

## IITA hosts One-Health kick-off webinar under CGIAR's Two Degree Initiative

As part of CGIAR's Two Degree Initiative (2DI) for Food and Agriculture, CGIAR-IITA hosted a kick-off webinar on the "One-Health platform for climate-driven pests and diseases in West Africa" on 30 June.



On-site team anchoring the One-Health platform webinar.

The One-Health platform is Regional Grand Challenge 1 (RGC1), one of eight grand challenges under the 2DI, which comes from a need to transform the food systems in the world. Giving an overview of the initiative, Bruce Campbell, Program Director of the [CGIAR Research Program on Climate Change, Agriculture and Food Security \(CCAFS\)](#), highlighted the need to do things differently because it would be impossible to achieve the [United Nations SDG-2](#) by 2030 using the current development research initiatives, especially against the backdrop of climate change. Increasing incidents of climate-related catastrophes are affecting the farming communities and, by extension, agricultural productivity. CCAFS, led by the Alliance of Bioversity International and CIAT, put together the Two Degree Initiative.

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## Artificial intelligence: A game-changer for agriculture in Africa

[CGIAR-IITA](#) plant health scientist [James Legg](#) was a recent guest on [Plantopia](#), a podcast series to mark the International Year of Plant Health, and interviewed by Cornell University's [David Gadoury](#).

Legg talked about a powerful tool that is putting information in farmers' hands. This tool is an app, [PlantVillage Nuru](#), which was developed in partnership with Penn State University and a private tech developer in India. "Nuru is like putting an extension officer in the hands of a farmer," Legg said during the show.

According to Legg, this app has many advantages. "Anyone with a smartphone can use it. All they need



Screenshots of the Nuru app interface.



to do is to download it from Play Store and then follow the instructions for its use. What makes it a game-changer is not only its ability to diagnose plant pests and diseases but the fact that it works offline. This functionality is vital because most farmers in Africa live in remote rural areas with limited or no connectivity and access to data or extension officers.”

Just like with COVID-19, testing is important in the detection of plant diseases as well. Nuru is an example

of how artificial intelligence can be used to test and recognize symptoms of pest and disease damage in plants.

On the show, Legg explained how artificial intelligence works: “We recorded images of thousands of damaged cassava leaves showing symptoms of mosaic disease, brown streak, and green mite, as well as healthy, undamaged leaves. A team from Penn State University ‘trained’ computers through machine learning to recognize the characteristics of these diseases. Armed with this information,

a private company from India hired by Penn State developed the app.”

All a farmer needs to do is download the app, which requires access to the Internet, but after that, it can be used offline, Legg said. This app is not only a game-changer, but it is also affordable and efficient. To learn more about artificial intelligence and the importance and origins of cassava in Africa [listen to the entire interview](#). Hint: cassava was introduced to Africa from Latin America in the 16th century.

## 10-year strategy for managing invasive species in Africa released

Prevention, early detection, and control make up the three-pronged approach that Africa is taking on to manage the menace of invasive species on the continent. As the climate continues to change, invasive species also continue to increase and spread globally. Countries cannot wave off a global challenge individually hence the need for a continent-wide strategy.

[This strategy](#) was developed to respond to the invasive species challenge by linking conservation of biodiversity to human health. Its overall objective is to effectively guide and coordinate prevention and eradication actions at continental, regional, and national levels.

Invasive species pose a huge global threat, both in terms of biodiversity and the cost to agriculture, trade, tourism, and development. They disproportionately affect communities in poor rural areas—people who depend on natural resources and healthy ecosystems to make a living. For example, invasive insect pests and diseases can significantly affect agricultural productivity and production.

According to the strategy, the invasion of the fall armyworm in 12 African countries will cause an estimated annual yield loss of 4.1 to 17.7 million tons of maize crop alone. It is estimated that 480,000 invasive species have

been introduced to different ecosystems globally. Sadly, their geographic spread and impact are growing due to climate change.

Unfortunately, Africa lacks a functional and well-coordinated mechanism intended to secure instruments required for vigilance, predictive modeling, forecasting, monitoring/surveillance, data handling, institutional arrangements, and governance structures. This mechanism is needed for prevention, preparedness and early detection, control and management of invasive species, as well as the restoration and rehabilitation from the impact of invasive species. This strategy was developed to fill that gap and work as a comprehensive framework on invasive species at the continental level to coordinate member States in achieving global targets.

The International Centre of Insect Physiology and Ecology (icipe), [IITA](#), and Centre for Agriculture and Bioscience International (CABI) developed the strategy with contributions from the



Cover page of strategy document showing pest-invaded maize.

African Union’s Inter-African Bureau of Animal Resources and Inter-Africa Phytosanitary Council. Funding partners include the Swiss Agency for Development and Cooperation, the UK Department for International Development (DFID) and the Netherlands Department for International Cooperation. Find the full strategy document here: <https://iita.org/iyph/wp-content/uploads/2020/06/Strategy-for-Managing-Invasive-Species-in-Africa-20212030FINAL.pdf>

### Got a story to share?

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



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One of the necessary changes Campbell spoke about is a transformation in the agricultural research-for-development community, which measures success in the number of publications rather than in societal impact. He said, "This kind of system makes it extremely difficult to deliver end-to-end sustainable and scalable solutions. So one of the transformations we see has to happen among ourselves."

To change this, CGIAR has made tackling climate change a high-level objective of the entire CGIAR and a significant focus of its future research strategy. "The Two Degree Initiative is part of an attempt to do research-for-development differently, as 'business unusual'," Campbell said.

Changing the narrative of the research community would require a holistic approach to research and dissemination of solutions. The One-Health platform in West Africa is part of a multi-regional strategy focusing on ambitious targets with a global challenge to reach 500 million farmers in the next decade ultimately.

In his welcome remarks, IITA Board Chair [Christian Borgemeister](#) linked "One-Health" to climate change and the need to engage key stakeholders for an active partnership and synergies

to address climate change holistically. He outlined the three objectives of the meeting:

1. Getting the buy-in of critical regional and international stakeholders to the One-Health RGC1
2. Identifying participants' perspectives on significant pest and disease challenges in West Africa
3. Getting participants' advice as to how the One-Health RGC1 can add value to ongoing and planned initiatives under the four strategic priorities of RGC1

IITA, through its [Biorisk Management Facility \(BIMAF\)](#) in Benin, is leading the One-Health platform, which will support farmers in managing biorisks and climate-driven food-health risks. The RGC1-2DI core team consist of IITA and BIMAF staff: [May-Guri Saethre](#), [David Chikoye](#), [Manuele Tamò](#), [Ghislain Tepa-Yotto](#); the Executive Director of [CORAF](#) and Chair of the BIMAF- Independent Science Advisory Panel, Abdou Tenkouano; and the [International Crops Research Institute for the Semi-Arid Tropics \(ICRISAT\)](#) representative and BIMAF member, Malick Ba. Other members of the core team are Bruce Campbell and representatives of the [World Resources Institute](#) (WRI), Rebecca Carter and Cristina Rumbaitis del Rio.

In a goodwill message, Dr Françoise Assogba Komlan, the Secretary General of the Ministry of Agriculture, Livestock, and Fisheries in the Republic of Benin, described One-Health as a holistic and inclusive concept, which integrates plant health and aligns completely with the vision and action plan of the Benin Government. "It proposes to address national and regional agricultural priorities, and aims to mitigate the risks induced by climate change to enhance food and nutritional security of smallholder farmers which represent the largest agricultural community," she said.

Stakeholder organizations that attended the virtual meeting include the Economic Community of West African States (ECOWAS), the Forum for Agricultural Research in Africa (FARA), Permanent Interstate Committee for Drought Control in the Sahel (CILSS), Norwegian Agency for Development and Cooperation (Norad), and the Norwegian Institute of Bioeconomy Research (NIBIO). Other partners represented were from the National Institute for Agricultural Research in Benin (INRAB), International Fund for Agricultural Development (IFAD), GIZ, Bill & Melinda Gates Foundation, Department for International Development (DFID), International Water Management Institute (IWMI), and European Centre for Development Policy Management (ECDPM).

## ENABLE Youth Cameroon births first start-up

On 15 June, AgriBiz Home made history as the first start-up of the ENABLE Youth Cameroon program. At a ceremony chaired by the city of Penja Divisional Officer M. Abate, the start-up unveiled "Juicy", its branded banana-based fruit juice, to the public. [Cargèle Masso](#), [IITA-Cameroon](#) Country Representative and Coordinator of ENABLE Youth Cameroon, also attended the historic event.

Twenty-four-year-old Agripreneur Tabi Priestly Gwangwa'a, the owner of AgriBiz Home, is the first to launch a personal business within the ENABLE Youth Cameroon program. Coming from the Youth Agribusiness Incubation Center (YABIC) in Dibombari, Gwangwa'a has stood out throughout his ongoing incubation cycle, as part of the first cohort of the program. He



*AgriBiz Home CEO Priestly Tabi Gwangwa'a giving a speech at the launch.*

chose to set up his business in the city of Penja, to take advantage of the banana production in the region.

Gwangwa'a holds a BSc in Agribusiness from University of Buea and always had a passion for banana because of its nutritional value. Beyond the production of bananas into fruit juice and jam, Gwangwa'a also has plans to expand his enterprise to transform the whole banana plant into various products and the resulting waste into fertilizers. Only the ultimate waste will leave the company, a significant contribution to the circular economy and environmental sustainability.

In the six months preceding the launch of the "Juicy" brand, Gwangwa'a assembled a team of young people with whom he has worked tirelessly. To ensure the successful marketing of its product, AgriBiz Home is currently prospecting potential clients and negotiating with Douala-based supermarkets such as Meno and Bonus. Although he started his activity, the young Tabi has continued to work with the experts of the Program to improve his processes, obtain the necessary support for compliance with standards and regulations in the agri-food sector, and develop his market for his products.

To launch his business, Gwangwa'a obtained funding through his participation in networking activities such as the 2019 UNDP youth entrepreneurship innovation challenge in Cameroon. He became the national champion of the UNDP Challenge, for which he received a cash prize and a fully sponsored trip to attend the third edition of the Youth Connekt Africa (YCA) Summit in Kigali, Rwanda, on 9–11 October 2019.

ENABLE Youth Cameroon is one of the responses of the Government of Cameroon to the problem of unemployment among young graduates in the country. The program equips young African graduates with agribusiness skills to create decent jobs in the agricultural sector and encourage young people to set up businesses and create even more employment opportunities.

In Cameroon, IITA is implementing the ENABLE Youth initiative, following an agreement with the Ministry of Agriculture and Rural Development (MINADER). Thanks to a loan from the African Development Bank (AfDB) to the Republic of Cameroon, ENABLE Youth Cameroon will incubate 1,536 young agripreneurs divided into three cohorts of 512 each and create at least

600 agribusinesses, which will generate 6,000 job opportunities for other youths.

"The ENABLE Youth Cameroon Program has played a huge role in what I am achieving today," said Gwangwa'a, "My perception of agriculture has changed, thanks to the orientation I had during my incubation and my constant exchanges with the experts." He credits his many teachers for the skills he has acquired to develop his business.

"Although my training is still ongoing, I distinguish myself daily by my approach of adding value to the production of bananas. It is important for me to integrate new technologies to increase my production, sales, and marketing. I will always be an ambassador of ENABLE Youth Cameroon and I encourage my comrades to work with a lot of resilience to finalize their business plans," he concluded.



Juicy tasting with IITA and city of Penja officials.



(L-R) ENABLE Youth Cameroon Program Coordinator, Dr Cargèle Masso, Divisional Officer of Penja M. Abate, AgriBiz Home CEO Priestly Tabi Gwangwa'a, and the MINADER representative in Penja.