

## Hope for Tanzanian banana farmers with the official release of new “matooke” hybrids

Tanzania has officially released four new, improved hybrids of the important staple cooking banana, “matooke”. This is a first for matooke bananas in Tanzania. These hybrids are resistant to important pests and diseases ravaging the current varieties that millions of farmers across the country are growing and, as such, herald an exciting era for banana cultivation in the country.



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TOSCI officials collecting data from Distinctive Uniformity and Stability Trial before approving hybrids for release. Photo by Mpkoki/TARI

## Research centers call for innovation and stronger partnerships to scale up Africa’s food systems

Science, research, and innovation are essential to accelerate the transformation to healthier, more sustainable, more equitable, and more resilient food systems. What scientific innovations are needed and how they can inform related policies were among the issues discussed at the recent Science Days, a virtual conference organized by the Scientific Group as a prelude to the UN Food Systems Summit.



### TAAT CASSAVA Technology Catalogue

IITA Deputy Director General, Partnerships for Delivery, Dr Kenton Dashiell explaining TAAT’s role in strengthening Africa’s food systems.

On 7 July, the [Technologies for African Agricultural Transformation \(TAAT\)](#) organized one of several conference side events, themed “Scaling Up Innovations and Partnerships to Modernize African Food Systems”. Moderator and [IITA](#) Director for Advocacy and Country Alignment Function, [Kwesi Atta-Krah](#), highlighted the need for urgent and pragmatic steps to solve shaky food systems and put Africa on the path of self-sustenance and prosperity.

IITA Director of Development and Delivery Office [Alfred Dixon](#) commended the organizers for bringing the community together to address food challenges in Africa. He stated that the impact of COVID-19 had demonstrated the need for Africa to fortify its food systems, and TAAT is a classic example of the path that Africa needs to take to address its food challenges. “I urge you to identify partnership models that are effective for modernizing Africa’s food system,” he advised.

The African Development Bank (AfDB) Director for Agriculture and Agro-Industry, Martin Fregene, gave a keynote address focusing on innovative pathways and partnerships for modernizing African food systems. He said that Africa needs to raise its productivity by putting the best available technology in the hands of farmers. He added that revamping marketing and distribution by introducing wholesale market infrastructure will help African farmers get out of their poverty cycle. Also, modernizing consumption by diversifying the food basket towards foods and vegetables will

reduce obesity and malnutrition among African children. “Modernizing food safety is important as it will improve food quality for consumers through investment in laboratory infrastructure for cross-border trade,” he added.

During his keynote, IITA Deputy Director General, Partnerships for Delivery, [Kenton Dashiell](#), spoke on the role of innovation and partnerships to strengthen African food systems. He noted that TAAT is raising agricultural productivity and improving seed systems by deploying proven agricultural technologies to the continent’s farmers. “One of the many ways TAAT has organized to deploy the best technology is developing a Technology Catalogue for different crops and livestock,” he said. He added that the role of the private sector in the TAAT program is to drive long-term sustainable agribusiness growth.

An expert panel highlighted the achievements of different programs in strengthening Africa’s food systems, including building the capacity of over 23,000 aquaculture value chain actors on pond and hatchery management, handling and processing, storage and preservation, and product development for household consumption.

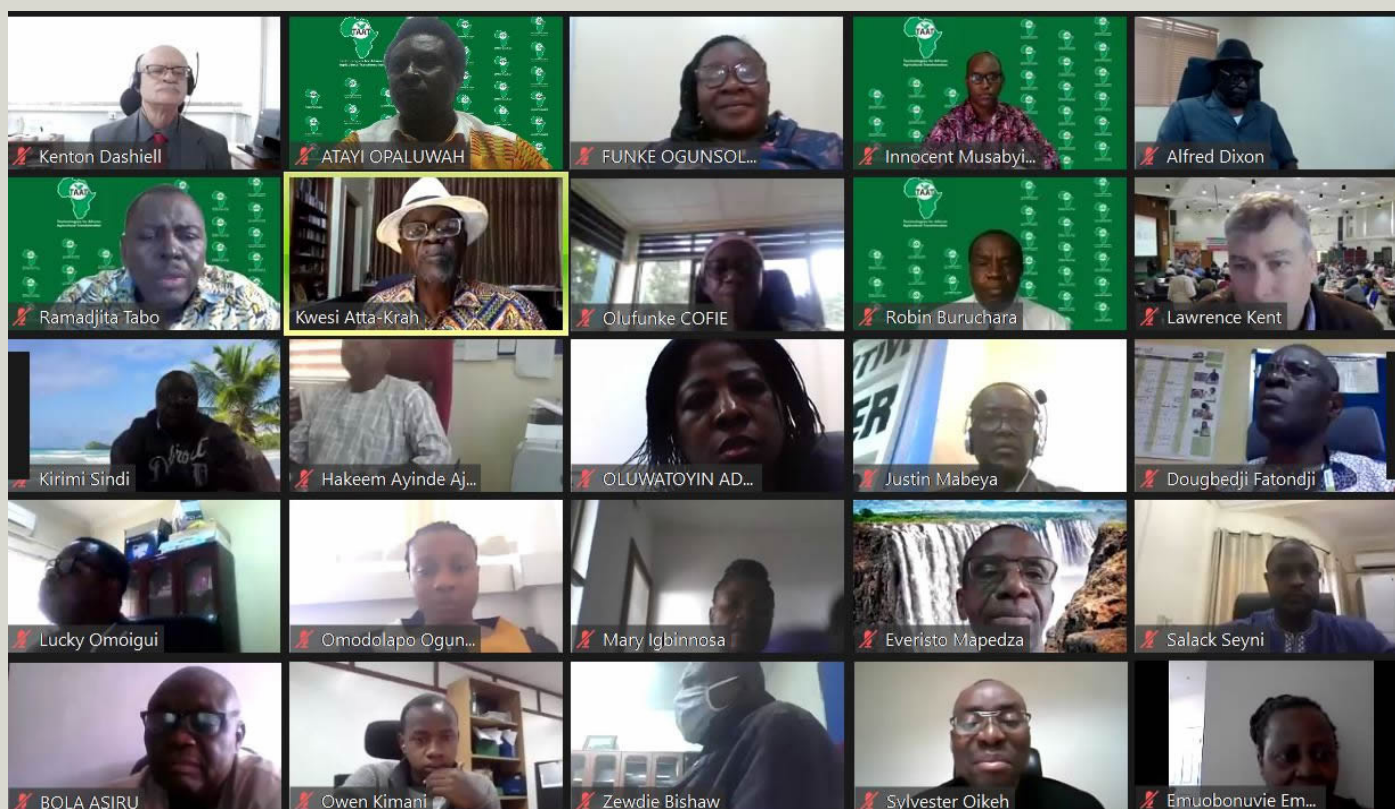
The Pan Africa Bean Research Alliance ([PABRA](#)) Senior Advisor, Dr Robin Buruchara, highlighted their commodity approach to intensify high iron beans (HIB) production, and influence the demand of HIB, and market linkages. “This has led to

increased productivity of iron bean varieties in Zimbabwe from 0.6 t/ha to 1.4 t/ha. There is now an increase in other countries like Burundi,” he said.

[ICRISAT](#) Research Program Director Dr Ramadjita Tabo said they had focused on building farmers’ capacity with proven technologies to address low productivity and production, increase value-chain efficiency, and reduce postharvest losses. Also, they work inclusively with farmers, extension agents, government, and private partners to improve the yield of sorghum and millet by providing them with improved varieties, hybrids, and biofortified seeds.

Head of TAAT Clearing House Innocent Musabyimana appreciated everyone for their contributions. He stated that the TAAT Clearing House is responsible for getting and profiling technologies provided by CGIAR centers and other specialized research institutions and packaging them for farmers’ use. “Achieving this food system in the continent will only happen through a strong partnership,” he said.

Funded by AfDB, TAAT aims to increase agricultural productivity in Africa through the deployment of proven and high-performance agricultural technologies. The program is implemented by IITA in close partnership with other CGIAR Centers and specialized technical centers (e.g., AATF, IFDC), Forum for Agricultural Research in Africa ([FARA](#)), national agricultural research and extension systems, and private sector partners.



Participants in the virtual Science Days side event.

The new matooke hybrids were first developed by IITA and the [National Agriculture Research Organization](#) (NARO) of Uganda and named [NARITAs](#). They were later tested in Tanzania by the [Tanzania Agriculture Research Institute \(TARI\)](#) and partners IITA, NARO, and [Alliance of Bioversity International and CIAT](#), to identify those most suited to Tanzanian fields and farmers.

The four NARITA hybrids, now called TARIBAN 1–4, were officially released in March and announced by the Minister of Agriculture, Hon. Prof. Adolf Faustine Mkenda, during his budget speech in parliament in May 2021. The new varieties are resistant to black Sigatoka leaf disease and banana weevils, with potential [yields](#) ranging from 18 to 35 t/ha/year. Currently, farmers’ average productivity is around 7 t/ha/year.

The East Africa Highland cooking banana, locally referred to as “matooke”, are the main staple for millions of people across the region, where banana fields often blanket whole hillsides, stabilize the landscape, and provide a key source of income to communities in the Great Lakes Region of Africa. They are steamed or boiled, and then sometimes mashed before consumption.

Farmers in Tanzania have been growing the same ancient banana varieties for hundreds of years. Pests and diseases perpetually afflict these varieties affecting yield and quality.

The National Coordinator for banana research at TARI responsible for leading this research, Dr [Mpoki Shimwela](#), noted that this was a major achievement for the country’s efforts to improve its food security and the incomes of rural farmers. He was instrumental in demonstrating the value of these [hybrids to the Tanzanian farmers during the Nane Nane national farmers’ day](#).

“This is very good news for the farmers as they have been eagerly waiting for these varieties as theirs (varieties) are highly susceptible and production has been devastated by pests and diseases

for many years. Many of the farmers had given up on growing banana altogether despite it being a major staple crop for the country,” he said.

[Rony Swennen](#), who leads IITA’s banana breeding, welcomed the news of this official release noting it as a huge milestone for the country and region. He also attributed the success to the excellent collaboration between the national partners, NARO and TARI, and the international partners, IITA and Bioversity International, that facilitated the fast-tracking of this release—an otherwise long, drawn-out process. The journey had began many years ago in Uganda, following more than 20 years of breeding collaboration between IITA and NARO, which saw 27 matooke hybrids (NARITAs) developed.

The release of NARITAs into Tanzania from Uganda strengthens the partnership between the national programs of both

countries in the spirit of East African cooperation through research, thereby giving NARO and TARI a stake in the agenda for regional development. The NARITAs were first brought to TARI to test yield performance and local acceptability in all the banana production areas under the IITA-led [Breeding Better Bananas project](#).

Based on various characteristics such as taste, cooking texture, and yield, the best four were identified as those that farmers preferred. This was achieved in a record five years. The next steps will be to develop a robust seedling production and distribution system of the new hybrids to enable farmers to access them across the country.

For more information, contact Dr Mpoki Shimwale (TARI), [mpokis@yahoo.com](mailto:mpokis@yahoo.com); Dr Priver Namanya (NARO), [bwesigyep@gmail.com](mailto:bwesigyep@gmail.com); and Prof Rony Swennen (IITA), [r.swennen@cgiar.org](mailto:r.swennen@cgiar.org).



*Left: A farmer admiring TARIBAN in one of the farmer field trials in Bukoba, Tanzania. Right: The matooke hybrids are pest and disease resistant.*

## 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.

# IITA and partner Touton Ltd. consult coffee farmers on diversification strategies

The IITA Uganda Climate-Smart Agriculture (CSA) Team conducted focus group discussions with more than 150 smallholder coffee, vanilla, and cocoa farmers in Kasese district, western Uganda, last May.

The activity is part of a collaboration between the [Sustainable Food Lab](#), [USAID](#), [Touton](#), and IITA that brings together the private sector, agricultural researchers, and smallholder farmers to improve smallholder farmer livelihoods.

Kasese—about 370 kilometers west of Uganda’s capital city, Kampala—is located on the border between [Uganda](#) and the [Democratic Republic of the Congo](#) in the Rwenzori mountains. The mountain range [includes Africa’s third highest glacial peak after Kilimanjaro and Mount Kenya – Mount Margherita, which stands at 5,109 meters.](#)

Coffee has been grown in the Rwenzori region for generations. [Top-quality Ugandan Arabica coffees are among some of the best in the world](#), according to Coffee Review. In 2018, it was estimated that only 12% of households in the Kasese landscape had electricity, 29% had piped water, and only 3% had modern toilet facilities. IITA and Touton are [supporting farmers in this landscape to improve their livelihoods](#) from diversified strategies.

The IITA research team and Touton field staff jointly conducted focus group discussions with subgroups of men, women, and youth in three subcounties (Kyondo, Kisinga, and Kyarumba). Meetings took place on the slopes of the mountains in churches, school rooms, and in homesteads hosted by the community. The community shared their experiences, challenges, and opportunities for improved livelihoods.

This engagement allows IITA and Touton to better understand the different experiences and perceptions of the farming community, with farmers speaking of their challenges in making a decent living from smallholder farming. Issues of land size, low productivity, lack of extension support and knowledge of good agronomical and climate-smart practices, were among some of the issues highlighted.

IITA’s David Mukasa, lead researcher, says: “There are several issues to address such as soil fertility, improved crop varieties, and improved knowledge of good agricultural and climate-smart practices. The IITA team will consolidate and analyze the data collected and

recommend strategies to address the production constraints of the Rwenzori farmers.”

Faith Okiror, IITA Communications and Behavioral Change Expert conducted the women’s focus group discussions, said: “It is always exciting to interact with the women smallholder coffee farmers whose knowledge adds invaluable insight into the research conducted by IITA. Understanding the challenges and opportunities of the women farmers add context to the research findings.”

The youth sub-group discussions were conducted by David Amwonya, the IITA Uganda Climate-Smart Agriculture Team Data Analyst. He said: “The focus group discussions will help us validate data collected by Touton in a household survey conducted with a sample of 357 farmers from the same groups.” David is leading the analysis of the data collected back in Kampala. Preliminary results will be further analyzed by the research team to identify actionable strategies that will contribute to improved farmer livelihoods in the region.

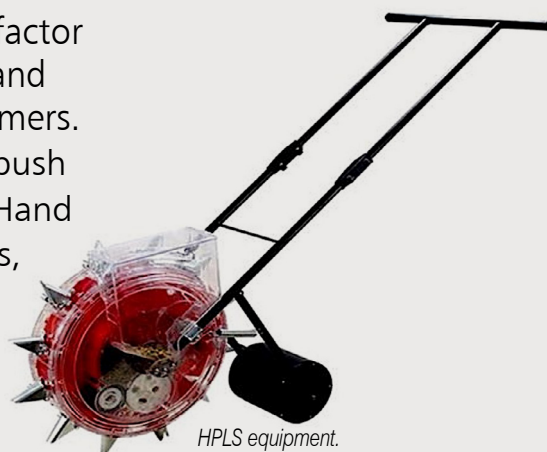
Touton and IITA are committed to continue to partner with Kasese’s smallholder coffee, vanilla, and cocoa farmers through their producer organizations in testing the co-developed strategies to improve the knowledge and capacity of the farmers for improved livelihoods and climate resilience in the region.



The IITA research team and Touton field staff jointly conducting focus group discussions.

# Mechanical legume planter reduces drudgery for female farmers in Mozambique

Mechanization has been recognized as an essential factor in agriculture development efforts to save on labor and time in many farming operations for smallholder farmers. In Mozambique, [IITA](#) conducted a study on a hand push manual seeder (HPMS), also known as the Legume Hand Push Manual Planter (LHPMP), to be used by farmers, particularly female farmers, in the establishment of common legume crops, including common beans, cowpea, groundnut, and soybean fields.



The introduction of the HPMS was a response to the competing demands of female farmers' time during the planting season as they juggle fieldwork and caring for the family. As a result, women do not establish enough acreage of legumes and other crops. The lack of time also leads farmers to practice traditional farming of randomly planting seeds, leading to low or high unit spacing and dumping many seeds in a hole. Also, random planting causes difficulties in weeding, spraying, and harvesting, leading to poor yield.

The study noted that both male and female farmers were willing to use HPLS due to ease of use, simplicity, and versatility in planting a wide range of legumes and cereals. Other

benefits of the equipment are that it can operate in various soil textures and weathers, is light, and consumes no fuel.

"The planter is attractive and easy to use and adapted to the planting of different seeds. The single-row, multi-crop planter is maintenance-free, except for two bearings that require regular lubrication to reduce the friction of the rotating drum. The farmers welcomed it eagerly," says [Canon Engoke](#), a Seed Systems Agronomist at IITA Mozambique and one of the researchers working on popularizing the planter.

The planter has proven its potential to save time and improve yield when following recommended line spacing and good

agronomic practices. The study noted that the farmers use half the time and reduced costs when using HPLS for both cowpea and soybean compared to the hand hoe and rope line planting. As more women are involved in cowpea farming for food security, the equipment can save planting time, increase yields, and increase the number of female farmers in soybean production.

The amount of time saved with HPLS could be invested to increase production area for the same legume or diversify to others and complete demanding household chores without affecting crop production.

With all the benefits demonstrated by the planter, some farmers, especially the youth, have expressed an interest in purchasing several of them to offer planting services in communities at a more competitive fee than using the hoe in line spacing. This will create employment among female and youth farmers.

IITA has engaged some artisans to fabricate the HPLS in Mozambique to make it widely available. Innovations are under way to modify it into planting and marking the next line in one run, eliminating the need to use a rope and saving even more on costs and planting time.

IITA conducted theoretical and practical training sessions for farmers on the use of HPLS machines in demonstration cowpea and soybean fields in the Nampula and Zambezia provinces of Mozambique.

The research was supported by [Grain Legumes and Dryland Cereals \(GLDC\)](#).



A female farmer using the HPLS to plant soybean.

## 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.



# IITA Forest Center prepares trainers for Olokemeji School Conservation Clubs

As the Olokemeji reforestation project swings into full gear, the [IITA Forest Center](#) held its first training for School Conservation Club (SCC) leaders in Ibadan on 15 and 16 July. This partially fulfills the project's mandates to bring children on board as critical conveners of biodiversity conservation efforts for sustainable succession.



*Olokemeji SCC trainers in the field learning about environmental conservation.*

The two-day instructor-led course equipped the volunteer teachers with the required skills to engage school children as ambassadors of biodiversity conservation in fun yet educative ways.

In her welcome address, IITA Deputy Director General, Corporate Services, Hilde Koper, expressed her pleasure at seeing the training participants and their interest in creating the clubs. She recognized them as ambassadors of IITA and biodiversity champions to promote reforestation and environmental conservation in their

community and among school children. She stressed further that "Our environment is important for the future of everybody."

In his lecture on Biodiversity Conservation, Ademola Ajayi, IITA Forest Center Environmental Education Officer, emphasized that we experience habitat degradation due to farming and urban development. He highlighted the forest's role as the "lungs of the earth", noting that we need our forest reserves to breathe clean air. He explained the difference between conservation and preservation:

"Conservation does not mean 'don't touch'; it means 'use sustainably'. To conserve, we raise awareness and contribute actively to conservation actions."

Speaking on Child Rights' Protection, the Head Teacher at the International School of IITA, Derek Smith, said: "We must not just prevent the abuse of children; we must take steps to report child abuse anywhere we see it occur." He called on participants to observe Child Protection Policies as they raise young conservationists in school pupils.

Educational Consultant and Early Childhood Specialist Anu Akinola took participants on an exciting journey, giving valuable hints on creating their Conservation Club and making it the go-to club for school children. "A good conservation club coordinator must be knowledgeable about the environment, bring innovations to children in a fun way, be creative and hands-on, be internet savvy, and have impeccable communication skills," she added.

In her address on risk management, the Head of Administration in IITA's West Africa Hub, [Sylvia Oyinlola](#), enumerated anticipated risks associated with reforestation Olokemeji and how to address them. The exercise elicited useful contributions from the participants and equipped them with skills to solve anticipated challenges during the School Conservation Club activities.

Representatives from Nigerian Breweries (NB) Plc, project partner and donor, gave participants an insight into the company's reasons for committing to Olokemeji Reforestation. They said "it is their way of giving back to the community where they take 95% of their production resource—water."

Jennifer Uchendu, Head of Sustainability and Regulatory Relations, said NB's *Brew A Better World Agenda* takes community and stakeholder engagement seriously, as much as it commits to planting trees to reforest Olokemeji. The latter directly contributes to mitigating soil erosion and improving the water-retention capacity of the region's underlying aquifers, while the former contributes to improving the quality of life of community members and ensuring the project's sustainability.

The training participants were enthusiastic about converting all they had learned to raise pupils committed to conserving natural resources in their different SCCs.