

IITA Director General appointed to integral position in One CGIAR operational structure

[Dr Nteranya Sanginga](#), IITA Director General, has been appointed as the One CGIAR Regional Director for West and Central Africa. The One CGIAR Executive Management Team (EMT) announced this in an email to all [CGIAR](#) staff on 26 May, as part of appointments of CGIAR Center/ Alliance Directors General to key managerial positions.

“This is a major milestone on the road to a unified and integrated One CGIAR, and we could not be more excited to work with the DGs as part of an emerging One CGIAR leadership team,” read the EMT’s email announcement.

These appointments will enable the DGs to take on the responsibilities associated with their new One CGIAR leadership roles, in addition to their continued and evolving responsibilities as DGs of CGIAR Centers/Alliances.



IITA Director General Nteranya Sanginga.

STEP-Oyo bets on the next generation to secure food security

Oyo State has realized that the interest of teenagers and youth can be captured through modern agriculture. In partnership with IITA on the [Start Them Early Program \(STEP\)](#), the Oyo State government (OYSG) commissioned the first STEP-Oyo project at the Methodist High School, Ibadan, on 28 May.

The project was established to introduce this initiative in agriculture and encourage agribusiness, generate employment for school children, and combat food scarcity in Oyo State. The first STEP project was piloted in Fasola Grammar School, also in Oyo State, and provided the stimulus for this new project with the State.

In his opening remarks, [Kenton Dashiell](#), IITA Deputy Director General, Partnerships for Delivery (DDG-P4D), mentioned that a memorandum of understanding had been signed between IITA and Oyo State Government, which is a big win for the farmers and agribusiness owners in the State. In addition, he referred to the Oyo State Agribusiness Incubation Center in Awe, dedicated to training thousands of youth to become agripreneurs.

Lekan Abioye, President of Old Students Association, Methodist High School, related the joy of the association as the governor visited for the first time in the



Governor Seyi Makinde commissioning the STEP Agribusiness Building.

history of the school to commission a project. "Methodist High School has become the pride of all the schools in Oyo State because of this project," he said. He appreciated the government, association, and all supporters of education growth in Oyo State.

[Seyi Makinde](#), Executive Governor of Oyo State, in his speech, said that the project had taught him the importance of synergy at all levels. He stated that the project is alive today because of the combined work of OYSG and IITA. "If this project is to continue, it will require further partnerships to secure the future," he emphasized. He appreciated IITA Director General [Nteranya Sanginga](#) for allowing the commission of STEP first in Oyo State in Nigeria. "With STEP, we are creating a new generation of agripreneurs to address the challenge of agriculture and food security in the State," he added.

Excited by the outcome of STEP in Methodist High School, Governor Makinde announced that the next phase would extend the program to six more secondary schools across the geopolitical zones in the State.

DG Sanginga and the IITA Senior Management Team with other dignitaries went on a tour of the agribusiness facilities led by Governor Makinde. They visited the central laboratory, processing center, crop field, poultry, farm exhibition stand, and fishpond.



Top: Kenton Dashiell highlighting the memorandum of understanding signed between IITA and OYSG. Left: Governor Seyi Makinde with a student of Methodist High School in the Central laboratory; and (right) explaining the importance of the project to the attendees.

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.gha@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.



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.

Understanding the gender dimensions of the spread of banana diseases in Nigerian communities

Seeds are essential agricultural inputs in food production, biodiversity conservation, and overall crop yield. However, seeds can carry plant pathogens and serve as vehicles for pathogen spread, naturally and through formal and informal seed distribution, from one season to the next, and within and between geographies. The global spread of the banana bunchy top virus (BBTV), the causal agent of banana bunchy top disease (BBTD), is one notorious example of a pathogen that spreads along with infected planting materials and causes widespread devastation wherever they are introduced.

BBTD is the most devastating disease of banana and plantain. The disease spreads through the use of infected vegetative propagules, and the banana aphid is the virus vector. A team of [IITA](#) scientists carried out a [study](#) to understand the gender dimensions and sociocultural aspects of banana seed (vegetative propagule) sourcing and sharing practices among men and women farmers and their influence on BBTD spread and disease control efforts.

The study was undertaken in three communities (Idologun, Odon, and Olokuta) in BBTD-affected Yewa-South Local Government Area in Ogun State, and three communities (Aba-paanu, Olowa, and Adejare) in Ido LGA in Oyo State, which is free of BBTD. The team led by Lilian Nkengla-Asi, a Gender

Scientist, collected data from 300 banana farmers consisting of 187 men and 113 women in BBTD and non-BBTD areas in southwest Nigeria. They identified gender-differentiated roles, responsibilities, and choices in banana seed selection, sourcing, and distribution between men and women within the two sets of communities.

The results revealed that seed sharing within the communities is a social responsibility. Members of the communities are expected to share banana seed with the needy mainly as gifts rather than sold for cash. Men farmers generally sourced seed from old fields, while women sourced seed from relatives. However, harvesting banana seed was predominantly the responsibility of men, with women as helpers.

The results also indicated that both men and women farmers in the non-BBTD area cultivated larger farm sizes and harvested more banana planting material than farmers in the BBTD areas. The existing seed sourcing practices among men and women farmers heighten the risk of BBTD spread through planting materials within the communities. However, the risk of BBTD introduction into communities is higher in the seed sourcing activities of men because of their role in the long-distance movement of seed, which often contributes to the wide dissemination of seed-transmitted diseases.

Understanding the complex social relationships within households and communities will inform better targeting and design of appropriate interventions that promote inclusion and improve access to quality and clean seeds to men and women farmers. Furthermore, Nkengla-Asi et al. suggested that raising awareness on disease spread through infected seeds should consider gender-differentiated roles and social practices to reduce its spread within communities.

“A reliable, clean seed supply system is crucial for the sustainable management of BBTD and recovery of BBTD-affected communities,” she said. Nkengla-Asi also suggested that the research community and extension agencies should use



Dr Lilian Nkengla-Asi (middle), after a brief introductory discussion on gender research with men and women banana farmers in Idologun community/study site.

participatory approaches in field-level activities and engage all stakeholders in management interventions to ensure that the BBD-free areas continue to remain so.

The team agreed that national and local governments collaborating with research institutes, farmer groups, and NGOs should facilitate making clean seeds available for farmers. This is because strategic partnerships through collaboration and alliances are essential for the effective management of the disease at community, regional, and global levels.



IITA researchers Ladigbolu Temitope and Eforuoku Favour facilitating the women's focus group discussion.

Improving the entrepreneurial orientation of young female agribusiness owners in Benin

With agriculture accounting for about 20% of GDP in the Republic of Benin and employing over 50% of the nation's workforce (aged 15–64) according to [statistics](#), various initiatives have been implemented to promote youth in agribusiness in the country. However, there seems to be an inability to develop businesses for sustainable income among the youth, especially women, who venture into the agricultural sector.

In sub-Saharan Africa, [studies](#) show that most women engaged in agribusiness mainly work in processing, a sector that employs nearly [88% of women](#) in Benin, and the majority of them are under 35 years old. According to a study carried out by Smith Dossou, an [IITA-CARE](#) awardee, women entrepreneurs are more likely to underperform or make less revenue and profits in their businesses compared to men entrepreneurs.

The study aimed to understand the economic success, the role of entrepreneurial orientation, and the influence of social and business environments among young women agribusiness owners in Benin. Carried out under the [IFAD](#)-sponsored CARE project, it reveals that embracing strategies that will enhance innovative, pro-active, and risk-taking attitudes can ensure the success of young women agribusiness owners in the country.

Agribusiness, like most economic activities, has been identified as critical to development in African countries. The development of agro-based industries and initiatives focusing on youth will create jobs to address unemployment and poverty.

"In Benin, various initiatives have been implemented to promote youth entrepreneurship in agribusiness," states Dossou. "Yet, young people, especially

women who venture into agribusiness often find themselves, in the short or medium term, unable to develop their businesses for sustainable income," he adds.

According to Dossou, there seems to be a relatively low business performance index with young women agribusiness owners. However, the study records a positive effect of Entrepreneurial Orientation (EO) on the innovativeness, proactiveness, and risk-taking characteristics among them.

Policymakers can develop subsector-specific policies to address the underperformance of young women agribusiness owners. Doing this will build enterprise production and help women agribusiness owners increase profit in Benin. Also, capacity-building initiatives implemented in partnership with NGOs and professional training institutions can help potential young women agribusiness owners to acquire and grow the appropriate EO.



The Government of Benin is implementing various initiatives to promote youth and women entrepreneurship in agribusiness.

New study: Use of genome editing confers resistance to Banana Xanthomonas wilt (BXW) disease

Disease-resistant varieties developed through genome editing are an effective strategy for managing diseases in food crops, a new [IITA study](#) shows.



Healthy bananas not infected with BXW.

The study shows that recent advances in CRISPR/Cas-based genome editing can accelerate banana improvement. The study, published in May in the *Plant Biotechnology Journal*, was conducted at [IITA-Nairobi](#) between 2019 and 2020.

“It is urgent to close the yield gap in staple crops and enhance food production to feed the world. The application of genome editing can improve agricultural productivity, thus boosting food security,” says [Leena Tripathi](#), the lead author.

The researchers used CRISPR/Cas9 based genome editing to knock down the DMR6 Orthologue in banana for developing resistance to Banana Xanthomonas Wilt (BXW) disease.

They discovered that targeted mutations in the DMR6 gene sequence confer enhanced resistance to bacterial disease and that knocking out one

DMR6 gene has no detrimental impact on plant growth.

The study found that there are multiple DMR6 gene sequences in banana. “The differential expression through qRT-PCR confirmed that expression of the Musa DMR6 gene is activated during pathogen-infection in the susceptible banana cultivar,” Tripathi notes.

The availability of banana reference genome sequences and the CRISPR/Cas9-editing system developed at IITA motivated Tripathi and her team to develop disease-resistant banana by precisely editing the endogenous genes.

“After establishing a genome-editing tool for banana in our laboratory, we started focusing on disease resistance, particularly BXW disease, which is one of the most devastating diseases

affecting banana production in East and Central Africa,” she continues.

“All the cultivated banana varieties are susceptible to BXW disease. Overall economic losses from BXW were estimated at US\$2-8 billion over a decade,” Tripathi explains.

Food security experts say the emphasis in Africa, unlike other parts of the world, should be on banana rather than cereals since it is one of the main crops used for staple food and in income generation.

Investment in the genetic improvement of banana holds excellent prospects for improving food security as these crops feed more people per unit area of production than other staple crops.

Genome editing offers cost-effective strategies for developing improved varieties of banana resistant to multiple diseases. “Genome editing technology can help banana farmers in Africa beat economic losses from BXW,” states the study.

This study demonstrates the application of CRISPR/Cas9 for crop improvement with an important trait—disease resistance. It also confirms the availability of expertise and skills to apply genome editing for crop improvement in Nairobi, Kenya.

This study was supported by CGIAR Program for Roots, Tubers and Bananas ([RTB](#)).

RTB notes that roots, tubers, and bananas are a critical source of food, nutrition, animal feed, and cash income, whose production leads to an estimated annual farm-gate value of US\$339 billion globally.



Banana bacterial wilt leads to premature ripening of the banana fruit.