

IITA, Syngenta collaborate to boost food production in Nigeria

IITA and Syngenta—a leading company dedicated to bringing plant potential to life through world-class science—have officially launched a 3-year partnership to transfer appropriate technologies across to farmers producing maize and vegetables, accelerate food production in Nigeria, increase incomes, and alleviate poverty. The partnership was sealed during a maize field day at Shika farms in Zaria, Kaduna State, on 8 October by Dr Dashiell, IITA’s Deputy Director General for Partnerships and Capacity Development, and Dimitri Pauwels, Head, Africa Venture Team from the Syngenta side.

Over 60 collaborators attended the event, comprising scientists, partners in the public and private sectors, and retailers as well as Tambaya Nomau and Alhaji Shehu Lawal—the two lead Syngenta farmers who represent farmers’ groups, the target beneficiaries.

In the partnership agreement, IITA will play the lead role in providing professional development and training for Syngenta staff. The two organizations will then identify, adapt, and make high-yielding and superior maize and vegetable hybrids available to the Nigerian farmers. They are also partnering to improve and promote cost-effective production packages for maize, tomato, sweet pepper, and cabbage and increase farmers’ yields and incomes from cultivating these crops.



IITA DDG Partnerships and Capacity Development, Dr Kenton Dashiell (left) seal the partnership with Syngenta’s Dimitri Pauwels, Head Africa Venture Team (right).

Dr Shachi Sharma, Syngenta Country Director, in his opening remarks, noted specifically the novel work of IITA’s breeders, Drs Baffour Badu-Apraku, Sam Ajala, and Baffour Asafo-Adjei, in the collaboration. He said that the partnership is working to fill the three major gaps (lack of skills, non-availability of good quality inputs, and poor market access), which affect the Nigerian agricultural value chain.

Dimitri said that Syngenta would use this platform to reach out to and train partners and farmers to be able to employ and adapt available technologies and

make them happier and more productive people.

“The partnership that we have announced and sealed with IITA today is crucial to us. We need to be able to reach many farmers, bringing to them technologies which are often complicated. We will leverage on the presence and expertise of IITA to help us optimize and fine-tune solutions for farmers.” He added, “Our expectation is that farmers will work with the same amount of energy as they are currently doing but with greater benefits.”

Speaking at the event, Badu-Apraku said that efforts are ongoing to oust an important maize disease that currently plagues maize fields—the highland blight (*Helminthosporium turcicum*)—a new disease which in the last 4 years has occurred in the lowlands. He said that IITA has identified genetic materials which possess resistance to these pathogens and will incorporate *turcicum* resistance genes into promising varieties and the hybrids that are being promoted.

After the maize field day, a visit was organized to the Drought Tolerant Maize for Africa (DTMA) research fields of IAR, Samaru, with ongoing trials to identify and select outstanding early and extra-early maturing maize hybrids and various seed companies within the Kaduna metropolis.



Participants in the maize field day.

Got a story to share? Please email it with photos and captions every Wednesday to Andrea Gros (a.gros@cgiar.org), Katherine Lopez (k.lopez@cgiar.org), Jeffrey T. Oliver (j.oliver@cgiar.org), Catherine Njuguna (c.njuguna@cgiar.org), or Adaobi Umeokoro (a.umeokoro@cgiar.org).

New project initiated to boost cooking banana production in Uganda and Tanzania

Millions of smallholder farmers in Tanzania and Uganda whose livelihoods and food security are greatly threatened by pests and diseases attacking the banana crop are set to benefit from a new project seeking to speed up efforts to provide them with improved high-yielding and disease-resistant hybrid varieties.

Banana is very important in these two countries and indeed the whole of the East and Central Africa region where over half of the permanent crop area is under banana cultivation. The region also cultivates over 50% of all banana grown in Africa, valued at US\$4.3 billion annually.

However, production has stagnated at 9% of its potential yield with pests and diseases contributing significantly to the problem. They pose a particularly great threat to the future sustainability of banana production.

The 5-year project aims to scale up and speed up existing breeding efforts dramatically in the two countries to develop and deliver to farmers higher yielding cooking banana hybrids with resistance to the fungal diseases, black sigatoka and fusarium, and two major pests--weevils and nematodes.

The project has been funded by the Bill & Melinda Gates Foundation with US\$13.8 million and will also receive substantial co-financing from IITA, Bioversity International, and the CGIAR Research Program on Roots, Tubers and Bananas.

Prof Rony Swennen is the head of IITA's banana breeding and leader of this initiative.

"One of the most effective ways to increase production of any crop," he said, "is the cultivation by farmers of improved high-yielding varieties. Through this new project we will expand the ongoing breeding efforts in Uganda and Tanzania

by developing research capacity and bringing expertise from other countries. Hence, farmers will get faster access to hybrids which are high yielding and resistant to the major diseases and pests and at the same time are acceptable to the consumer."

The project aims at developing hybrids which will have, at the minimum, 30% higher yield and 50% higher resistance to at least three of the target pests and diseases compared with the current varieties grown by the farmers under the same on-farm conditions. They will also meet over 90% of the quality traits for consumers found in the current cultivars. These hybrids will therefore lead to more sustainable increases in food security and income generation for smallholders in the region.

The project will be coordinated by IITA and co-executed by 12 partners. The major partners are the National Agriculture Research Organization (NARO) of Uganda and the Agriculture Research Institute (ARI) in Tanzania, with Bioversity International. It will also involve six universities (University of Malaya - Malaysia, Swedish University of Agricultural Sciences (SLU)-Sweden, Stellenbosch University-South Africa, Cornell University-USA, KU Leuven-Belgium, and University of Queensland-Australia) and also the national breeding programs of the Brazilian Enterprise for Agricultural Research (EMBRAPA) and the Indian National Research Centre for Banana (NRCB).

This project will substantially strengthen and expand existing breeding activities in Tanzania and Uganda by building a breeding and selection pipeline. This will increase the pace and efficiency of breeding by identifying methods to



The new project will develop hybrids for Uganda and Tanzania with higher yields and resistance to three target pests and diseases.

improve the production of hybrid seeds and developing molecular markers for the early selection for priority traits.

It will include the identification of gene sequences that provide resistance to target pests and diseases. This will be complemented by improved characterization of the spread and virulence of pests and diseases at farmers' testing sites and the development and application of faster bioassay screens.

The project builds on an earlier strong collaboration between IITA and NARO that culminated in the development of the NARITA varieties, the first 26 high yielding and disease resistant hybrids (<http://goo.gl/7YhHqB>). The project will support the on-farm testing of these hybrids in the two countries through gender-sensitive participatory varietal selection.

This project will both improve the technical capacity of the breeding programs in the region and strengthen the partnership with farmers. It will also develop local human capacity by supporting 8 PhD programs and 5 MSC research projects.

Update on Ebola Virus Disease

Ebola is now a global concern! The IITA Medical Unit has provided the following update on the Ebola Virus Disease (EVD):

1. Nigeria has zero case of EVD since 6 September 2014; today marks the full containment related to the single case recorded in Senegal.
2. The EVD cases in Liberia (4,249 cases; 2,458 deaths) and Sierra

Leone (3,252 cases; 1,183 deaths) have continued to increase.

3. USA had 2 additional cases in the last 1 week, with one death (the imported case of Thomas Duncan from Liberia).
4. The case in Spain is still one.

Everyone is therefore asked to sustain the adoption of relevant preventive measures that had been put in place.



IITA supports efforts to control deadly maize disease in northern Tanzania

IITA has set up a facility to detect Maize Lethal Necrosis Disease (MLND) at the Selian Agricultural Research Institute (SARI) in Arusha in Northern Tanzania. This is part of efforts to control the disease which is threatening maize production in the region. The facility will serve the Northern region in Tanzania, an important maize growing area in the country.

The facility, excluding chemicals and consumables costs an estimated \$15,000 and was set up as part of the IITA-led Africa RISING project which seeks to sustainably intensify productivity of small-holder farmers in maize-based systems. In addition to serving the Africa RISING actions sites in Tanzania and geographic regions under SARI, the facility will receive samples from any part of Tanzania for testing.

According to Dr Lava Kumar, the facility equipped with enzyme-linked immunosorbent assay (ELISA) diagnostic tool will strengthen partners' capacity to diagnose the maize lethal necrosis in the region. More specifically, "It is



A maize farmer taking part in the Africa RISING research.

a significant achievement for IITA to establish such a facility for application of 'diagnostic technology' developed within the Africa RISING project," said Kumar.

MLND is caused by dual infection, and subsequent synergistic interaction within the host of two species--the Maize

chlorotic mottle virus (MCMoV, genus Machlomovirus) and Sugarcane mosaic virus (SCMV, genus Potyvirus). Single infection of MCMoV or SCMV results in mosaic or mottling symptoms. MCMoV is a new virus in the continent, whereas the SCMV is an endemic virus.

Diagnostic tools for both SCMV and MCMoV are required for monitoring MLND spread and to host resistance.

He added that currently the samples are being sent to Dar es Salaam or out of the country for testing for the viruses. This is costly and time consuming.

"When it becomes fully functional, this facility can dramatically influence the research programs on MLN in the northern region, especially Babati and Arusha, which are hotspots for MLN," Kumar explained.

Kumar also added that the tool can also be used as a platform for training national agricultural research systems (NARS) partners. The next action step will be the training of researchers to use the facility and its equipment.

Swedish Ambassador to Nigeria visits IITA



A. Alonge, Plant Manager of NoduMax and GoSeed, IITA Business Incubation Platform, Ibadan (right), explains how Nodumax is produced to the Swedish Ambassador Mr Svante Kilander (center).

His Excellency Mr Svante Kilander, the Swedish Ambassador to Ghana and Nigeria and Swedish Representative to ECOWAS, paid a courtesy visit to IITA, Ibadan on 9-10 October.

During the visit, he noted how delighted he was to be at IITA and said that the Swedish government would explore possible options for collaboration with the Institute. "At this time, I am pleased to see

the good work that is ongoing here as well as the research breakthroughs and outputs that IITA has achieved in the recent past. We will definitely work towards establishing collaborative programs at some time in the nearest future."

The Ambassador was received by Acting DG, Dr Kenton Dashiell, DDG, Partnerships & Capacity Development, Dr Hillbur Ylva, DDG Research for Development, and Dr Roing De Nowina, Kristina, IITA Proposal Development Coordinator.

He also seized the opportunity to visit the researchers in the Department of Sociology, Faculty of Social Sciences, University of Ibadan, where he was received by the Head of Department, Prof. Jegede.

Dr Per Hillbur (leftmost in photo) was his companion and guide throughout the visit.

Safety Week in IITA

IITA is committed to ensure safety at work and takes necessary measures to ensure safety of all staff in the work environment in all IITA locations across Africa. "Be Aware, Be Safe" is the

theme of Safety Week 2014, which runs 20-24 October. The activity aims to raise awareness among staff about occupational risks, and the simple measures they can take to reduce those risks for safer and

healthier lives. At headquarters, Safety Week 2014 promises to be full of fun and educational activities. Everybody is enjoined to take part in the activities!

DDG R4D wraps up visit of Eastern Africa hub – Part 2

The second leg of Dr Ylva Hillbur's tour of IITA's Eastern Africa hub in Tanzania on 21–29 September brought her to the Lake Zone, Arusha and Coast regions, accompanied by the hub's Director, Dr Victor Manyong.

Lake Zone region. The Lake Zone region of Tanzania is one of the important cassava growing areas in the country. It is also one of the hotspots for the two viral diseases ravaging the crop: cassava brown streak disease (CBSD) and cassava mosaic disease (CMD). IITA is working in the region to set up a clean seed system to ensure that farmers have access to virus-free planting material. The DDG's first stop in Tanzania was to visit the project sites. She was accompanied by Victor Manyong and James Legg, a virologist, who is overseeing this work.

She first went to the Agricultural Research Institute (ARI) - Maruku where the project has established a site to clean cassava planting material. She met the Officer in Charge of the station and the scientists, and visited their research activities on banana.

She then proceeded to Kitengule prison farm where clean cassava planting material is being multiplied.

Hillbur also got an opportunity to meet more partners at a dinner.

Arusha. The next visit was to IITA's office in Arusha where the institute's banana research program is based. The program seeks to develop varieties that are resistant to pests and diseases, especially Panama disease (*Fusarium*) which is affecting the crop's production in the area.

Hillbur's first stop was at The World Vegetable Center (AVRDC) where IITA's office in Arusha is based. She met all IITA staff as well as the center's Regional Director, Thomas Dubois. She toured the AVRDC facilities including the screenhouses, labs, and experimental fields. She also visited the banana plots where IITA is carrying out banana breeding activities.

Another stop was the Tengeru Horticultural Research and Training Institute (HORTI) where IITA has banana tissue culture and breeding fields. This was followed by a visit to the Nelson Mandela African Institution of Science and Technology (NM-AIST) where the DDG and the NM-AIST Vice Chancellor, Prof Burton Mwamila, signed an agreement to further strengthen collaboration on agricultural research and capacity building in Tanzania specifically

on banana research.

She was accompanied by Manyong and some of the IITA staff based in Arusha including Bekunda Mateete who is in charge of the IITA-Arusha office, Rony Swennen, banana research lead, and Frederick Baijuka, country coordinator for N2Africa.

A dinner was organized to give Hillbur the opportunity to meet and interact with the IITA staff and partners in Arusha.

Coast region. Hillbur concluded her hub tour with a visit to the Coast region which also includes Dar es Salaam, location of the IITA East Africa hub office. She visited the Mkuranga Agriculture Research Institute and Chambezi Agriculture Research substation, where IITA and national partners carry out breeding work to develop cassava varieties with resistance to both CBSD and CMD. The visit was led by the two cassava breeders in the hub, Edward Kanju and Silver Tumwegamire, and their partners.

At Mkuranga, she also saw the agronomic trials by the Multinational – CGIAR Support to Agricultural Research for Development of Strategic Crops in Africa (SARD-SC) project to develop recommendations for fertilizer use and other good farming practices for increasing cassava production led by Veronica Uzokwe and partners. She also met with some farmers who are carrying out on-farm trials on fertilizer use.

In Mkuranga, she also visited Ukaya farm where the first flash drier in Tanzania has been installed as part of efforts to overcome challenges in processing cassava during the rainy season. These efforts are funded by the Common Funds for Commodities (CFC) and led by the hub's value chain specialist Adebayo Abass and Postdoc

Fellow Marcelo Precoppe.

On the way from Chambezi and the old town of Bagamoyo, Hillbur visited IITA's research efforts to increase production of safe vegetables through the use of healthy planting materials and good agronomic practices including integrated pest management. These efforts are led by Danny Coyne through a BMZ-funded project. The project focuses on the production of high-value vegetables such as tomato, eggplant, and pepper which have a ready market in the urban areas. However, due to the intensified cultivation, they are often attacked by diseases and pests such as nematodes and farmers spray a lot of chemicals as they try to control them. Sometimes, they apply the wrong chemicals and in the wrong doses. She also met some of the farmers involved in the project.

At the hub's office in Dar es Salaam, Hillbur held meetings with the staff and the Agripreneurs.

Her last events were Victor Manyong's contract review as well as a cocktail reception held in her honor and to bid farewell to Fen Beed who was leaving the institute. The reception was attended by many IITA partners and all the staff of the institute.

Speaking at the cocktail, Hillbur said the trip had been very successful and had given her the opportunity to see the hub's activities in the field, to meet partners and beneficiaries, and to get a better understanding of the challenges the scientists faced while implementing their research.

She also thanked all those who had organized the visits to their project sites and the hub director who accompanied her all throughout the visit.



Dr Ylva Hillbur (center) with IITA scientists in Arusha, Tanzania.