IITA news
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IITA to collaborate with partner orgs on wheat production

His Excellency John Donnelly, the Australian High Commissioner to Nigeria, proposed an area of collaboration with the Institute on a recent visit to IITA headquarters. Commissioner Donnelly was accompanied by his spouse, Madame Sunita Kofnala, and Political and Economic Officer Tosin Gbolasere.

Representing IITA Director General Nteranya Sanginga, Deputy Director General for Corporate Services Hilde Koper welcomed the team warmly and introduced them to IITA innovations and activities.

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The Australian High Commissioner (third from left) dicussing collaboration opportunities with the IITA management team and research and delivery colleagues (right).

Forging partnerships with NASC to create a sustainable seed system in Northeast Nigeria

Farmers need timely access to quality seed and other essential agricultural inputs to ensure optimal crop yield contributing to improved household-level food security. According to the International Seed Federation (ISF), "The world's long-term stability rests on several pillars, one of which is food security. Seed is the starting point of the food system, and farmers everywhere depend on access to quality seed to grow healthy crops."

However, according to the Food and Agriculture Organization of the United Nations (FAO), "In many developing countries (including Nigeria), farmers have not yet been able to fully benefit from the advantages of using quality seed due to a combination of factors, including inefficient seed production, distribution, and quality assurance systems, as well as bottlenecks caused by a lack of good seed policy on key issues such as access to credit for inputs."

To adequately address the issue of quality seed and its availability, IITA, under the Feed the Future Nigeria Integrated Agriculture Activity, established an effective partnership in September 2019 with the National Agricultural Seed Council (NASC) of the Federal Ministry of Agriculture and Rural Development (FMARD). NASC oversees the development and regulation of Nigeria's seed industry.

The partnership was established specifically to develop a sustainable seed system that will produce quality seeds and make them available locally in Northeast Nigeria. The Community-Based Seed Enterprise (CBSE), seed companies, IITA, and NASC are the stakeholders of this seed system. Under the partnership, the Activity facilitates the distribution of foundation seeds from IITA and other relevant research institutes to CBSEs, trained and supervised by the Activity and NASC officers to produce seeds certified by NASC.

The partnership facilitates the selection, training, and development of 1,185 community-based seed producers (CBSP) from the Producer Groups of Farmers. It promotes the sustainable production of certified seeds at the community level.

A recent evaluation study—Integrated Agriculture Activity 2021 annual survey—indicated that a total of 33,165 smallholder farmers are accessing 529 tons of certified seeds from established CBSPs across the two implementation states—Adamawa and Borno—through this partnership.

This partnership has created access to high-yielding varieties, developed greater climate resilience, and generated income through employment creation for smallholder farmers.

Activity field officers inspecting one of the IAA-NASC supported seed demonstration plot in Adamawa State, Nigeria.

Got a story to share?

Please send your story with photos and captions every Tuesday to iita-news@cgiar.org or Katherine Lopez (k.lopez@cgiar.org) and Uzoma Agha (u.agha@cgiar.org) for headquarters and Western Africa, Catherine Njuguna (c.njuguna@cgiar.org) for Eastern and Southern Africa, and David Ngome (d.ngome@cgiar.org) for Central Africa.

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Following the introduction, Legume Geneticist and Breeder Christian Fatokun, on behalf of the West African Hub Director Michael Abberton, spoke about IITA Research-for-Development activities in the West Africa hub. He highlighted IITA's work on six mandate crops, cutting across all research areas and IITA's collaboration with different partners in each country and mainstreaming women and youth into its programs.

"Through our plant health laboratory, we also support the Nigerian government to ensure that seeds imported into the country meet international plant quarantine standards," he said.

Head of Project Development and Administration Unit (PDAU) Kayode Awobajo spoke on the support of the Australian Government to IITA over the years. He highlighted the many collaborative activities between IITA and the Australian government, emphasizing the immense support received from the Australian government between 2011 and 2018. "We look forward to furthering collaboration after this visit," he said.

YEASA Coordinator Oluyemi Adunoye explained the activities of IITA Youth Agripreneurs (IYA). She shared how DG Sanginga established IYA to create job opportunities for youth in agriculture. IYA achieves this through training programs that help the youth become employable and successfully start up agribusiness enterprises. "IYA has expanded to 10 countries and has reached out to over 20,000 youths since inception," she said.

IITA Forest Center Manager Adewale Awoyemi spoke on the activities of the IITA Forest project. He mentioned that IITA fully supports natural resources management. Hence, it dedicated about 35% of its land to forest conservation. He added that IITA has a globally recognized site for bird conservation, botanical garden, and Tree Heritage Park, where native trees are propagated. "Through funding from the Direct Aid Program of the Australian embassy, we upgraded our nursery so that we could propagate native trees and upgraded our website to produce a step-by-step manual of propagation for native trees. We also built the first Forest School for students and family groups to learn about the forest environment," he said.

After the presentations, Commissioner Donnelly explained that the purpose of his visit has to do with his Institute's interest in exploring wheat production with IITA. Although wheat is not part of IITA mandate crops, the Australian Commission is proposing collaboration in that area should IITA, through agricultural cooperation, be willing to add wheat to its mandate crops.

Fatokun and Koper responded that since IITA is part of One CGIAR, the Institute can work with ICARDA—a sister Institution in One CGIAR working on wheat, to collaborate on the project. Madame Kofnala also shared her interest in IITA's forest activities.

IITA team with the Australian High Commissioner and his team.

Take responsibility! Stop the spread of COVID-19!

Always clean your hands; practice physical and social distancing; wear face masks properly; avoid crowds and public places; keep a 2-meter distance from the next person; and practice general sanitation and hygiene.

ILRI showcases feed production technology as IITA delegates tour facilities

An IITA delegation led by Deputy Director General, Partnerships for Delivery Kenton Dashiell; with Director of the Development and Delivery Office, Alfred Dixon; and Coordinator of the TAAT Program Management Unit, Chrys Akem, held a collaborative meeting at the International Livestock Research Institute (ILRI) in Ibadan, Nigeria. The delegation embarked on a facility tour after the late October meeting.

In his talk, ILRI Country Representative in Nigeria, Tunde Amole, thanked IITA management for continually supporting ILRI as a sister organization. "Thank you for the pull and push, always including us in your activities, proposals, and plans," he said.

Amole noted that livestock is becoming attractive for youth in agriculture because of its quick turnaround and the current trend of finding a balance between crop and livestock. ILRI utilizes crop residue from plants harvested by farmers to make compact feed for livestock. Citing the massive potential of crop residue to serve as foliage feed for livestock, Amole said, "From a hectare of sorghum, which provides 3–4 tons of grain, we can get 12 tons of fodder that farmers can use to produce feed meal for ruminants and birds."

The ILRI team in Ibadan pelletizes such crop residue and grasses during the rainy season when they are abundant. This technology enables all-year-round feed availability for livestock. Amole and his team are also working on raising improved livestock breeds to meet the meat and dairy needs of the teeming population of Nigerians, especially following the anticipated increased population rise from the COVID-19 pandemic. They cross exotic breeds with local ones that are resilient and adaptive to local climatic conditions to conserve local varieties and, at the same time, improve the pool of genetic breeds available for food.

Top: The IITA team on a tour of ILRI facilities. Bottom: IITA management staff representatives in a collaborative meeting with ILRI Country Representative.

Plant wastes and grasses available as raw materials for the pelletized feed are locally sourced from markets and farms around Ibadan, NIgeria. Data collected in the past year from an emerging fodder market in Akinyele, Ibadan, show that 500 to 600 bundles of fodder grass are brought in for sale every day. With each bundle costing about ₦500 (Nigerian Naira equivalent to about US$1), a fodder market projection of ₦250,000 or roughly $5,000 is recorded, indicating an excellent business to pursue.

Most pelletized livestock feed produced by ILRI contains high-quality cassava peel, one of the most abundant plant waste resources in Nigeria—the highest cassava producer globally. The feed can be further fortified with other nutrient elements to meet specific poultry and ruminant farm needs.

The pelletized feed, when scaled up, will provide a viable alternative to open grazing and migratory livestock herding from the north to the south of Nigeria. It would also promote a symbiotic relationship between both regions: the north would supply livestock to the high-consuming south, while the south would supply packaged feed to the north where demand for it is high. Furthermore, ILRI Ibadan carries out training and capacity development for youth interested in livestock rearing and breeding.

The IITA team toured ILRI's feed production mill, the goat and cow breeding ranch, the poultry farm, and ILRI's grass cultivation field.

Delivering scalable, sustainable fall armyworm technology for TAAT beneficiaries

Fall Armyworm (FAW) is a highly damaging pest to maize. However, in the past five years, it has become a source of concern to smallholder farmers in Africa, who have to devise ways of controlling the pest using chemicals they can hardly afford. The Technologies for African Agricultural Transformation (TAAT) Fall Armyworm Compact is helping smallholder maize farmers combat FAW and sustain production levels in Africa. IITA Entomologist and TAAT FAW Compact Leader Peter Chinwada, in a recent seminar, provided updates on the deliverables, partnerships, successes, challenges, and solutions achieved under the TAAT FAW Compact.

The fall armyworm destroys maize crops.

The Compact operates in nine countries: three in Southern Africa—Malawi, Zambia, Zimbabwe; two in East Africa—Kenya and Uganda; and four in Central and West Africa—Benin, Cameroon, Ghana, and Nigeria. The TAAT FAW Compact has been working closely with the Maize Compact, and together, they have achieved excellent results, says Chinwada.

Since 2018, under Chinwada's leadership, 51.4% more partnerships have been formed. Of the ambitious target of 9 million people to be trained, a substantial number of trainees have been recorded despite COVID-19 restrictions and other limitations hindering training. And 90% of new technologies have been tested for adoption by farmers.

One of the foremost FAW management technologies is a seed treatment chemical deployed in partnership with Syngenta Agro. With this technology, farmers get maize seed already treated with the chemical Fortenza Duo, which means they don't have to treat the seeds on the farm.

The seed companies buy the seed treatment chemical as a twin-pack of commercial products: Fortenza® 600 FS (*cyantraniliprole* 600 g/L) + Cruiser® 600 FS (*thiamethoxam* 600 g/L). Cruiser controls root and sucking pests while Fortenza controls FAW and other leaf-chewing aerial pests. Fortenza is transmitted systemically from the roots to the leaves and thus minimizes damage to leaves during the maize seedling stage. Larvae that feed on the maize leaves will eventually crawl away when they find the leaf material unpalatable and eventually die off.

Despite the chemical being proactively deployed before full registration in Zambia and Zimbabwe, validation trials were the first step taken before scaling because IITA first needed to know how the product would perform. The validation trials conducted by the TAAT Fall Armyworm Compact found that resultant maize plants from Fortenza Duo-treated seeds were greener, fast growing, and relatively taller than other plants from untreated seed. This reduced the number of subsequent chemical sprays needed by farmers.

The TAAT Fall Armyworm Compact has developed technologies for very low infestations of FAW and others for heavy and medium infestations. Intercropping maize with other legume crops has also been encouraged among farmers to smother weeds and fix nitrogen. There are several technologies yet under validation and several others in the scaling phase. Visibility creation and capturing farmers' testimonies are also ongoing in partnership with NARES and other partners.

Chinwada has participated in various initiatives to mobilize financial resources, including the Malawi Digital Plant Health Service and the Global Environmental Facility Grant to the African Development Bank (to be coordinated by IITA).