula beginning shortly after the commencement of the mid-career course. Makerere University has integrated some elements of innovation in existing courses, and has introduced a Bachelor of Agriculture and Rural Innovation. At Egerton, a postgraduate Diploma on Innovation and Integrated Research for Agricultural Development has been developed, besides the integration of the GO4IT mid-career course content into existing courses. LUANAR is considering introducing a Bachelor's and/or Master's Degree in Innovation Systems (see Chapter 3 for further plans).

With the need to mainstream innovation system thinking in university curricula comes the need to look at the timing of when the subject should be introduced to students. For instance, should the innovation concept be introduced in the first year of university education, towards the end, or should it be done progressively? This will also depend on the curriculum course, the context and the specific aspects of innovation that are required.

## Enabling institutional change for universities

University institutional development is understood as changes in a university's rules and policies and in the way it relates to partners, from future employers of its students to their final clients (farmers and other actors in the value chain).

The experience of Egerton University is a good example of how such a change took place. Since the GO4IT project started with a stakeholder needs assessment, relations were built with a large variety of graduate employers. Lecturers were convinced of the importance of the GO4IT course, and took the initiative to market it. Their enthusiasm impressed the Ministry of Agriculture, Livestock and Fisheries Development, which – equally convinced – listed and recommended the course for its staff even before the first holding of the GO4IT mid-career course (given over a period of nine months) had been completed. Egerton staff invested heavily in relations with employers, and also organized feedback sessions with the mid-career course participants, to share the results of the action research and their feedback on the GO4IT course itself. Formalizing the partnerships with employers has not yet taken place, but these partnerships can still be considered as an outcome of the mid-career course. The field work was supervised by university staff, together with the employer. These working relationships also led to a series of possible internship options.

The Egerton example shows that there has been a clear change in the way the university deals with its external partners, with the university being recognized for its role in building the capacity of students who are directly supporting employers in the field.

## Policy support and decision-making

Internal university policy on mainstreaming innovation systems thinking, through components such as staff incentives for field work, internships, action research, curriculum development and teaching strategies are an essential part of long-term institutional change. University partnership policy needs to be linked to curriculum review policy, in which external innovation systems stakeholders can be involved. Regular engagement with employers (including employers of extension staff, such as ministries and NGOs) is needed to gain insights on job demands for university graduates. In Egerton, for example, it is already mandatory for the university to involve external stakeholders in its curriculum review.

## Internships

With the implementation of the GO4IT mid-career course, the universities saw a change in the way internships were organized and supervised. The GO4IT course interval assignments – unlike the usual internships, where students only 'observed' – enabled students to directly engage in practice and learn by implementing things themselves. Those in charge of arranging internships within the universities have also learned from the experience.



The change in emphasis in internships also had organizational consequences for the universities, which now need to use different criteria for selecting possible internships and supervising students in the field. Egerton, for example, now engages private partners in assessing students during their internship periods; previously, assessments were only made by lecturers.

### **Partnership development**

In Malawi, links with individual farmers and groups were strengthened as a result of the field work of GO4IT mid-career course participants. Now, however, there is a perceived need to link up with higher-level farmer organizations, such as NASFAM in Malawi. In Kenya, collaboration with sugar companies was initiated through the Kenya Sugar Board and subsequently led to partnerships at company level, through the course participants.

The links between universities, the private sector and farmer organizations need further strengthening; links with other universities, public service providers, donor-funded projects and NGOs come more ‘naturally’ to lecturers, as staff from these organizations tend to be part of lecturers’ existing networks. This is reflected in the type of participants who attended the mid-career courses.

In addition, the GO4IT project was characterized by collaboration between the three universities, supported by RUFORUM and KIT. This collaboration was, however, less than initially anticipated and further interaction was an opportunity the universities missed. If the universities are to embrace innovations systems thinking, collaboration between Egerton, LUANAR and Makerere should be strengthened, and perhaps be expanded to include other interested universities.

### **Sustainability**

Both demand for the GO4IT mid-career course, and the financial resources to run it, will depend on a number of factors. The GO4IT course, which will be paid for by the employers, needs to fit into the day-to-day responsibilities of the trainees, so training blocks should not be more than a week. The mid-career course also needs to be tailor-made; KARI, for example, argued that the course needed to be more focused on research. There is need for flexibility in offering the mid-career course, with organizations pre-selecting the modules they feel are most relevant.

Relations developed by the universities during the GO4IT mid-career course are considered sustainable, as interest exists between the universities, employers and others to maintain these relations. Importantly, the partnerships were not based on financial resources provided by the GO4IT project. In some countries, such as in Kenya and Uganda, the agricultural extension system has adopted a partnership approach, thereby strengthening the sustainability of relations with the university.

Another crucial element for effective demand (meaning employers’ willingness to pay the full course fee) is certification of the GO4IT mid-career course, as part of a quality assurance system. The GO4IT course has been given twice in each university but is not yet certified, which requires a longer process. The fact that the course is not certified can affect relations with the employers of attending participants – notably in the public sector, where certification is more

important than in the private sector. The lack of certification also affects the commitment of course participants, who invest large amounts of time and energy as well as resources in the course. Trainees need some sort of recognition to allow them to advance their career, notably in the public sector. In the private sector, promotion is more based on performance (as illustrated by Mumias Sugar Company, Kenya). In Malawi, course participation is not likely to be funded by the Ministry of Agriculture if it is not certified, but with Makerere and Egerton this is less of a problem. While certification is still important, the respective ministries in Kenya and Uganda would still send their staff to attend the GO4IT mid-career course, as participation is based more on perceived value.

## **Outscaling**

Innovation systems thinking was introduced to a few university staff and some students, as well as a number of mid-career professionals. The challenge is how to disseminate innovation systems thinking within the university (as addressed earlier in organizational change. p 88), as well as in the wider network of universities and in their partnerships. Outscaling agricultural innovation systems thinking requires the use of a similar approach to the GO4IT mid-career course, by providing the training and opportunities for universities and mid-career professionals to engage in action research. Some universities have already gone down this road by engaging with other universities (as in Malawi and Uganda). This has largely happened as a result of a common practice of 'sharing staff' between universities. In addition, a few GO4IT course participants were university lecturers, teaching at other (local) universities.

Convincing the Ministry of Education that such an approach would benefit a larger number of universities remains a challenge in all three countries.

# How to make sure change does not stop here?

BY: MARIANA WONGTSCHOWSKI AND WILLEM HEEMSKERK

The work undertaken by university staff in implementing the GO4IT mid-career course has had a number of outcomes. At the university level, staff competency has been built and teaching methods have begun to change to become more action/practice-oriented and field-based. At each of the three universities, a team has been formed to champion this change. The question that remains is, now that the project is ending, are these teams able to sustain the change process?

The same holds for those trained through the GO4IT mid-career course. The trainees' work had multiple benefits for themselves, the communities in which they work and their employers. Some trainees were recognized by their employers and promoted, while others had the opportunity to share their experiences in national and regional workshops. Imelda Namatsi at the Mumias Sugar Company, for example, was promoted from a field supervisor for one sub-location to a field operation officer in charge of four sub-locations. David Kuria of the Ministry of Agriculture in Kenya was recognized for transforming the local community through the establishment of an agribusiness innovation platform, and shared his experience with KARI.

Again we have to ask, are these champions capable of sustaining the momentum of the change process they started within their organizations? Will their work be recognized and taken up by others? This section looks at the ideas – and initial initiatives – presented by both university staff and GO4IT course participants on how to ensure their work and achievements continue after the end of the GO4IT project. In addition, it looks at the suggestions for improvement and scaling up of the mid-career course – or similar capacity development efforts. This section ends with a short analysis of the next steps for the partnerships established throughout the project, considered by many as a key outcome of the GO4IT project.

## Follow-up strategies suggested by the universities

### Climbing down from the ivory tower

The GO4IT project and corresponding change processes questioned the role universities play in (agricultural) society. Whereas universities were often seen to educate students independently of the realities they would work in after graduating (referred to by some as the 'ivory tower' complex), the three universities were able to reflect on their direct and indirect roles in tackling poverty and hunger through agricultural development.

Universities can play a direct role as active stakeholders in agricultural innovation systems. They can be knowledge providers within innovation platforms, but often they are also requested to play the role of brokers or facilitators of multi-stakeholder projects, meetings or networks. This requires that universities build relationships with farmers and other agricultural entrepreneurs, larger market and consumer organizations, the private sector, other knowledge institutes and knowledge brokers, and extension services, as well as with infrastructure and knowledge service providers.

Assuming the role of a broker allows lecturers to experience – first hand – the challenges of forming and maintaining such partnerships. In this way, they put themselves in the shoes of their own students, who are often requested to manage similar partnerships as part of their jobs. This is an important learning process for university staff, who are then better able to relate to and understand the questions and fears of their students.

Indirectly, universities play a role in changing the agricultural innovation systems they are a part of, by educating students to understand – and improve – the agricultural sector. One facet of this is to be able to respond to employers' needs, but this is only one aspect, as the university may also develop its own vision of what kind of professional is needed.

Similarly, universities have an important role to play in strengthening the capacity of other university staff to continue with the approach. In Uganda, two universities – other than Makerere – have been influenced by having their staff complete the GO4IT mid-career course. In Malawi, the 'GO4IT experience' has been shared, with LUANAR using some GO4IT materials and methods to train staff from other universities.

Finally, university students and staff may be well placed to stimulate (agricultural and educational) policy change. Makerere, for example, has two Members of Parliament among the PhD students trained.

Importantly, transformations initiated by the universities (new curricula, training tools, ways to approach and engage both students and external parties) have implications for the performance assessment of university staff and the related incentive structure. Instead of being rewarded only for peer-reviewed publications, universities could, for example, provide recognition to those facilitating an innovation systems partnership or supervising trainees in the field.

### **Alumni networks**

A particular challenge in sustaining the innovation systems momentum is to maintain support for those initially trained through the GO4IT mid-career course. Universities have stated that they would like to maintain contact with the trainees. When those initially trained are training others (which is already happening), university staff could also be involved to ensure the quality of the training. A larger network of facilitators would be a good asset for universities, as they could call upon them to implement practical classes, offer internship positions, and use their experiences to generate further lessons on the facilitation of innovation.

In addition, alumni can sustain their enthusiasm for innovation systems thinking and continued learning by maintaining contact with each other, sharing lessons and challenges and continuing to work together. At Egerton, a network of 25 alumni from the GO4IT mid-career course already provides such peer support.

### **Mainstreaming innovation systems within universities**

For a professional to become more open and better able to deal with different realities and perspectives, and to facilitate interaction, a totally new system of education is required. Altering a few modules in a university course is not enough. Change starts by having lecturers from hard (as well as soft) sciences understanding the process of innovation – in agricultural development – and the role that students (as future employees) can one day play to strengthen the process of innovation. Increasing numbers of lecturers from across more disciplines are needed to embrace, or at least respect and be open to, innovation systems thinking. The changes that have occurred within Egerton, LUANAR and Makerere universities are still on a small-scale and have yet to transform thinking university-wide.

To mainstream innovation systems, a team of champions needs to be maintained within the university to spearhead the agricultural innovation agenda, mobilize resources and encourage university management and department heads to support staff training on innovation processes.

At Egerton, the team aims to ensure that lessons from the GO4IT mid-career course are incorporated into pedagogical courses offered to faculty staff annually by the Faculty of Education and Community Studies. Elements of the GO4IT course to potentially be included are: mentorship, leadership, conflict resolution and negotiation, and facilitation skills. At the three universities, the teams want to organize university/college-wide seminars on innovation, to mainstream the concept. At LUANAR, the team wants to contribute to the integration of new teaching methods in the university.

### **Marketing short courses**

A demand seems to exist for the GO4IT mid-career course among the participating employers, as several of them stated that they would be ready to pay for such courses in the future. Ideally, trainees or their employers will pay the tuition fees. Nevertheless, some further analysis of demand will be needed: are the employers really ready to pay? And what conditions do universities need to meet (such as in teaching standards) in order to expect employers to pay?

In addition to full payment by employers, different options for cost-sharing exist. In the GO4IT mid-career course, for example, employers paid for student time, travel costs and costs incurred during field work. Although this worked reasonably well, there needs to be much greater clarity on the magnitude of investment required from an employer, who needs to commit fully before an employee joins the course.

All three universities are planning to market the course as a stand-alone short course with practical learning intervals. Egerton, for example, has developed a two-week course on environmental innovation, which uses some GO4IT modules.

Each of the universities will also target larger employers in the agricultural sector, such as the Ministry of Agriculture and, notably, research and extension branches in crops, animal husbandry and forestry. Other targeted employers could include the Cereals and Produce Board of Kenya and NGOs, as well as private sector actors and other service providers. The universities all acknowledge that the GO4IT mid-career course needs to be tailor-made according to specific requirements of employers.

The mid-career course also needs to be advertised, through university websites, personal contacts, and the presentation of successful cases to potentially interested organizations. Developing alumni networks of course participants can also play a role, as they are able to act as ambassadors for the course. All three universities are developing a ‘centre for innovation’ to host these courses.

Group exercise during GO4IT course | Photo: Whighton Makina





## Improving existing curricula

A variety of options exists for integrating GO4IT mid-career course modules into regular curricula. So far, modules have been incorporated into undergraduate courses in both social and natural science subjects across the three universities, but this can be pursued further. These changes have largely involved using just a few modules, and so have been accepted without the need for a lengthy approval process. A more general overhaul of existing curricula will require greater emphasis on involving a network of employers and alumni in the process.

## New courses

Egerton and Makerere intend to use the GO4IT course material to develop a Master's course on Agricultural Innovation (MARI, Master in Agricultural and Rural Innovation). Makerere is the most advanced, having already requested those initially involved in teaching the course to compile a document for approval by the University Senate. In addition, Makerere has a Bachelor in Agriculture and Rural Innovation programme, and a PhD programme in Agriculture and Rural Innovation. LUANAR is in the process of developing a distance learning course on agricultural innovation with support from the World Bank, and is also thinking of developing a Bachelor and/or Master in Agricultural Innovation Systems.

More attention will be needed to get the curricula (of both short and long courses) certified, as this was a particular request made by GO4IT mid-career course participants. However, certification is often the task of separate certification bodies, and not universities.

## Documentation and use of case studies

One of the major objectives of the GO4IT mid-career course was to bring more practical activities and experience into the university. This happened through the involvement of professionals as participants in the GO4IT course, and encouraging interaction during the learning intervals between employers, lecturers and trainees. The project generated several case studies with relevance for teaching on agricultural innovation systems, some of which are included in this book. Others will be published through other channels, including RUFORUM and university websites, and short booklets.

The cases documented here can be further used in mid-career courses, as well as in formal curricula, in the form, for example, of practical exercises. One approach would be to invite alumni (or their employers) to present their experience in class. However, more documented cases are needed to illustrate stories of success and failure, and the lessons and challenges faced in implementing the GO4IT interval assignments.

These cases can also be used by the universities in annual and project reports, as well as on Facebook, YouTube, Twitter and other social media, as mechanisms for sharing lessons among peers.

To be able to document cases, universities require a purposeful strategy. This does not have to be complicated, and can build on the GO4IT mid-career course requirement for all trainees to document their experiences systematically. For example, trainees were asked to answer a series of questions after each cycle of the course: what had they done, what were the challenges they faced and how did they try to tackle them?

Relevant case material can also be used for the development of evidence-based policy briefs; for example on the role of universities as knowledge institutes and innovation system brokers/facilitators.

## Follow-up strategies by employers and their employees

Through direct feedback from employers during the GO4IT mid-career course, trainees obtained information on the future plans and ambitions of their employers, as documented in their cases – see Box 7 (p.57) in Egerton University, Kenya.

A fundamental assumption of the GO4IT project was that those trained would make a difference in their organization. That is, they would aim to interest and excite their colleagues and supervisors in innovation systems and engage them in the trainee's new initiatives. The long-term goal would be that the GO4IT mid-career course would not only encourage trainees to create new initiatives, but also to influence initiatives that are already in existence.

As the cases in this book exemplify, employers have developed different strategies to make use of the new competencies of the trainees. Some organized training of trainers courses; others gave short presentations or wrote articles in company newsletters. A good number of the trainees did train others working under their supervision. They often had good access to the management, so as to be able to get their voice heard at higher levels. Others only got access to management as a result of the course, as the case of the Mumias Sugar Company attests.

A number of employers involved in sending staff members to the GO4IT mid-career course have now realized the importance of increasing the number of innovation facilitators within their business. However, not all employers or all employees have demonstrated this type of ownership of the principles and ideas promoted by the GO4IT course. To ensure greater commitment in these cases requires specific interventions, such as sharing good practices within an organization, and efforts by university staff to engage senior management.

Where the commitment to innovation systems thinking already exists, employers may consider promoting internal training of trainers on facilitation of innovation, giving an opportunity for GO4IT alumni to train others. Employers will also need to develop mechanisms to assess knowledge gaps within their organization in relation to the innovation process, as well as knowledge gaps of the stakeholders in a particular innovation process.

It remains a challenge, nevertheless, to effectively change the way of working and the mindset of a whole organization, while ensuring the quality of the knowledge being passed to colleagues. Of particular importance is that the focus on facilitating innovation as a process remains and does not get misunderstood as simply pushing farmers (or other stakeholders) into adopting new technologies. In some cases, for example, trainees were enthused by the course and trained others, but when they did so they focused on how to implement a certain practice or technology, rather than passing on what they had learnt about the principles of innovation as a demand-driven product of interaction, with attention paid to farmers and other actors' knowledge and ideas.

## Partnership strategies

RUFORUM, KIT and Egerton, LUANAR and Makerere universities intend to continue working together after the project, as a community of practice on agricultural innovation facilitation and capacity development. In the near future, this will be done by sharing practical lessons, (revised) course modules and peer review of documents/cases. The development of a virtual online communication platform to promote communication between the three universities will also be pursued. Egerton and Makerere will, in particular, work together to develop a Master's course on Agricultural and Rural Innovation Systems.

The universities will also engage in partnerships with employers and other stakeholders at national and sub-national level, for which interest was expressed by employers and the universities. The sustainability of partnerships between universities and employers depends on how both sides gauge the effectiveness of the partnerships. Frequent reviews are needed, whereby university staff can visit employers (or vice-versa), to jointly analyze what has been gained and what needs to be improved.

Links with policy makers, such as the Members of Parliament and senior extension officers (from the National Agricultural Advisory Services in Uganda, the Malawian Ministry of Agriculture and Food Security, and the Kenyan Ministry of Agriculture) who attended the GO4IT mid-career course, will be maintained. This will open up opportunities for influencing the way the extension and education systems work in these countries.

## Lessons for future courses à la GO4IT

Very positive feedback on the GO4IT mid-career course has been provided by some of the employers. In Kenya, it was quickly listed as an eligible course to be undertaken by Ministry of Agriculture staff members. Other employers in the three countries offered to advertise the course within their organization/NGO newsletters.

Employers and trainees have also started to provide feedback on the content of the GO4IT mid-career course. Suggestions were made to have special modules on (or more attention in existing modules to): documentation and knowledge management; monitoring and evaluation of innovation processes; and dynamics and organizational change of farmer groups. A common request was to add more practical examples to illustrate innovation concepts in relevant modules.

Adding more examples may help illustrate the concept of innovation, but perhaps a more dramatic change in the course is required. On analyzing the 10 cases, it becomes clear that the word 'innovation' is confusing. Many still refer to innovation as technology, whereas the course was designed to introduce the concept of innovation as a process which may lead to new technologies, but also to new ways of organizing work, policies or relations with partners. Many cases showed a clear understanding of this, but not all. Using another word or expression to explain the concept (for example, 'change') may help. The future value of the GO4IT course will be greatly enhanced if specific departments inform their staff about the new modules

on innovation. These can then be integrated into their teaching, both in terms of content and methodology.

In addition, most of the field work concentrated on initiating or facilitating multi-stakeholder innovation platforms. The GO4IT mid-career course, in retrospect, puts too much emphasis on setting up platforms. Bilateral discussions with key actors, joint experimentation, choosing promising ideas and trying them out with one partner, are all means towards the same end: to bring about change. Often, these activities are more appropriate than creating innovation platforms. Future curricula therefore need to build in flexible approaches.

A related issue is that trainees often faced high expectations from the stakeholders involved. When they are invited to join the platform, they deduce some kind of financial support will follow and more attention during the course is needed on how to manage these expectations. It is not to say that the funding needs of platforms/processes should be ignored, as money is often required to get things moving. Financial support, however, does not have to come from a donor, as stakeholders may support the work financially themselves (Mawingu Agribusiness Innovation Platform, Kenya; Moringa, Malawi; Cassava and sweet potato, Malawi). The course, therefore, needs to be strengthened to support students in how to deal with the challenges of funding, so as to make their platforms (or other activities) viable in the long term.

Suggestions were also made to compress the GO4IT mid-career course modules into smaller blocks. Some universities changed the way the course was arranged, from four blocks lasting one week each, to two blocks of two weeks. The clustering of blocks was necessary for logistical reasons, but removing staff for such a long duration is not always appreciated by employers. At the same time, some course participants mentioned that by clustering blocks into shorter periods, the universities often put the quality of the content (as well as the understanding of trainees) at risk. The more rushed, the more confusing the content becomes and the more problems students face later when working on the ground.

GO4IT course participants also observed that joint supervision of their assignments by the university and their employer was appreciated, and led to joint learning. But they also called for interaction between trainees during the practical learning intervals to be improved.

### Three years later...

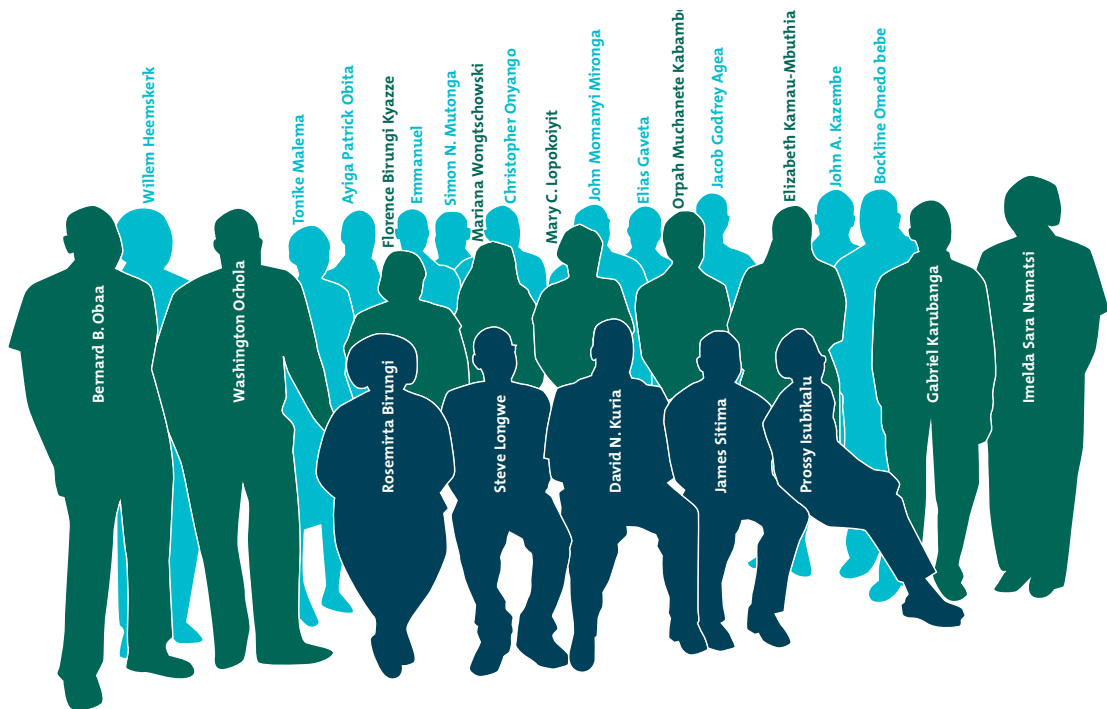
When we (RUFORUM, KIT, Egerton University, LUANAR and Makerere University) formed a partnership to design and implement the GO4IT project, the idea was to plant a seed of change in the agricultural sector. We were ambitious: we wanted to change the way mid-career professionals (researchers, extensionists, lecturers) would look at agricultural development. We envisaged a transformation: those trained would carry out their jobs in a completely different manner, with more attention to the roles, interests and knowledge of different partners in their sector. The trainees would become ‘innovation brokers’.

All the experiences described showed that we have been moving in the right direction. Sometimes this has been slowly, with GO4IT course participants making small steps, but at other

times big strides were made, with trainees challenging every part of their previous roles. The word 'innovation' enlightened some and confused others. Some saw innovation as implementing new technologies, others as a whole new way of working.

We were certainly ambitious but change will not happen in just one day. Three years later, we share a conviction that we have moved forward. The GO4IT project has made sure the seeds of change planted by the project – and other initiatives to come – grow in an environment where lecturers and employers are eager to learn together. They are open to new ideas, and are ready to be challenged and to change – one step at a time.

# Contributors' profiles





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Jacob is a professor of applied ethnobotany and food security in the Department of Extension and Innovation Studies, at Makerere University. He was born and raised in a rural area in northern Uganda. He has experience in training, outreach, research and consultancy activities and has published many books, book chapters, and peer reviewed research articles. Jacob's particular research interest is in ethnozoology, agroforestry/farm development, rural development, and policy changes and institutional reforms that impact the livelihood outcomes of the rural poor.

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Bebe is an associate professor of livestock production systems at Egerton University. He has professional experience of working in livestock development and livestock value chains, in higher education sector programmes and agricultural research systems. Bebe's research interests surround the sustainability of pastoral and smallholder livestock systems, adaptive capacity of pastoral and smallholder livestock systems to climate change, and water use management within livestock systems. He is a consultant in livestock development and policy formulation, and livestock value chain analysis and development, for national and international organizations, and has published widely on livestock production science.

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Rosemirta is a programme manager with AFID. She is currently pursuing a PhD in agricultural and rural innovation with Makerere University, and is particularly interested in researching agricultural product development for market access. Her expertise is in agricultural and rural development projects at community level within Eastern and Central African countries. She has close to 12 years' experience in capacity building, research, and strategic partnerships surrounding livestock, agriculture, gender and water, for food and income security.

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Elias coordinates the agriculture and natural resource management activities under the WALA programme. His expertise is in conservation agriculture and catchment conservation but he has also worked with cereal and tuber seed multiplication and has contributed to the development of extension approaches within the programme. Over the past two years he has published papers on rainwater harvesting and winter cropping, through the Water Services Association of Malawi and the National Conservation Agriculture Task Force. Elias is also a LEAD fellow (Leadership in Environment and Development).

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Willem is a management and organizational specialist concerning agricultural service delivery, farmer and community empowerment, and local governance – particularly in research and extension, in both the public and private sectors. He has 34 years of experience (20 years based in sub-Saharan Africa and 14 years of short-term assignments, based in The Netherlands) in the management of organizational and institutional innovation at the local level, mainly in Africa, but also in Latin America and Asia. Willem has expertise in facilitating demand-driven and client-oriented service delivery with a multi-stakeholder and innovation systems perspective.

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Prossy is a lecturer at Makerere University and is engaged in local and regional capacity development projects that are biased towards agricultural and rural development initiatives. She is an alumnus of the Participatory Approaches and Up-scaling programme of the Technology and Agrarian Chair group in Wageningen. She is the coordinator of the GO4IT project in Makerere and champions the up-scaling of personal mastery and social skills, alongside experiential learning, into the university's curriculum and beyond. Prossy has (co)published a number of

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Orpah has been the deputy head of the Home Economics and Human Nutrition Department for the past three years and is also a lecturer in HIV and AIDS and family extension education. She has worked for Bunda College for over 20 years, particularly on HIV-related issues and behavioural change. Orpah's current focus is on outreach and community empowerment through knowledge and skills transfer. She has been actively involved in organizing field days and national agricultural shows and has worked hand-in-hand with the head of her department and other colleagues in the establishment of a new Faculty of Food and Human Sciences.

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Gabriel is a lecturer, responsible for teaching and supervising students with an interest in agricultural communication and extension methods, agricultural journalism, agricultural documentation and dissemination, development of sustainable rural institutions/organizations, experiential learning projects and rural sociology. Gabriel also serves as the coordinator for the university's external BSc in Agricultural and Rural Innovation programme, as well as coordinating Farmer Voice Radio programmes in the college. He has expertise in agricultural extension-based approaches to improve service delivery, specifically in plant health clinics. Currently, his focus is on communication of agricultural innovation for improved delivery of extension services.

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Florence is a lecturer in social research methods, statistics, and programme planning at both undergraduate and graduate level. She was a core member of the team that reviewed and developed the curriculum and teaching materials for the BSc in Agricultural and Rural Innovations and the university's PhD in Agricultural and Rural Innovation. Florence has experience in research and consultancy work with national and international organizations. She holds a PhD in Agricultural Education from Ohio State University, with specific emphasis on human community and resource development, statistics and research methodology. Florence also holds a Bachelor of Science in Agriculture and a MSc in Agricultural Economics, both from Makerere University.

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John is an expert in ecology and is administrative head of the Department of Natural Resources under the Faculty of Environmental Sciences in LUANAR. For the past decade he has been lecturing in the field of ecology and natural resource management. His research has focused on understanding the complex dynamics of socio-ecological systems of production environments and how these affect the food security of smallholder farmers in developing countries. John provides consulting services in policy to guide and assist agricultural, environmental and development agencies, at national, sub-regional and regional levels, to more effectively integrate environment into policies and programmes across a range of sectors.

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David is a principal agricultural officer with the Ministry of Agriculture in Kenya and is the officer in charge of Ol'Joro Orok Agricultural Training Centre. His expertise is in horticultural crop production and he has more than 20 years of experience. David has worked in various counties in Kenya as an agricultural extension service provider. He has written various technological innovation works on subjects such as greenhouse tomato growing, seed potato storage and mud tank water harvesting techniques. David was also among the authors of a guide for developing and managing agricultural innovation platforms, organized by the Australian Centre for International Agricultural Research (ACIAR). His current focus is on agricultural extension service delivery through agricultural innovation platforms in Kenya.

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Simon is a lecturer on communication skills, communication technology and communication for innovation. He has more than 20 years of experience in teaching and facilitating learning among a wide range of students, both in agriculture and other disciplines, in communication related courses at the university. Simon's current focus is agricultural innovation systems and systems thinking.



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Christopher is a professor in agricultural extension. He teaches and conducts research in a wide range of agricultural and rural development related courses. He has many years of experience in teaching and facilitating learning among undergraduate and postgraduate students. Christopher has been the deputy vice chancellor in academic affairs and research and extension. He has also worked as a senior civil servant in the Ministry of Science and Technology. He has published widely on agricultural extension related issues and his current focus is on comparative systems in agricultural extension, planning, and monitoring and evaluation.

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James has a Master of Education in Curriculum and Instruction, a University Certificate of Education and a Bachelor of Arts Degree, as well as other professional certificates. He has initiated and facilitated the development of a number of undergraduate and postgraduate programmes and has been a GO4IT team leader, a department head at Bunda College and other colleges, deputy head teacher in secondary schools, and an examiner for the Malawi National Examination Board. James has published several instructional materials for universities and secondary schools in the field of agricultural education and linguistics.

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Mariana is a Brazilian agronomist with an MSc in agricultural knowledge systems from Wageningen University in The Netherlands. Between 2003 and 2005, she worked as a policy officer for the Dutch Ministry of Foreign Affairs, where she managed and supervised several projects on agriculture, natural resource management, biodiversity and indigenous peoples. Until 2011, she worked with the ETC foundation, a Dutch-based NGO, where she was involved in and managed several programmes. One of them, Farmer Access to Innovation Resources, focused on piloting local innovation support funds in eight countries in Africa and Asia, facilitating learning among the countries and the projects' many partners. In her current position at KIT, she focuses on agricultural innovation and market-oriented advisory services.

# Changing agricultural education from within

## LESSONS AND CHALLENGES FROM THE GO4IT PROGRAMME

African agriculture is rapidly changing, in response to globalisation, population growth, urbanization and climate change. This creates opportunities for smallholder farmers to intensify their production and become more market-oriented. But how can this process of change best be supported, to achieve profitable and sustainable small-scale farming systems, fit for the future?

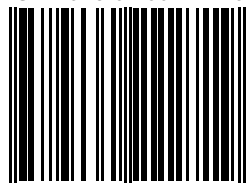
Modern agricultural advisors are certainly one requirement, with the ability to facilitate change in farming business practices. But building a generation of modern agricultural advisors depends on new, demand-driven, tertiary agricultural education and training programmes, designed to produce graduates with the capacity to catalyse innovation. African universities are well placed to meet this need, by putting the facilitation of agricultural innovation and business development at the heart of their educational programmes.

Under the GO4IT (Graduate Opportunities for Innovation and Transformation) project, Egerton University (Kenya), the Lilongwe University of Agriculture and Natural Resources (Malawi) and Makerere University (Uganda) challenged and changed their teaching, research and outreach practices to produce fit-for-purpose graduates with the capacity to catalyse agricultural innovation. This book illustrates how the development and implementation of a short course for mid-career professionals brought agricultural reality into the universities, a process which was supported by Regional Universities Forum for Capacity Building in Agriculture (RUFORUM (Uganda) and the Royal Tropical Institute (KIT) (The Netherlands). The GO4IT course transformed the three universities from within and improved their contribution to agricultural innovation, by producing better equipped agricultural advisors.



Royal Tropical Institute

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