

## AGRA Board chair, former Ethiopia PM, and Tanzania President tour IITA-Tanzania

[IITA](#)-Tanzania recently hosted the Board Chair of the Alliance for a Green Revolution in Africa (AGRA), former Ethiopian Prime Minister H.E. Hailemariam Desalegn, and the former Tanzania President H.E. Jakaya Kikwete, as well as a board member and senior staff of AGRA. H.E. Desalegn was in the country to familiarize himself with AGRA's work in Tanzania and meet partners, such as IITA.



Plant Health Scientist James Legg (left) receiving H.E. Hailemariam Desalegn and H.E. Jakaya Kikwete at IITA's Molecular lab. Accompanying them is Hub Director Leena Tripathi.

The Director of IITA-Eastern Africa hub, [Leena Tripathi](#), received the delegation. In a brief meeting, she shared IITA's work in Tanzania and Eastern Africa, including projects in collaboration with AGRA.

H.E. Desalegn thanked IITA for hosting AGRA in Tanzania and noted the need to increase collaboration between the two organizations and with One CGIAR.

He also highlighted the importance of advances in science to find solutions to the continent's challenges, especially in gene editing. He emphasized the

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## IITA DG encourages teachers to create agribusiness enterprises

The impact of the IITA youth program [Start Them Early Program \(STEP\)](#) is far reaching; it goes beyond focusing on students alone and influences teachers to make the right entrepreneurial decisions to generate more income for themselves. The communities, by extension, enjoy the intervention because of the numerous benefits from the program, including the provision of pipe-borne water, solar power, bright students, and new agribusiness techniques.



DG Sanginga meeting with the teachers and principal of UMCA, and the Igbeti community members.

On 14 July, IITA Director General [Dr Nteranya Sanginga](#) and the STEP team visited two of the six secondary schools chosen for STEP expansion under the first phase of the STEP-Oyo State Government Project to inspect the progress of the ongoing rehabilitation of facilities. At United Missionary Church of Africa (UMCA) Secondary Grammar School, Igbeti and Iresaadu High School, Iresaadu along Ogbomoso Road, the DG and his team toured the newly built infrastructure as well as the rehabilitated facilities, including the laboratory, Value Addition Center, and Information and Communication Technology (ICT) facility.



DG Sanginga discussing with the teachers, principal, and community members as he toured Iresaadu.

After the tour, the DG proposed a new initiative for teachers to also benefit from the project. He recommended aquaculture for UMCA teachers and goat production for Iresaadu teachers, and suggested that a meeting be fixed to deliberate on and finalize the corporate agribusiness to be established for each group. This initiative is a way of ensuring the sustainability of STEP in those schools beyond the inauguration

of facilities. “This will also keep you busy and innovative as it will educate as well as generate another source of income for you individually and for the school,” he said.

The DG also encouraged the “waste to wealth” initiative that is starting up at UMCA. The teachers working on converting unripe mango, potato, and dung to power will work with Engr Femi Akeredolu, in charge of IITA biogas,

to build capacity and have access to IITA facilities for better production and sustainability.

The teachers, principals, and community members were excited about the new development, primarily because of its benefits to the schools and communities. They appreciated the DG and Governor Seyi Makinde for their efforts in adding value to these communities.

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importance of scientists being at the forefront of communicating the technology and its potential in breeding to the public and not politicians.

After the meeting, the visitors toured the Molecular Biology Lab. [James Legg](#), IITA Plant Health Scientist and Plant Vector Entomologist, and his team described IITA’s research on two deadly viral diseases—cassava mosaic and cassava brown streak, which constrain cassava production in the region.

Massoud Amour, a research assistant, described current work to control the whitefly vector of cassava viruses, using bio-based strategies, including the use of biopesticides and essential oils.

Legg also demonstrated the NURU app that helps farmers diagnose diseases affecting their cassava plants correctly. It was developed by Penn State University/Plant Village and IITA, with support from CGIAR’s BigData Platform and the [Roots, Tubers and Bananas](#) Program.

The dignitaries were impressed with the technology and urged for more efforts between the developers and IITA, working hand-in-hand with national agencies and the Ministry of Agriculture, to popularize this exciting new app in Tanzania and maximize its potential benefits.

H.E. Kikwete’s last visit to IITA’s Dar es Salaam campus was eight years ago when he inaugurated the new science building as the President of the United Republic of Tanzania.

IITA and AGRA have been working together to commercialize cassava in Tanzania, including developing the country’s national cassava strategy. In Uganda and Rwanda, IITA and AGRA are working to create awareness on aflatoxins—the deadly poison produced by the *Aspergillus flavus* fungus and Aflasafe™, the effective biocontrol product developed by the Agricultural Research Service (ARS) of the US Department of Agriculture (USDA) and adapted for Africa by IITA and partners.



Demonstrating the NURU app for diagnosing diseases to H.E. Desalegn and H.E. Kikwete, at IITA’s Molecular lab.

# I want to become a classy farmer—STEP club member

Oluwadamilare Opatotun is the secretary of the [Start Them Early Program \(STEP\)](#) club at Vetland Senior Grammar School in Lagos.

She was one of the panelists that discussed teachers' and students' experiences in teaching and learning agriculture during the I-Youth Connect conference, organized by the Innovative Youth in Agriculture (I-Youth) project in Lagos recently.

The I-Youth project through the STEP component is reaching out to young people like Oluwadamilare in secondary schools, teaching them modern agriculture, exposing them to agribusiness, and changing their perception about agriculture.

While relaying her experience, 14-year-old Opatotun related that she perceived agriculture as “old people’s” profession because of the images she had seen and how farmers were portrayed in society. She also felt that agriculture was a job for the poor and a form of punishment, which had not been taught in an encouraging manner to secondary school students.

She stated that when STEP under the I-Youth project introduced the initiative in their school, many of them were skeptical and felt they would be learning about the same old stories and ways of agriculture. She said that they were fascinated by the various methodologies adopted by STEP to enlighten them about opportunities available in agriculture.

“When STEP came, they brought machines that we have not seen before. These machines made practicing agriculture less stressful. We had weeders, slashers, mowers, sprayers, etc. Also, we had career talks with mentors who are successfully practicing agriculture and making huge money from it. This opened our minds and eyes, and for me, I want to be a classy farmer like some of these mentors I have seen, and I will study Agricultural Economics at the university,” she said.



*Teachers and students learning the use of farm machines in schools through STEP.*

The impact of STEP, according to her, has attracted other students to join the club. She mentioned that if schools could adopt the methodologies used by STEP in teaching agriculture, many young people like her would venture into agriculture willingly.

The STEP component of I-Youth is implemented across three states—Kaduna, Kano, and Lagos. During the first year of implementing the program, 1220 joined STEP extracurricular clubs established in 15 schools. Operations of

the clubs commenced with the election of student officers into the four club positions: Coordinator, Co-coordinator, Secretary, and Treasurer. These positions were distributed equally among boys and girls, in mixed schools.

STEP is embracing the hybrid model approach, which covers the establishment of STEP clubs to conduct different extracurricular activities in all the schools. They also use experiential learning mechanisms and the introduction of digital agriculture to students and teachers.



*Opatotun Oluwadamilare relaying her experience with STEP during the panel discussion at I-Youth Conference in Lagos.*

# Study identifies new sources of resistance to Black Sigatoka in banana

A study looking for additional sources of resistance to the deadly fungal disease of banana, black Sigatoka, has identified 11 new accessions that are potential sources of resistance to *Pseudocercospora fijiensis*. These accessions are from a collection of banana germplasm maintained by [IITA](#) at Sendusu, Wakiso District in Uganda. They can be used to broaden the current narrow genetic base for ongoing efforts to breed bananas with resistance to the disease.

Black Sigatoka, caused by *P. fijiensis*, is one of the most devastating banana diseases. In commercial banana-growing systems, black Sigatoka is primarily managed using fungicides. However, this method of controlling the disease is not feasible for resource-limited smallholder farmers. Therefore, developing banana varieties resistant to *P. fijiensis* remains one of the most effective ways to support smallholder farmers to protect their bananas, income, and food security.

Currently, breeding banana resistant to *P. fijiensis* is dependent on a narrow gene pool of resistance

genes, mostly from the wild banana accession, Calcutta 4 and the edible Pisang Lilin banana. *P. fijiensis* can reproduce sexually in nature; thus, it can evolve, generating variants that can overcome existing sources of resistance. There is a need to diversify the pool of resistance sources to ensure the durability of developed resistant cultivars. Therefore, the identification and introgression of new and effective *P. fijiensis* resistance genes into banana hybrids and cultivars is necessary.

The team evaluated 95 banana accessions under field conditions in Sendusu to identify additional sources of resistance. Eleven of these accessions responded to *P. fijiensis* infection in a similar manner to Calcutta 4, a cultivar widely used as a source of *P. fijiensis* resistance genes. Therefore, these 11 accessions could be used as parents in IITA and NARO's banana program in East Africa.

"Some of the accessions identified to be resistant to black Sigatoka like Tani, Truncata, Balbisiana, Long Tavoy, Pahang, Pisang KRA, and Malaccensis 0074, are diploids and can be useful for breeding programs,"

Janet Kimunye, IITA PhD student and the lead author, explained.

Other accessions that grouped with Calcutta 4, like Pisang Lilin, Monyet, and Cacambou, allowed the pathogen to sporulate. Thus, their reaction is more appropriately described as intermediate or partial resistance characterized by typical but slow symptom progression up to necrosis. "The resistance provided by these accessions needs to be stacked to develop cultivars with durable black Sigatoka resistance," recommended [George Mahuku](#), Senior Pathologist at IITA.

The study was drawn from IITA Uganda and Tanzania in collaboration with researchers from the Department of Plant Pathology, Stellenbosch University, [University of Hohenheim](#), and the Laboratory of Tropical Crop Improvement, [KU Leuven](#), Belgium.

This study was part of the project '[Improvement of banana for smallholder farmers in the Great Lakes Region of Africa](#)', under the [CGIAR Research Program for Roots, Tubers and Bananas \(CRP-RTB\)](#) framework. The findings can be found in a paper '[Sources of resistance to \*Pseudocercospora fijiensis\*, the cause of black Sigatoka in banana](#)' published in Plant Pathology on 24 May.



Banana inflorescence and fruits infected with Black Sigatoka disease.



Black Sigatoka-infected banana leaf. Photo by IITA.

## Got a story to share?

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