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Adopting new cassava genotypes in gari production

Cassava, a perennial woody shrub with an edible root, is one of IITA-CGIAR's mandate crops and a major staple crop in Africa. There are different varieties that possess characteristics suitable for numerous food preferences and delicacies.

Women peeling cassava for processing at IITA Cassava processing center.

One of the widely consumed delicacies of cassava is *gari* as it is known in several African countries. Gari is a roasted, fermented cassava grit, soaked in cold water, or prepared with hot water as *eba*—a food for millions of people in developing countries.

With IITA-CGIAR breeders researching new varieties to address food security, climate change issues, consumer preferences, and nutrition security, researchers carried out a study to evaluate the use of the biophysical attributes of *gari* and the textural characteristics of *eba* to determine the possible substitution of an adopted cassava variety (TMBE419), with the improved genotypes from the Institute's breeding program. According to the study, 30 improved varieties, including TMEB419, were harvested

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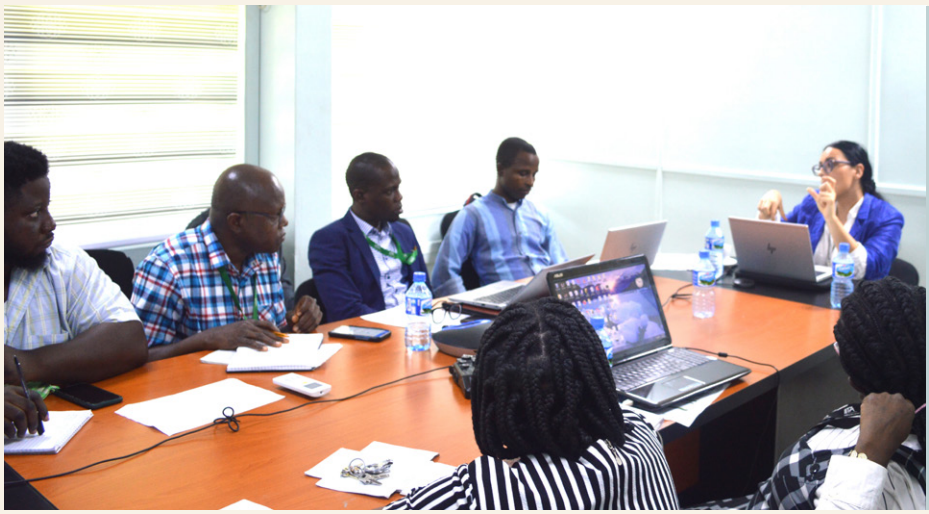
IFAD commends IITA-led Zero Hunger Initiative's mid-term successes



The IITA-led Zero Hunger Initiative (ZHI), funded by the International Fund for Agricultural Development (IFAD), organized a three-day, mid-term review of the Agricultural Transformation in the Nigerian Federal States and Togolese Regions towards achieving Zero Hunger Project in three states in Nigeria and two regions in Togo.

The IFAD Representative Dr Viviane Fillipi and the ZHI team discussing next steps for the next phase of the project.

The meeting took place from 22 to 24 September at IITA's Ibadan headquarters and appraised the project's progress.

The mid-term workshop highlighted the project's first phase successes and sustainability plans while outlining the action points for completion.

ZHI is focusing on goal two of the Sustainable Development Goals (SDGs) of the United Nations to eradicate food insecurity in West Africa. The project, being implemented by IITA and AfricaRice, is in collaboration with the governments of Nigeria and the Republic of Togo.

The project is achieving this by ensuring sustainable agriculture among smallholder farmers in rural communities in Benue, Ebonyi, and Ogun states in Nigeria; and the Kara and Plateaux regions of Togo.

During the meeting, IITA Deputy Director General, Partnerships for Delivery (DDG-P4D), Kenton Dashiell, appreciated IFAD's contribution towards achieving a successful project. He stated that policy is the critical component of the ZHI project, and stakeholders should explore that as much as possible and ensure that activities are directed to serve as a stimulus to improve policies. These policies can, in turn, help farmers and stakeholders involved in achieving zero hunger.

In addition, Dashiell mentioned that working with the right policymakers would lead to the successful implementation of the project with a larger population. "I would encourage the IITA-ZHI team to maximize this opportunity, and we would do our best to make sure this project reaches its peak," he said.

ZHI Project Lead Adebowale Akande acknowledged IFAD for giving IITA and AfricaRice the opportunity to implement the project. He mentioned that ZHI has been filling the gaps in hunger eradication in the implementing states. "We are looking forward to your reviews on the project and also to including more states to spread the benefits of the project across Nigeria," he said.

ZHI Monitoring, Evaluation, and Learning Manager, Oyewale Abioye, gave an overview of the three phases of the project impact pathway—policy analysis, technology and innovation, and policy engagement for technology uptake.

Abioye highlighted some of the project's achievements, including policy instrument assessment, productivity increase of rice and cassava farming systems, training of trainers, and step-down training by extension agents and lead farmers.

Discussing the next steps with action points into 2023, the Zero Hunger project will spread across the project team and other stakeholders. This would begin with creating a plan of action, working with the media for visibility, and networking with development partners and other relevant stakeholders, including former Nigerian President Olusegun Obasanjo and other state governors.

He added that the team aims to continuously drive policies across the board and expand communication channels toward strengthening agricultural sustainability.

Wrapping up the meeting, IFAD representative, Dr Viviane Fillipi, commended the Zero Hunger team for the productive processes and outcomes. She also mentioned that IITA's unique identity would be leveraged for implementing other projects. "I encourage the team to put in the same enthusiasm and determination in the second phase of the project," she said. *Contributed by Anita Akinyomade*

The ZHI team with the IFAD Representative after the meeting.

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Adopting new cassava genotypes in gari production

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from the Ikenne demonstration site in Ikenne, Ogun State in Nigeria, and processed into *gari* and *eba* for evaluation. TMBE419, an outstanding variety widely used in *gari* production due to high product yield and good biophysical attributes, served as a check in the study.

IITA-CGIAR researchers in Ibadan observed the biophysical attributes of *gari*, looking at swelling power (SWP), dispersibility, water absorption capacity (WAC), peak, breakdown, and final viscosity, peak time, and pasting temperature. The moisture, ash, starch, amylose, and cyanogenic potential (CNP) content were also evaluated.

Although the cohesiveness, moldability, stretchability, and softness of *eba* are essential and desired by consumers at various levels depending on the region, culture, and personal preferences; the breeding program at IITA-CGIAR is working with partners across Africa to develop varieties that are disease- and pest-resistant, low in the potential to generate cyanide, drought-resistant, early maturing, and high yielding.

Women frying gari at IITA Cassava processing center.

The results of the study show that there were significant differences in all the biophysical attributes of the *gari* samples as well as the textual attributes of the *eba.* The sensory texture attributes depict that all the *eba* was moderately soft, sticky, and moldable. Following principal component analysis during the study, *gari* made from TMS14F1285P0006 and TMS13F1053P0010 genotypes may have similar dispersibility, swelling power, and peak and breakdown viscosities as the TMBE419 variety. The stickiness of the *eba* prepared from these genotypes may also be like that of the TMBE419 variety. Therefore, TMS14F1285P0006 and TMS13F1053P0010 genotypes may be suitable substitutes for producing *gari* like the TMBE419 variety.

The results from the study will help to increase food production and improve the livelihoods of farmers. Smallholder farmers can grow suitable cassava substitutes for producing *gari*/*eba*. *Contributed by Timilehin Osunde and Tolulope Akinola*

Contact Busie Maziya-Dixon on b.maziya-dixon@cgiar.org for more information. Research theme: Cassava

Keywords: cassava, gari, food security, smallholder, farmer

IITA gender team trains plant breeders on gender-responsive breeding

As part of activities under the Accelerated Breeding (ABI) and Market Intelligence and Product Profiling (MIPPI) initiatives, IITA-CGIAR, in conjunction with the Accelerated Varietal Improvement and Seed Delivery of Legumes and Cereals in Africa (AVISA), AFRICAYAM and NEXTGEN Cassava Project, organized a three-day Gender-Responsive Breeding training. The training, held at IITA headquarters on 21-23 September, enlightened plant breeders from IITA and partner organizations on the need for and ways to include gender-responsive approaches in

Deputy Director General, Corporate Services, Hilde Koper, giving an opening speech.

breeding programs. Gender Specialist Martina Cavicchioli, Gender Research Postdoctoral Fellow Millicent Liani, and HarvestPlus Cassava Breeder Elizabeth Parkes anchored the training.

In his opening speech, Head of IITA Breeding, John Derera, mentioned that the training is occurring at a good time when plant breeding is experiencing transformation through breeding modernization programs in One CGIAR. IITA East Africa Hub Director Leena Tripathi also stated that promoting gender in breeding makes adopting products easy, as the preference of both men and women is considered.

Head of IITA Capacity Development Office, Zaïnatou Soré, highlighted IITA's work in incorporating gender in all its activities, adding that the training aligns with the Institute's vision. Deputy Director General for Corporate Services, Hilde Koper, intimated that considering more women in farming would result in more female scientists and more female breeders for gender balance.

In his presentation, Head of NEXTGEN Cassava Breeding Project, Chiedozie Egesi, spoke on the importance of gender inclusion in breeding activities as part of the NEXTGEN project. He noted that five new cassava varieties have been released in Nigeria for the first time based on gender-responsive breeding, using market intelligence tools. Cassava Breeder Peter Kulakow stressed the importance of social inclusiveness and gender in breeding to prioritize the social impact of public breeding. IITA Senior Scientist and Gender Specialist, Steven Cole, added that integrating gender into crop breeding helps breed products that reach more users and creates better social impact. "New products can now be better designed and modified to benefit all consumers—diverse groups of people," he said.

Speaking on Gender Concepts and Awareness, Liani emphasized gender integration versus gender mainstreaming to help breeders understand gender-responsive breeding. She added that gender is not limited to men and women but covers the whole diversity of people and roles in agriculture, including marginalized groups. Associate Social and Gender Scientist Béla Teeken and Cavicchioli taught participants to set breeding objectives by determining who they are breeding for and the required preferred traits among various users along the value chain to ensure product adoption and social impact.

Teeken also spoke about "Gender Up" while listing Gender-Responsive Tools and Applications. He explained that the tool identifies gender and other relevant diversities among innovation users for more successful and inclusive scaling of agricultural innovations. He also stressed the importance and potential of participatory methods to assess knowledge of diverse crop users, such as participatory processing and the Tricot citizen science on-farm testing method used in cassava breeding that has shown promise in measuring genetic gain in farmers' fields.

Presenting on Trait Prioritization among users and social impact, Senior Research Associate Olamide Olaosebikan and Senior Research Supervisor Bello Abolore advised breeders to see farmers and processors as partners in research and result validation. Olaosebikan explained that this enhances the participation and feedback quality to inform breeding, while Abolore noted the need for researchers to give feedback to participants and partners in research communities.

Cassava Seed Systems Specialist Mercy Diebiru-Ojo spoke on gender dynamics in seed systems. She highlighted the key gendered concepts for seed system outcome and explained the strategies the cassava team used to drive women's participation. A major strategy she mentioned was collaborating with an organization to support 20 women with land, stems, and farm management. "Sixty people became cassava seed entrepreneurs, and 58% were women," she said.

Participants were engaged in practical sessions to understand the need for applying the intersectionality lens in research to accommodate diverse groups. They also had group discussions on ways to improve breeding strategies for various crops using gender-responsive approaches. Head of IITA Genetic Resources Center, Michael Abberton, awarded certificates to participants at the end of the training. *Contributed by Ochuwa Favour Daramola*

The cowpea breeders group discussing ways to improve cowpea breeding using gender-responsive approach.

Burkina Faso proposes partnership with IITA for youth and women's engagement in agribusiness

A delegation from the Embassy of Burkina Faso in Nigeria, led by the country's Ambassador to Nigeria, HE Pascal Gouba, accompanied by Second Counsellor Desire Sawadogo and Head of Protocol, Zakaria Sambare, visited IITA to discuss their country's interest in partnering with the Institute.

Pascal Gouba, Burkina Faso Ambassador to Nigeria.

The proposal for a collaborative partnership with IITA follows IITA's mission trip to some government ministries in Burkina Faso two years ago for potential resource mobilization. "This visit to IITA has been on our priority list for a long time, and we are excited it finally happened," he said.

IITA Deputy Director General, Corporate Services, Hilde Koper, gave welcome remarks as West Africa Hub Director Prof Michael Abberton gave an overview of IITA research activities in West Africa. Head of IITA Capacity Development Office, Zaïnatou Soré, who represented IITA-Sahel Hub R4D Director Tahirou Abdoulaye, spoke about the Institute's research activities in the Sahel region.

Ambassador Gouba, who went on a two-day tour of IITA facilities, expressed his pleasure at the robust and diverse research going on at the Institute. "You have to visit IITA to appreciate what this institute is doing in agricultural research," he said.

"IITA has provided a wholesome view to the value-addition approach in agriculture, and it has given us ideas of projects to suggest to the government of Burkina Faso," he added. He also noted that they would consider both youth and women's engagement in agribusiness by suggesting a trainer's training for participants from Burkina Faso by the IITA Youth in Agribusiness Office to enable them to replicate the knowledge and skills in Burkina Faso.

The ambassador appreciated IITA's hospitality and congratulated the Institute's management for its leadership and professionalism.

Contributed by Dajie Odok

Top: Burkina Faso delegation in a meeting with Senior Management. Bottom: A group photo of IITA staff and Senior Management, with the delegation from Burkina Faso.

LAPO to enhance its CSR through tree planting partnership with IITA

Three delegates from LAPO Microfinance Bank Limited visited IITA-CGIAR on 22 September. Their goal was to explore collaboration with IITA in tree planting and agroforestry to enhance their Corporate Social Responsibility (CSR). The inclusive tree-planting initiative would aim to improve the livelihoods of their local beneficiaries.

The team was welcomed by Deputy Director General, Partnerships for Delivery (DDG-P4D), Kenton Dashiell; DDG Corporate Services, Hilde Koper-Limbourg; and Head of IITA Forest Center, Adewale Awoyemi.

LAPO's Head of Sustainability and CSR, Brandie Stevens-Igbe, gave a brief background of the organization's activities and the aim of their visit. She said, "LAPO started as an NGO 30 years ago. It metamorphosed into a microfinance bank aiming to give the poor, underbanked women, and other beneficiaries money to participate in the economy, up their skills, boost their income, and improve their livelihoods."

Stevens-Igbe continued, "We want to contribute by planting trees to the existing food crop plantations of our rural clients so they can gain more from their existing source of livelihood, which is farming."

Responding to their request, Awoyemi said, "I like it when people talk about CSR in relation to the environment, biodiversity, and improving rural livelihoods. Your request is in synchrony with some of our projects; the Olokemeji Reforestation Project, for example. There, we use the bottom-up approach to engage community members to own the reforestation project and protect trees rather than cut them down."

Awoyemi assured the LAPO team that they had come to the right place, adding that the Forest Center supplies tree seedlings across the ecological zones of Nigeria, even to the northern Savanna in Nigeria, and can deliver millions of them.

He also counseled the team to leverage IITA's years of research to introduce improved varieties of food crops to their clients. He assured them that the Forest Center possesses expertise that will improve the global standard of LAPO where the project is concerned. He said the Forest Center's multi-pronged tree planting approach is designed to deliver on various counts, including community engagement, habitat restoration, climate change mitigation, greener environment propagation, and biodiversity support.

Dashiell and Koper-Limbourg congratulated the team for finding the support they needed from IITA and assured them of the best cooperation and service from the Forest Center.

The LAPO representatives toured IITA facilities, including the Forest Center's nursery, where they saw first-hand various seedlings and trees that made them connect further with nature. They plan to pilot the project in Ibadan and Benin and expand to the 34 states LAPO currently operates in Nigeria.

Contributed by Folake Oduntan

Top left: Adewale Awoyemi assuring the LAPO team of the Institute's capacity to support and implement their tree planting course. Top right: Stevens-Igbe and her colleague, Linda Godwin, Assistant Sustainability and CSR Manager, trying the miracle berry fruit at the Forest Center Nursery. Bottom: Kenton Dashiell welcoming the LAPO team to collaborate with IITA.