

IITA embarks on project to boost vegetatively propagated crop seed systems in Africa

[IITA-CGIAR](#) is set to commence a five-year project—Program for Seed System Innovation for Vegetatively propagated crops in Africa (PROSSIVA)—along with other implementing partners. The PROSSIVA project aims to enhance the efficiency, productivity, and profitability of vegetatively propagated crop (VPC) seed systems in Africa through research and delivery of innovations that will overcome seed system bottlenecks.

The project has five major components: banana, cassava, sweet potato, yam, and a cross-cutting component that addresses issues common to several VPC crops. The project, funded by the Bill & Melinda Gates Foundation, will be implemented by 25 partner institutions comprising CGIAR centers, national research institutions, and private sector partners across five countries—Ghana, Nigeria, Rwanda, Tanzania, and Uganda. As a CGIAR project, PROSSIVA will work hand-in-hand with CGIAR Initiatives in the Genetic Innovations Action Area that seek to boost farmers' access to an ever-growing pipeline of the best varieties.

With its official launch activity on 2-5 December, the project will change the narrative of underinvestment in the VPC seed systems, address technical weaknesses and poor commercialization, and promote the legacy of recently concluded and currently running single-crop Gates

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Plantain breeder and PROSSIVA Banana Component Lead, Dr Delphine Amah, giving her presentation at the launch.

Tanzanian Ministry officials trained on eradicating Banana bunchy top virus



Banana plants showing typical symptoms of BBTV in a farmer's field during the surveillance and eradication workshop. Photo: IITA/George Mahuku

As part of efforts to curb the spread of the invasive Banana Bunchy Top disease (BBTD) in Tanzania, [IITA-CGIAR](#), in partnership with the Tanzanian Plant Health and Pesticide Authority (TPHPA) and Tanzania Agriculture Research Institute (TARI), convened a three-day workshop in November to train key officials in the Ministry of Agriculture tasked with responding to emerging threats, farmers, and private sector companies promoting the banana industry in the country. The workshop was held at Panama Garden Resort in Moshi.



Participants during a field trip and a hands-on practical on eradicating BBTV. Photo: Robert Minja



Participants during the workshop on surveillance and eradication of BBTV conducted at the Panama Gardens Hotel, Moshi. Photo: Robert Minja

The objective of the training was to provide information on surveillance and eradication techniques to be used in destroying virus-infected plants on farms and outline plans for countrywide surveillance for precise mapping of disease status in the country. The workshop also provided crucial information for developing a robust disease management plan. "Urgent actions are needed to delimit the extent of disease spread and create awareness so that appropriate measures are taken to contain the disease," commented IITA Senior Plant Pathologist [George Mahuku](#).

"If left unchecked, the disease will continue to spread and eventually reach the major banana-producing regions with grave consequences for food security and livelihoods of banana-dependent families," Mahuku added.

During the workshop, the team provided information, building on the Alliance for BBTV Control in Africa for surveillance and eradication techniques to be used and mooted for the destruction of virus-infected plants in the farms, and rapid countrywide surveillance for precise mapping of disease status in the country, crucial for developing a robust disease management plan. In addition, farmers and stakeholders participated in a hands-on session for the proper and effective destruction of infected mats meant to contain disease spread.

"Vigilance and preemptive action to destroy BBTV-infected banana plants, enhanced surveillance and monitoring strategies, improved capacities to recognize the disease, and the deployment of BBTV eradication teams to prevent infection and further disease spread are necessary to contain the disease," said IITA Virologist and Head of Germplasm Health Unit, [Lava Kumar](#). Kumar commended the sensitization of

farmers and stakeholders for reporting and combating the diseases early, with the help of local and regional extension officers. Systems should be established to supply clean planting material to farmers who have destroyed infected plants to safeguard and sustain production.

"Lack of awareness of the disease among the community exacerbates the situation. Farmers use seemingly healthy planting materials from infected mats and, in the process, are helping the disease spread. Therefore, it is important to create awareness of the disease and curb its spread," stated Hamady Lyimo of the TPHPA.

Banana bunchy top disease (BBTD) caused by the Banana bunchy top virus (BBTV) continues to spread in Tanzania. First confirmed in 2020 in Tanzania's Kigoma region, the virus has reached epidemic levels in the Buhigwe district in Kigoma. The virus infection results

in severe stunting and complete loss of fruit production. The infected plants remain as a vestige in the field and eventually die due to extreme stress.

BBTV spreads through the vegetative propagation of banana and by the aphid, *Pentalonia nigronervosa*, which is known to occur in all the banana-producing regions. Lack of awareness about the new disease among farmers and the nature of the virus disguised early detection of the disease. Surveys

conducted in 2022, including alerts to report fields with suspect BBTD symptoms, have revealed that the disease continues to spread.

BBTV occurrence has been confirmed in Dar es Salaam, Kilimanjaro, Mwanza, Pwani, and Rukwa. If unchecked, the virus could spread to all the banana-growing regions. It could lead to severe losses worth several million US\$, besides loss of livelihoods and household incomes for millions of banana growers.

In the affected areas, banana production has been severely affected, leading to shortages and a spike in banana prices. In Buhigwe district, the price of a banana bunch has gone up from 10,000 Tsh to 30,000 Tsh due to BBTV.

As part of the [CGIAR Plant Health Initiative](#), the IITA team is working with local partners to contain the spread of BBTV and recover banana production.

Contributed by George Mahuku and Lava Kumar

IITA signs MoU with OOK Group to facilitate project delivery



The teams discussing modalities of the project implementation.

Finding the right partner institution to implement a project is crucial. This will result in a successful project, significant profit, increased efficiency, and enhanced visibility for both institutions. The [OOK Group Nigeria Limited](#) visited [IITA-CGIAR](#) on 17 November to sign a memorandum of understanding (MoU) with the Institute.

IITA Deputy Director General, Partnerships for Delivery (DDG-P4D) [Kenton Dashiell](#) received the team. He said that MoUs serve as evidence of institutions working together, revealing the implementation order and framework of the project.

OOK Group Managing Director (MD) [Omolara Svensson](#) commended IITA for the significant work done for

the betterment of agriculture and improving farmers' livelihoods in Africa. She said the partnership with IITA ensures the project's successful implementation because it would help them achieve the organization's mission.

Svensson explained that the project aims to involve women in agriculture, providing job opportunities for a minimum of 20,000 farmers focusing on soybean and maize, two IITA mandate crops. The project will also focus on improving the value chains through the export of these crops to reduce postharvest loss, meet customers' demand, and improve Nigeria's economy.

In addition, she requested support from IITA soybean experts to ensure

the program's success and help manage the funds.

Responding to Svensson's request, Dashiell stated that he would initiate the partnership to bring the project to light. He added that IITA would be instrumental in linking them with the appropriate resource persons for the soybean and maize programs.

Wrapping up the meeting, the teams signed an MoU agreeing that the collaboration would guarantee a smooth project.

"We look forward to telling our success stories with IITA," Svensson concluded.

Contributed by Anita Akinyomade

IARSAF's 25th symposium tackles changing climate conditions in the agriculture sector

The International Association of Research Scholars and Fellows (IARSAF) recently held its 25th annual symposium to discuss ways to address changing climate conditions by adopting climate-smart agricultural solutions. Renowned scientists and senior leaders at [IITA-CGIAR](#) attended the seminar, themed "The Role of Climate Smart Agriculture in Ensuring Resilient and Sustainable Food Systems".

IITA Deputy Director General, Partnerships for Delivery (DDG-P4D), [Kenton Dashiell](#), briefed participants on the IITA Fellowship Program, stating that the platform was established to create a pan-campus organization that would embrace all the health science schools and the campus, bringing together people interested in global health. He also revealed that IARSAF, which started as an idea by IITA Director General [Nteranya Sanginga](#), is now the unit with the second largest research revenue on the IITA campus.

"The annual IARSAF symposium has been pivotal to IITA's research

mandate, and I celebrate your efforts in the research activities contributing to food security," said IITA Deputy Director General, Research for Development (DDG-R4D), [Bernard Vanlauwe](#). He reflected on his experience as a research student and encouraged the research fellows to continue their advocacy as ambassadors of the Institute, giving their best in research to achieve a food- and nutrition-secure world. Similarly, IITA West Africa Hub Director [Michael Abberton](#) expressed his joy at the hard work of the research fellows and urged them to make the most of the opportunities gotten through the platform.

During her speech, IARSAF President Faith Olayiwola described the symposium as "an avenue for great minds to discover novel solutions and strengthen existing ones in tackling the challenges facing the agricultural systems."

IITA Head of Biometrics [Ibnou Dieng](#) discussed how data-driven climate adaptation could ensure sustainable agriculture. He highlighted the need

to apply adaptation technologies such as the Internet of Things (IoT) and artificial intelligence (AI) to address climate change conditions, as the primary goal of climate-smart agriculture is reducing greenhouse emissions to mitigate the effects of climate variability.

IITA Eastern Africa Hub Director [Leena Tripathi](#) highlighted gene editing as a way to mitigate climate change, where scientists can develop climate-resistant crop varieties. Breakout sessions featured enlightening discussions on Understanding Climate Agriculture, Climate Smart Agriculture: Helping the world produce more food, and How to feed the world in 2050: Actions in a changing climate.

In her vote of thanks, the IARSAF President appreciated IITA scientists, project supervisors who contributed to the success of the research conducted by the fellows, the IITA Management Team, and everyone who contributed to the success of the symposium.

Contributed by Omolola Dare



IARSAF fellows with DDG-P4D Kenton Dashiell (5th from right) and other IITA staff.

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Foundation-funded investments. These include YIFSWA-II (yam), BASICS-II (cassava), Sweet Gains (sweet potato), and RAPID Banana. A key feature of the new project, however, is that it will seek to capitalize on the diverse set of cross-cutting opportunities that exist for common research and knowledge sharing across crops, resulting in benefits both for single crop systems as well as overall VPC seed system development.

Banana researcher and project co-lead, [Delphine Amah](#), explains how

the project emerged: “PROSSIVA was conceived through an inclusive process involving VPC seed system bottlenecks through crop brainstorming meetings. Research questions were then prioritized, and partners identified target areas where they could conduct research to deliver outputs/innovations that will address bottlenecks and build functional VPC seed systems.”

Although the project team will not focus specifically on efforts to scale

VPC seed system innovations, there will be interactions throughout the project duration with a wide range of public and private sector scaling partners. This will ensure that the novel outputs generated through PROSSIVA will have impacts far beyond the geographies targeted by the project. Consequently, Amah and the PROSSIVA team believe that the new project will contribute significantly to transforming vegetatively propagated crop seed systems in Africa.

Contributed by Tolulope Akinola

IITA Bioscience builds up science graduates toward a better career

At the basic level, most students have only theoretical knowledge of their academic pursuits, which has caused a decline or discrepancy in their passion and learning. To address this, [IITA-CGIAR](#) created a quarterly “Hands-on basic molecular biology techniques” training for young graduates. The training took place at the Institute’s headquarters on 14-18 November. Bioscience Laboratory Manager Yemi Fajire coordinated the training.

The training focused on the practical aspect of molecular biology to give students a solid footing as they pursue their academic careers. Interns, National Youth Service Corps (NYSC) members, and master’s and PhD students from various African universities, representing different disciplines, including molecular biology, genetics, biotechnology, biochemistry, and microbiology attended the workshop. The workshop also included lecturers and researchers who needed skills in the field of molecular biology.

Giving the welcome address, IITA West Africa Hub Director and Head of Bioscience Center, [Michael Abberton](#), explained that the training would expose the participants to molecular biology. He encouraged the participants to embrace this opportunity and explore it in their careers.



An intern, Magdalene Osakue, receiving her certificate from Michael Abberton.

During the five-day training, the participants learned various molecular biology techniques such as Polymerase Chain reaction (PCR) analysis, DNA extraction, sequencing, NanoDrop spectrophotometry analysis, and Agarose gel electrophoresis. The facilitators, including IITA Molecular Geneticist [Ranjana Bhattacharjee](#) and nine other Bioscience staff, assessed the participants before and after the training.

In an interview with the participants, they ascertained the effectiveness



Participants carrying out Agarose Gel Electrophoresis during the practical session.

of the training in helping them discover technical and practical ways of applying molecular biology techniques. One of the participants—Uchechukwu Uzoetoh, a Corps member—said, “I was not sure about my career path before the training. Now, I can use the knowledge acquired to contribute my quota to food security in Africa by developing new and improved crop varieties.”

At the end of the training, the participants were awarded certificates.

Contributed by Anita Akiyomade