

## Africa RISING –NAFAKA partnership benefits over 50k households in Tanzania, exceeding targets

The partnership between two projects funded by [USAID](#), [Africa RISING](#), and NAFAKA, and whose goal is to promote integrated packages of technologies to smallholder farmers to sustainably increase their agricultural production, has benefited over 50,000 rural households in Tanzania. A further 58,000 hectares of farm land are under the improved technologies or management practices introduced by this initiative. In both cases the project has way exceeded its target.

This was reported by [Haroon Sseguya](#), IITA Technology Scaling Specialist, in a seminar on the two projects at the IITA Eastern Africa hub in Dar es Salaam, Tanzania. The presentation was titled

‘Scaling sustainable agricultural intensification technologies in Tanzania: Achievements, lessons and plans for future IITA interventions.’

The efficacy of the technologies being promoted to increase agricultural productivity while meeting high standards for sustainability in environmental, economic, and social terms, had been proven through research under the first phase of the Africa RISING project.

The technologies included new improved new high-yielding, drought-tolerant varieties of food crops (maize, legumes, rice, and vegetables) and

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COMING SOON!



**Inauguration and Planning Meeting**  
Conference Center, IITA  
Ibadan, Nigeria  
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## Scientist emphasizes lessons from IITA’s efforts to tackle deadly crop disease outbreaks across the continent

The destructive impact of some of the pest and disease outbreaks witnessed in Africa could have been prevented as agriculture technologies are available to stop their entry, to prevent disease outbreaks in case of entry, and to limit damage to crops in case of establishment.

This was said by [George Mahuku](#), a plant pathologist at IITA-Tanzania, while giving an overview of IITA’s efforts to tackle pests and diseases during his contract review seminar at IITA-Tanzania, at the end of 2017.

According to Mahuku, insufficient investment in resources to stop epidemics, delayed diagnostics, lack

of proper channels to recognize major disease outbreaks, limited surveys to assess the extent of damage, and poor adoption of control technologies are some of the reasons that led to failure to control new pest and disease outbreaks in many countries in sub-Saharan Africa.

He added that partnership and coordination among stakeholders was also important to effectively manage disease outbreaks. So was having a good strategy in place and the financial resources to implement it.

Mahuku noted IITA has been at the forefront of efforts to control new outbreaks of pests and diseases in

important food crops such as maize, banana, and soybean in the continent to reduce their impact on food security and the livelihoods of smallholder farmers.

For banana, an important food and income crop for millions of smallholder farmers, IITA has been tackling Banana Bacterial Wilt (XW), Banana Bunchy top, Banana Sigatoka, and more recently, Banana Fusarium wilt (Foc TR4), which was discovered in Africa for the first time in Nampula, Mozambique.

The disease was reported in Nampula in 2013 on a commercial farm of 1,200 ha planted with a Cavendish type banana. Since then, more than a

million plants equivalent to over US\$30 million have been lost. In addition, 50,000 smallholder banana farmers in Nampula are reported to be at risk and 100 million more if the disease escapes from Mozambique, potentially leading to over US\$4.3 billion losses in food security and banana biodiversity.

According to Mahuku, much effort is under way to contain the disease in the two commercial farms. Awareness creation has been taking place and appropriate protocols such as rapid screening of germplasm to expedite the breeding of resistant banana are being developed.

A good strategy to contain pest and disease outbreaks should include prevention activities such as surveillance, early detection, and taking immediate measures to stop further spread. Deployment and dissemination of appropriate technologies and tools such as diagnostic tools for rapid identification of pests and diseases and integrated pest management



*George Mahuku giving a seminar presentation.*

options, development of improved, resistant varieties, and upscaling of quality seed production technologies are also needed. The strategy should also include creating awareness and networking for surveillance and building both human and infrastructural capacity.

## **Africa RISING –NAFAKA partnership benefits over 50k... Continued from page 1**

best-bet agronomic management packages including appropriate use of external inputs such as fertilizers, and improved postharvest management technologies.

The project also looked at protection of land and water resources including soil and water management, tackling soil acidity/salinity, and introducing and promoting improved postharvest management technologies to ensure the products meet quality standards of markets.

“Research findings show that over 30% of cereals are lost due to poor postharvest management. The impacts of postharvest losses cut across the social, economic and political aspects of farmers’ welfare. They demotivate farmers from investing in improved technologies to increase production and results in low earning and food insecurity,” says Sseguya.

The project introduced improved technologies such as use of motorized



*IITA Technology Scaling Specialist Haroon Sseguya.*

shelling machines, Collapsible Dryer Cases (CDC) for drying, and hermetic bags for grain storage. It also included [Aflasafe](#), a safe natural biocontrol solution for aflatoxin contamination developed by IITA.

On the lessons learned in efforts to disseminate these packages of technologies, Sseguya said investing in building capacities of farmers to adopt these technologies was key. The initiative conducted a lot of training for farmers including working with lead farmers who in turn trained other farmers, thus enhancing the capacities of local communities.

“Partnerships were also central to scaling sustainable intensification innovations. The partnerships needed to be flexible, depending on the task at hand,” he said. They were defined by shared accountability, constant dialogue, joint learning, and joint mobilization of resources, and involved a range of partners.

Sseguya said that the technologies also needed to be suitable to the agroecological and socioeconomic conditions as well as documented through manuals and protocols that are easy for the farmers to follow.

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# In focus: Forest Unit Manager discusses her experience as project comes to an end

[Deni Bown](#), the Forest Unit Manager, is a writer, botanist, photographer, publisher, and consultant from Norfolk, England, who has a special interest in herbs, trees, gardening, and natural history. She has traveled to remote places worldwide for research to write her many books on plants. This prompted her to take up the position as a part-time volunteer in the Biodiversity and Forest Unit of IITA-Ibadan, where she became the Manager two years later.

When asked about her achievements, she stated: "Within a period of seven years as Project Leader, I achieved the following with the help of my dedicated staff and partners: I transformed the nursery, which was largely set up by IITA from what it used to be to what it is now—the best nursery in Nigeria not only for ornamental plants and the gardens but especially for indigenous trees and medicinal plants.

Another milestone was the setting up of a national botanical garden in December 2016. We invited the Yorubas from villages around IITA and its perimeter that have never been to IITA, to educate and enlighten them on the importance of natural resources. After the project had elapsed in 2014, my contract was renewed for 2 years. During that time frame we did a lot, especially in the areas of biodiversity monitoring and forest conservation.

I also initiated a new project, which was planting trees. Looking at the situation in



*Bown is a self-taught botanist and long-term researcher.*

Nigeria, forest cover is down to 4% with forest clearing, and everybody knows that the loss of forest will continue to be a critical issue if not properly addressed; today the loss of forest is a significant factor in global warming and climate mitigation.

Another milestone was the launch of the written protocols as a manual for tree propagation, which is free and downloadable from the Forest Unit website. There are few ethnobotanical gardens in Nigeria and the manual for tree propagation is the first of its kind.

The Forest Unit has restored the Arboretum in the IITA-Ibadan campus as a Tree Heritage Park for the conservation of rare and endangered Nigerian trees. As time went on, the

first forest school in Nigeria kicked off as students, families, and groups had the opportunity to come and have a glimpse of the natural environment, ranging from fishing to bird watching and identification. A citizen science initiative club comprising more than 30 members was also set up to enlighten people about birds, wildlife, and its habitats".

In an interview with Bown, the talented horticulturist highlighted the challenges she encountered: "The best way to cope with challenges is when you have your own experience. Initially, my biggest challenge was the language and cultural barrier owing to the fact that I am a foreigner and also it was my first time coming to Nigeria. Amidst all this, I enjoyed having many people around from different nationalities, races, religions, and family backgrounds. From my experience, the best way to tackle challenges is to stay focused and keep learning."

To enhance the sustainability of the project, Bown discussed some of the measures she took during its life span. "Management has assured me that both the Tree Heritage Park and the School Forest will be maintained and continued as campus assets, which will be used by all people, not only campus residents or the Institute's staff. We have a lot of interest in the tree school and we take groups into the forest, including visitors to IITA. It is a unique, hands-on experience," she narrated.

While appreciating IITA Management and staff for their support and commitment, Bown advised, "I think the most important thing for IITA and staff as a whole is to realize the value of the natural environment. The wealth of the nation is through resources and I believe the management of natural resources faces challenges on water shift and deforestation. If these are not addressed, realizing the value of natural resources and its practical value to people, the natural resources will become extinct. I strongly hope that IITA will help sustain and improve the already laid foundation. I think we need to realize the urgency of this. Yes, we need research but far more than a person doing research, you need a thousand people on the ground doing something about it, starting to propagate, protect, replant."



*Forest Unit open day held in October 017.*

## IITA scientist recognized as one of the most published scholars in Nigeria

On 23 November 2017, the Director, Research for Development, West Africa, [Dr Robert Asiedu](#), was cited as one of 28 most published scholars in Nigeria on the [Opinions.NG website](#). Asiedu, who is also a chartered biologist and who leads the Institute's work on Biotechnology and Crop Improvement, was recognized not only because he is a scientist from an outstanding institute, but also because he was the only scholar out of the 28 from the field of agriculture.

Asiedu has 108 publications and 901 total citations of 533 documents. The publication range is 1990 to the present, and his h-index is 16. (The h-index is an index to quantify an individual's research output. The publication record of an individual and the citation record are used to derive



*Dr Asiedu has been with IITA since 1989.*

the h-index. When a scholar has an h-index of 10, it means that 10 papers out of his/her publications have at least 10 citations. – *from Opinions.NG*)

The “Most published scholars in Nigeria list” was collated by [Mohammed D. Aminu](#), a PhD researcher at Cranfield University, UK.

According to Aminu, “The collation of researchers’ total publications was based on several criteria including being resident in Nigeria only, being currently affiliated to institutions within Nigeria, and a Scopus record of 100 publications and above.” The decision to collate the list was influenced by the challenges of being a scholar and researcher in Nigeria, where scholars are unable to compete favorably with other scholars from around the world. However, some scholars in Nigeria defy the odds and have published in some of the most notable academic journals around the world.

## Chemists and biochemists trained on chromatography and mass spectrometry in IITA-Cameroon

On 27–29 December 2017, the Congo Basin Institute offered a training workshop on chromatography and mass spectrometry (MS). The entire course was taught by [Prof Kym Faull](#) of University of California, Los Angeles, and was facilitated by IITA (principally Rose Ndango, manager of the analytical laboratory). The course was attended by 36 participants -- postgraduate students, lecturers, researchers, and

technicians from universities and research institutions in Cameroon.

The course introduced participants to the principles and practices of liquid chromatography and mass spectrometry to help them acquire the ability to apply the technology to identify and quantify a wide range of molecules including free amino acids, carbohydrates, fatty acids, steroids,

pesticides, sugars, antibiotics, other biological metabolites, peptides, and proteins.

Lecture topics included Introduction to mass spectrometry: Definitions and principles, Combined gas chromatography/electron ionization mass spectrometry (GC/MS, Combined liquid chromatography/electrospray ionization mass spectrometry (LC/MS), Different types of mass spectrometers, Tandem mass spectrometry (MS/MS) I & II, and Identification of specific compounds such as proteins.

### Testimony of a participant - Minyem Aude, a pharmacist

I work on plants while doing a project on nursery in pharmacy. I formulated a drug used to treat Tinea infection. I was interested in the training because I wanted to have some skills and techniques that can be used to identify the compounds that are active in the drug. The lecturer's experience and the many examples he used helped me a lot, but I must also admit that I came with the expectation to do more practicals. If possible, I would like to get more practical knowledge to apply to my job.



*Prof Kym Faull of UCLA.*

# IITA Benin station celebrates IITA50

On 14 and 15 December 2017, IITA Benin Station marked the Institute's 50<sup>th</sup> anniversary. The event was well attended by staff, family, stakeholders, and friends of the station.

In his presentation, [Manuel Tamò](#), the Benin Country Representative, stated that the station—since its inception in 1983—has continued to be a catalyst in transforming African agriculture. He encouraged staff and youth to be

more committed as IITA has already started transforming itself, its research agenda and organizational structure, particularly with the establishment of the Partnership for Development Directorate (P4D).

[Rousseau Djouaka](#), coordinator of the Agroecohealth platform, gave a presentation on the One Health concept where he highlighted the interconnections between the four

pillars, namely: soil health, animal health, water health, and plant health for improved human health.

[Sylvia Oyinlola](#), Regional Administrator for West Africa, while celebrating with Benin station colleagues, encouraged them, saying: "I thank the management and staff of IITA Benin station in their effort towards ensuring that IITA Benin continues to play a leading role in transforming African agriculture."



Group photo of IITA Benin staff taken during the IITA50 celebration.

## Events

- **TAAT inauguration and planning workshop**, 22–24 January, IITA, Ibadan, Nigeria
- **CIALCA Open Data Kit training workshop**, 23–25 January, Nairobi, Kenya
- **ACAI Strategic meeting**, 29 January – 2 February, Nairobi, Kenya
- **CLiP Annual review and Planning meeting**, 29–31 January, Bukavu, DRC
- **Nairobi Innovation Week**, 5–9 March, The Great Court, University of Nairobi, Nairobi, Kenya
- **2018 Annual Review and Work Planning Meeting**, Cassava Weed Management Project, 19 – 20 March, Conference Center, IITA, Ibadan
- **IITA Board Meeting**, 24–26 April, [Center for Development Research of Bonn University](#) (ZEF), Bonn, Germany
- **Special event on “African agricultural transformation: The IITA Agripreneur Approach to Job Creation”**, 26 April, ZEF, Bonn, Germany