

Two more feathers added to IITA's Aflasafe project's cap

When research on Africa's first indigenous biological control for aflatoxins began intensively in 2003, the scientists involved in its fabrication just wanted to help Africans have safer food on their table. Today, not only has [Aflasafe](#) been able to achieve this goal, it is also gaining world recognition as an eco-friendly product that effectively combats the hazardous effects of [aflatoxin contamination](#) in the field and storehouses of major food crops and one that does so amid the challenges created by climate change.

Recently, the Editorial Board of the foremost *World Mycotoxin Journal* awarded a paper submitted by [Ranajit Bandyopadhyay](#), leader of the Aflasafe project at IITA, the "Best paper of the year 2016". The Open Access article entitled [Biological control of aflatoxins in Africa: current status and potential challenges in the face of climate change](#) explicitly details the current status and challenges of aflatoxin biocontrol research for development in Africa.

This award also offers the lead author a free subscription to the *World Mycotoxin Journal* for 2017. Read the Editorial

Board's recognition of the lead author Ranajit and an assessment of how this laudable biocontrol technology is impacting African food production [here](#).

In another development, the prestigious [American Phytopathological Society](#) (APS) announced Ranajit as the winner of its 2017 Excellence in International Service Award.

The Excellence in International Service Award is a special annual recognition, conferred on one outstanding member of the APS perceived to have significantly contributed to the development of the



This cap definitely fits Ranajit.

science of plant pathology outside his home country. APS judges members' contributions through collaborative projects, sabbaticals, and short- and long-term assignments with educational or governmental agencies, international centers, and research institutes.

Ranajit, an Indian, was selected as this year's winner for several significant contributions to the management of seemingly intractable diseases in many African nations, Brazil, and the US. He has sustained tremendous effort to drastically reduce the number of Africans

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NextGen scientists "shoot for the moon" in cassava research

On 14–16 March, more than 80 international cassava experts met at the Next Generation Cassava Breeding

([NextGen Cassava](#)) annual meeting to report on and assess the outcomes of a five-year effort to improve cassava

breeding as well as outline the next steps for a second phase of the project. The meeting was held at IITA in Ibadan,



Group photo of NextGen cassava participants attending the annual meeting in Ibadan.

Nigeria, which is celebrating its 50th anniversary this year.

“What would be your moonshot?” [Chiedozie Egesi](#), Project Manager of NextGen Cassava, challenged the attendees at the opening ceremony of the meeting. “As cassava breeders, what varieties do you want to get across to the farmers and end-users, and what is your strategy to get there?”

These questions framed the task for the participants, which was to identify the successes from the first phase of the NextGen project and devise strategies to address the challenges.

The scientists’ goals are to unlock the full potential of cassava by utilizing modern breeding techniques to speed up the rate at which new varieties with desirable traits can be developed. This is done through [genomic selection](#) (GS), a technique that uses statistical models to predict how different cassava genotypes will perform in the field. Conventional cassava breeding methods can take 5 to 10 years and require extensive trials. By using GS, breeders can more rapidly identify promising varieties and deploy them in field trials.

“Cassava is the second most important food crop in Africa, which is the global leader in food production,” stressed [Alfred Dixon](#), Director of the Development and Delivery Office for IITA, who delivered the meeting’s keynote address. With Africa’s rapidly growing population and an estimated food import bill of \$110 billion by 2025, he said it is critical to make the production of crops like cassava more efficient, modern, and competitive.

Until now, the project has primarily focused on laying groundwork. This

includes capacity building, surveys to identify end-user preferences, stronger collaboration among partner institutions, training models, and mapping key areas of the cassava genome to better understand traits like resistance to viral diseases, pests, and enhanced nutritional quality. Phase I established CassavaBase (<http://cassavabase.org>), an open-data breeding database where cassava breeders can upload and view genomic data from different experiments and partners.

Another clear success of Phase I was capacity building and training. “Without that important pipeline, long-term sustainable improvements in crop production will wither in the face of future challenges,” said [Ronnie Coffman](#), Cornell professor of plant breeding and genetics and Director of International Programs, who is the principal investigator on the multi-partner grant.

In Phase I, NextGen trained a total of nine PhD students (six at Cornell University and three at the West Africa Centre for Crop Improvement (WACCI), University of Ghana) and nine master’s students at Makerere University in Kampala, Uganda. NextGen has also streamlined African breeding programs and reinforced collaboration between partners in the US, South America, and Africa.

“There is no doubt that science is critical for a transformational change of the cassava sector. And this is so because we now have more issues contending with the productivity of this root crop,” said Olusegun Ayeni at the meeting’s opening ceremony, speaking on behalf of the Hon. Chief Audu Ogbeh, Minister for Agriculture and Rural Development of Nigeria. “For us to tackle these challenges requires new breeding options that

are quick and smart to address these emerging limitations.”

A “model” for future crop research projects

“NextGen is a model for multi-partner, global research projects where scientists are looking to improve crops that could be critical for food security for smallholder farmers in the 21st century,” said Coffman. “In Phase II, there will be greater focus on developing varieties that can then be tested and released to farmers, which many hope will improve agriculture for smallholder farmers in Africa.”

Representatives from 10 institutional partners across six countries on three continents presented key findings and results from the first phase of the project at the meeting. These institutions include the [Boyce Thompson Institute](#) (USA), Embrapa (Brazil), the International Center for Tropical Agriculture ([CIAT](#)/Colombia), [IITA](#) (Nigeria), the National Crops Resources Research Institute ([NaCRRI](#)/Uganda), the National Root Crops Research Institute ([NRCRI](#)/Nigeria), the University of Hawaii (USA), the US Department of Agriculture-Agricultural Research Service, and the US Department of Energy Joint Genome Institute. Last year, NextGen Cassava expanded to include Tanzania, partnering with the Lake Zone Agricultural Research and Development Institute (LZARDI).

NextGen Cassava is funded from 2012 to 2017, with a \$25 million grant from the Bill & Melinda Gates Foundation and the Department of International Development in the UK through their UK Aid program. NextGen is up for a 5-year renewal in 2018. - *contributed by Samantha Hautea, NextGen Cassava.*

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who get exposed to aflatoxins, creating a positive impact on the lives of sub-Saharan African households.

Ranajit is the second IITA scientist to receive this laudable recognition after Kitty Cardwell, who coincidentally was Ranajit’s predecessor at IITA, won the award in 2003.

Announcing the award, Ranajit expressed special thanks to IITA for creating a suitable work environment for the development of novel ideas.

“Much of what I did is a contribution of many people in various teams at IITA and elsewhere. However, IITA gave me the most encouraging and liberating workspace in my career. I have been most productive during the last 15 years that I have been at IITA. Many thanks to my colleagues and the IITA management for all the support,” he said.

Ranajit will be officially conferred with the award during the award ceremony at the Annual Meeting of the APS in San Antonio, Texas on 6 August.

The IITA Director General joins the IITA family and friends of Aflasafe to wish Ranajit more success. A special congratulatory message from DG Sanginga read:

“IITA is so proud of your (Ranajit) achievements that we always celebrate. I am sure more awards are coming. Congratulations and on behalf of IITA, thank you for your great work and the IITA spirit”.

Aflasafe is indeed going places!

Exploring farmers' willingness to pay for drought tolerance in maize in Zimbabwe

Adoption of new technologies depends significantly on whether potential users are willing to pay a premium for the associated benefits. A [new study](#) explores farmers' willingness to pay for drought tolerance (DT) in maize, a crop playing a leading role in the food security in southern Africa. Focusing on Zimbabwe, this research aimed at estimating the implicit prices farmers would be ready to pay for this trait compared to other preferred traits, such as, for example, grain yield, cob size, and texture.

Drought is a widespread phenomenon across Africa south of the Sahara with an estimated 22% of mid-altitude/subtropical and 25% of lowland/tropical maize growing in regions affected annually by seasonal water shortages. Climate change is likely to increase average temperatures by 2.1 °C in the region, which will lead to even greater water scarcity, particularly in Southern Africa, in the coming decades. Studies have indicated that an increase in temperature of 2 °C would result in grain yield decreases by 13–20%. For every day with temperatures above 30 °C, yield is reduced by 1% under normal conditions and by 1.7% under drought conditions.

There is evidence that the use of new crop varieties, such as drought tolerant maize and improved management techniques can offset yield losses by up to 40%. While the development of these new varieties and related technologies is laudable, their impact depends very much on the extent to which they are adopted by farmers.

This study was conducted across all geographical districts of Zimbabwe and included 1400 households. It finds that farmers in Zimbabwe are willing to pay a premium for drought tolerance equal to 2.56, 7, 3.2, and 5 times higher than for an additional ton of yield per acre, bigger cob size, larger grain size, and covered cob tip, respectively. It also finds that women are more interested in DT than men. The authors suggest that this might be due to women's higher sensitivity to the risks associated with food shortage and a higher relative risk aversion in general. Among other interesting findings, households headed by those engaged in temporary employment to supplement their livelihoods are more interested in drought tolerance in maize compared to those headed by farmers.



Tanzanian farmer holds drought tolerant maize cobs. Photo credit: F. Sipalla/CIMMYT.

Based on their findings, authors recommend that marketing campaigns emphasizing the value of the new maize cultivars should be tailor made with the identified and most enthusiastic interest groups in mind. This will enable faster dissemination of the new technology.

Read the [full article](#) and watch the [summary presentation](#) by the authors. Open Access funded by the Bill & Melinda Gates Foundation.

Adapted from <https://pim.cgiar.org>

'GoSeed' to join the African Seed Trade Association

Africa still remains a minor player in the global seed trade, accounting for less than 2%. In recognition of the important role quality seeds could play in feeding Africa's teeming population statistically projected to exceed 2 billion by 2050, GoSeed—the arm of IITA's Business Incubation Platform (BIP) responsible for the production, marketing, distribution, and sale of quality certified seeds to farmers—has registered its interest in becoming a member of the African Seed Trade Association ([AFSTA](#)).

Leading a team from IITA to the 17th annual congress of the AFSTA which was held on 28 February to 2 March in Dakar, Senegal, [Frederick Schreurs](#), CEO of BIP, expressed GoSeed's strong interest in joining the AFSTA noting that the organization could serve as the springboard through which GoSeed would be better positioned within the African seed industry. This is also an auspicious timing for GoSeed to benefit from the 6.8% growth representing \$73 billion expected in the global seed market by 2021.

products and technologies for additional profit not only in Nigeria but across AFSTA's huge seed business network in Africa", he said.

AFSTA connects its members with seed companies through which it shares information and promotes new seed varieties and technologies to a wide range of farmers. It is a not-for-profit membership association formed in 2000 to champion interests of private seed companies in Africa. Its mission is to promote trade in quality seed and technologies in Africa for the benefit of members and farmers. AFSTA is tirelessly working to ensure that the seed industry is adequately able to feed people.

"If you want your seed varieties and technologies to reach farmers through the seed companies, here is the ideal platform. AFSTA is the "go to" place members can exploit to get their seeds into farmers hands," said Justin Rakotoarisaona, Secretary General, AFSTA.

IITA plans to participate in the 2018 AFSTA congress, which promises beneficial opportunities in seed business to 800 delegates from all over the world. It will take place in Egypt.

"Supplying reliable and adaptable quality seeds to the private sector is key to ensuring sustainable food security in Africa. And by putting the seed supply chain in place, farmers will get through GoSeed access to new varieties coming from IITA through seed companies. GoSeed will, however, not sell directly to farmers. Its role will be to produce basic, pre-basic seed, and if needed foundation seed for seed companies", said Schreurs.

[David Ojo](#), IITA Soybean Scientist, also said that AFSTA will give GoSeed the needed promotion it needs in Africa.

"As a member of AFSTA, GoSeed will gain a lot in increasing its visibility, showcasing its



IITA representatives at the 17th annual congress of the AFSTA in Senegal.

Nigerian students acknowledge IITA's efforts in alleviating unemployment

The body covering every Nigerian undergraduate has cited [IITA](#) for its excellent efforts in creating employment for Nigerian graduates every year. When members of the National Association of Nigerian Students – NANS Zone D (South-West), visited IITA in Ibadan, on 16 March, Oludaisi Afolabi, leader of group, said IITA facilitates employment for young people, and also generates agricultural innovations to help Africa surmount its greatest challenges—hunger and poverty.

[Kenton Dashiell](#), IITA Deputy Director General, Partnerships for Delivery received the group. Dashiell counseled the students to keep working hard for the good of the country.

“IITA is partnering well with Nigerian graduates. We have discovered that graduates from the country are very energetic, talented, smart, motivated, and ready to work. IITA is convinced



Afolabi presents a certificate of credence to IITA on behalf of all Nigerian undergraduates.

that this generation of young men and women are the ones that will take Nigeria to the level where it is supposed to be. IITA will do its part to help with that. Do not stop working hard. IITA will introduce you to its youth program, because it is relevant and based on

modern agriculture; the program will teach you that agriculture is profitable.”

Responding, Afolabi said, “Thank you for receiving us; we are here to acknowledge your good efforts in facilitating employment and food security and reducing incessant hunger in Africa. We also want to sustain our mutual relationship with IITA. Thank you again and well done.”

The undergraduates were led to the IITA Youth Agripreneurs to see the involvement of youth in agribusiness, and learn how the youth create collective enterprises, in a gender-responsive manner, and generate income.

Impressed by what they saw, Afolabi, on behalf of the students, presented a certificate of credence to the Institute, for their efforts in improving livelihoods, reducing unemployment, and also transforming agriculture in Nigeria.

Ebonyi State delegates seek IITA's intervention to move the country's Zero Hunger goal forward

In continuance of the [Zero Hunger Initiative](#) which is geared towards unlocking the potentials of the country and ensuring the nation's emancipation from the shackles of hunger and poverty by 2030, a team of nine stakeholders in agriculture from Ebonyi State approached IITA on 16 March for guidance on a course of action.

Itapah Azuobu, Senior Special Adviser (SSA) to the State Government on Rice production, who spoke on behalf of his team, said they visited to strategize on

the way forward and to also see how the state, predominantly known for its enormous rice production, could benefit from investing in the cassava value chain.

[Kenton Dashiell](#), IITA Deputy Director General, Partnerships for Delivery, welcomed the visitors and expressed the Institute's commitment to sharing its expertise and technologies to help ensure that hunger is totally erased from Nigeria.

When asked to share his thoughts on IITA, in relation to the Zero Hunger Initiative,

Azuobu stated, “We can see that IITA is well structured, highly professional, and properly managed. This gives us great confidence that we have the backing we need to reach our target by 2030. The State will tap into IITA's rich agricultural potential and together, join forces to lift over 13 million people out of hunger.”

Azuobu also expressed hope that the State government will keep up its cordial relationship with the Institute.

“We hope to have a long and viable relationship with you (IITA), so that we can continue to benefit from the technologies generated by IITA. We have come and seen; we will now take home the message. Ebonyi State appreciates the warm reception it has received from IITA. Thank you,” Azuobu concluded.

The Zero Hunger Initiative was launched in Nigeria earlier this year at Abuja. The launch ushered a new journey for the Nigerian people and for Africa as a continent. The five-year scheme commenced with four pilot states: Benue, Ebonyi, Ogun, and Sokoto. The project was established in IITA, with ex-President of Nigeria, Chief Olusegun Obasanjo as chairman of the Zero Hunger Forum.



Elizabeth Parkes, cassava expert, leads the team from Ebonyi on a tour around IITA facilities.

Got a story to share? Please email it with photos and captions every Wednesday to Katherine Lopez (k.lopez@cgjar.org), Jeffrey T. Oliver (j.oliver@cgjar.org), Catherine Njuguna (c.njuguna@cgjar.org), or Adaobi Umeokoro (a.umeokoro@cgjar.org).