



The production of high-quality seed yam tubers of released varieties using revolutionary high ratio propagation technologies (HRPTs) such as the Temporary Immersion Bioreactor System (TIBS) and the aeroponics system (AS) presents new business



Beatrice Aighewi, YIIFSWA-II Seed Specialist, talking to the participants during the tour.

opportunities for yam producers in Nigeria and Ghana to intensify food production for economic gain and food security.

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On 18 October, the Yam for Income and Food Security in West Africa phase two (<u>YIIFSWA-II</u>) project hosted eight seed enterprises and their seed growers and other project partners from Ghana and Nigeria, to demonstrate the feasibility of using IITA-generated research on TIBS and AS for the production of early generation planting materials by establishing a 5-hectare field with AS-derived single node seedlings. A 3-hectare field has so far been established.

To kickstart the program, the Deputy Director, Research for Development (R4D) IITA West Africa, <u>Michael Abberton</u>, welcomed the participants to the Institute on behalf of Robert Asiedu, Director (R4D) **Continued on page 2**

Stakeholders in Tanzania plan cassava transformation to support agriculture-led socioeconomic development



Guest of honor, Prof Siza Tumbo, giving the opening remarks.

The Cassava Compact of the <u>Technologies</u> for African Agricultural <u>Transformation</u> (TAAT) led by <u>IITA</u> and funded by the <u>Africa</u> <u>Development Bank</u> (AfDB) has initiated activities in Tanzania, with a three-day national stakeholders' workshop.

The meeting was convened on 16–18 October by IITA in partnership with the Tanzania Agriculture Research Institute (TARI) and the Agricultural Sector Development Program (ASDP II) and brought together policymakers, researchers, the private sector, and farmers in the country's capital, Dodoma, to develop a high-impact plan for transforming cassava in the country and contribute to its agriculture-



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led industrialization agenda. The meeting was facilitated by the Tanzanian Deputy Permanent Secretary of the Agriculture Ministry Prof Siza Tumbo who welcomed the initiative. He noted that while cassava was the second most important subsistence food crop after maize in Tanzania, with 84% of the total production going into food consumption, its production levels were very low.

"Cassava has many other attributes and potential markets which we are not exploiting as a country including being a source of raw material for industries both in and out of the country," Prof Tumbo said.

The TAAT Cassava Compact seeks to achieve rapid cassava intensification through raising farm-level productivity, improving the efficiency of processing, and increasing market opportunity for the actors. It is part of continent-wide TAAT initiative under the AfDB's agricultural transformation agenda, Feed Africa.

"This program will scale out proven technologies to transform cassava in the country into an industrial crop and address challenges facing cassava farmers in the country. These technologies include highyielding improved varieties, integrated pest and disease management, processing and value addition, and use of fertilizers among others," said Dr Geoffrey Mkamilo, TARI Director General.

During the meeting, presentations were made by the various actors along the cassava value chain including ongoing research initiatives to develop improved high-yielding varieties and tackling pests and diseases, processing and value addition, establishment of clean seed systems, and weed management.

The participants also mapped the ongoing cassava activities across the country and identified areas with the largest concentration of activities and actors along the cassava value chain leading to the formation of four 'agripoles' in the Coast region, Eastern region, Western region for Kigoma, and one on cassava seed systems.

The agripoles bring together all the actors along the cassava value chain and help to identify gaps and how to address them. Also they ensure that all actors along the value chain benefit equitably.

"Through the agriploles, we will introduce both the technologies and technical support to make investments in cassava a profitable venture. The technologies include improved high-yielding and nutritious varieties, business-efficient and effective integrated pest and disease management options, good agricultural management practices, and appropriate mechanization," said <u>Adebayo</u> <u>Abass</u>, TAAT Cassava Compact coordinator and a value chain specialist at IITA.

TAAT will also introduce technologies to process cassava into food products, starch, and flour which could be further processed to high-value products such as sweeteners, adhesives, biscuits, noodles, bread, and cakes.

With an annual production estimated at 6.8 million tons, Tanzania is the 12th largest producer of cassava in the world and the sixth largest in Africa following Nigeria, DR Congo, Ghana, Angola, and Mozambique, respectively.



Participants at the cassava stakeholders meeting in Tanzania.

YIIFSWA-II project demonstrates business opportunities Continued from page 1

West Africa. He said that "The successes of IITA had been based on the commitment to innovative research that leads to the development of revolutionary technologies like HRPTs for quality seed yam production." He implored the participants to learn as much as they could and use what they have gained into their enterprises to maximize impact in Ghana and Nigeria.

"This is the first time that seed yam production is being done on a large scale using the TIBS and AS technologies. Seed entrepreneurs invited to witness the event can use these technologies efficiently to produce clean and disease-free seed yam for sale. The AS at IITA can generate seedlings for a 10-hectare field because the multiplication ratio of yam has increased from 1:5 to at least 100 every three to four months," said <u>Norbert Maroya</u>, YIIFSWA-II Project Leader. The seed entrepreneurs and their seed growers were given a grand tour of YIIFSWA seed production activities in IITA. They were shown how clean seed/nucleus stock are produced using TIBs, virus indexing and diagnostics, recently harvested yam tubers from AS-derived seedlings, the aeroponic system, nurseries filled with AS-derived seedlings, and 3 hectares of AS-derived plants. Participants also tasted yam composite products and were amazed at the diverse range of value addition.

At the closing, participants remarked on the work done, congratulating IITA on its achievements. "Previously many scientists didn't want to work on yam because it was considered a difficult crop to handle, until IITA broke the jinx on hybridization. As a result, several improved varieties were developed and released but no seed was given to farmers. Now IITA has done it again! It has broken the jinx on quality seed supply by adapting revolutionary HRPTs for seed yam production of improved varieties.

Kudos to IITA for championing yam research and for being at the forefront of yam development. Stay on the course and continue to develop the value chain," <u>Dr</u> <u>John Ikeorgu</u> of YIIFSWA said.

A seed grower from Nasarawa State said, "I was surprised that yam can grow in the air and without soil. If I didn't see it, I wouldn't have believed it. They are even using the vine to produce tubers. This is very surprising and new to me. They showed us plenty of tubers; the tubers are very clean. I wish I could take one home to go and produce seed and plant for myself. Kai, they have done well. I will go and tell my people at home that this is what they are doing here, so that we can key into it."

AgResults holds Advisory Council meeting; deliberates on future plans

AgResults Aflasafe[™] pilot project held its quarterly meeting on 19 October, at <u>IITA</u> AgResults-Aflasafe conference room, to update, exchange ideas, and create a platform for interaction between the project's National Advisory Council members and the project management staff.

The stakeholders strategized on ways to improve and enhance the adoption of Aflasafe-treated maize for global food security. They also deliberated and discussed the successes and challenges encountered, and ways of improving along the value chains of the project to ensure full sustainability.

Debo Akande, AgResults Project Pilot Manager, presented the Project's progress report for the 20th quarter and plans. "The project has worked with 32 agricultural enterprises and over 50,000 farmers, and aggregated over 104,075 tons of aflatoxin-reduced maize. This accounted for close to 70% of the total maize produced under the AgResults project. The agribusinesses attracted a project-based incentive of US\$1,447,152.63 for a positive outcome of their innovative businesses in producing aflatoxinreduced maize," he further explained.

Ensuring the sustainability of the agricultural enterprises beyond the project implementation period remained the major point of discussion during the meeting. Suggestions towards the sustainability of the scale-up and commercialization of Aflasafe were given by the participants. These included policy advocacy among the different Advisory Council members, awareness creation among the general populace on aflatoxin issues, and continued quality control from IITA.



Kenton Dashiell, IITA DDG-P4D (3rd from left) with the Advisory Council members and AgResults staff.

The council members toured the AgResults/ Aflasafe laboratory which included the incubation room, media culture room, main microbiology lab, pyrosequencing and DNA sequencing room, cold room, and sample preparation lab.

They were also brought to the Aflasafe factory by <u>Lawrence Kaptoge</u>, General Technical Manager, <u>Business Incubation</u> <u>Platform</u> (BIP), who explained about plans to upgrade the plant to produce in bulk 5 tons/hour and install a 5-ton/hour packing unit at the HarvestField Industries Ltd (HIL) site in Lagos. HIL is the licensed manufacturer and distributor of Aflasafe in Nigeria. This upgrade is required to meet the high demand for Aflasafe in Nigeria and beyond.

Applauding IITA for its leading efforts to significantly improve the livelihood of farmers through its research, Stella Country Officer, Denloye, Nigeria. Partnership for Aflatoxin Control in Africa (PACA), delightedly said "Although IITA is well known for its transformation agenda, I am impressed with the fact that the AgResults project is contributing to secure the future of farmers not just in Nigeria but in the whole sub-Saharan Africa by improving their productivity and income levels. We are indeed proud to be associated with IITA!"

The project exploits the principles of the "pull mechanism" to successfully promote and disseminate Aflasafe. The project encourages private sector-driven and profit-oriented agriculture and provides smallholders with economic incentives for adopting Aflasafe[™].

Stakeholders strategize to revive cocoa in Nigeria during CocoaSoils program launch

The official launch of the CocoaSoils project was held at Cocoa Research Institute of Nigeria (CRIN), Oyo State, Nigeria, on 16 October. The launch, which is the last of the four in-country launches across West Africa, was dubbed "Sustainable intensification of cocoa production through the development and dissemination of Integrated Soil Fertility Management."

The program, in collaboration with IITA, was attended by over 112 scientists, experts, and key partners from the Federal Ministry of Agriculture and Rural Development (<u>EMARD</u>), the National Cooperative Financing Agency of Nigeria (<u>CFAN</u>), IITA, marketers, processors, farmers, Nigerian universities, government agencies/ministries, multilateral organizations, and other private NGOs.



Quadri Lekan, the Director of Tree Crop Unit and Dr Olayiwola Olubarniwa, the Director of CRIN, cutting the ribbon to launch the CocoaSoils program.

In his welcome address, <u>Dr Olayiwola</u> <u>Olubamiwa</u>, the Director and Chief Executive Officer of CRIN, reiterated that history and data had confirmed that cocoa production would dwindle by 20% by the year 2050 due to aging farmers, land degradation, and aged cocoa trees—a call for prompt action. He called on all stakeholders present to ensure the efficient management of the project and emphasized the need to synergize efforts to ensure full sustainability of cocoa in Nigeria.

The CocoaSoils Project Coordinator, <u>Dr</u> <u>Richard Asare</u>, gave a general overview and background of the program, saying that increasing cocoa production by expanding farm size was not feasible in the midst of present climatic conditions. He also restated the importance of increased productivity of cocoa globally, especially in the major cocoa-producing countries in West Africa.

Chief Audu Ogbeh, Federal Minister of Agriculture and Rural Development (FMARD), represented by Quadri Lekan, the Director of Tree Crop Unit, said that in the past, the impact of Nigeria's cocoa production increased national GDP by 30% and employed over 3,000,000 smallholder farmers. However, these had declined due to a plethora of problems ranging from production-related issues such as old plantations, aging farmers, poor soil management, climate change, poor planting materials, processing, marketing, and trade." He thus commended CRIN and the CocoaSoils Program team for their immense contributions, while encouraging them to work towards reviving and improving cocoa production in Nigeria.

The technical session continued with a brief presentation by the Coordinator on the different components of the project. This was followed by a presentation on partnership by the project's Partnership for Delivery Specialist, Dr Njankoua Wandji. The separate P4D presentation was the first of its kind throughout the launches across the four participating countries and it enabled the participants to appreciate fully this component. The Project Coordinator commended CRIN for being the first institution to give a letter of support which elicited interest and commitment from the Norwegian Agency for Development Cooperation (NORAD) to fund the project.

The program ended with the cutting of the ribbon to launch the program led by Lekan, Asare, and Olubamiwa.

IITA and partners propose sustainable seed system as a solution

Seeds are fundamental to the continuity of agriculture. A seed is the propagative part of a crop that is preserved for growing a new crop. Seeds occur in structurally different forms but they are the ultimate precursor in the planting process. Being a major supplier of breeder seeds in Nigeria and beyond, <u>IITA</u> and its partners have been making efforts to ensure that high quality seeds of a wide range of varieties are produced and made fully available and affordable to farmers and other agricultural investors as a means of ensuring food security.

A sustainable seed system involves a process of breeding seeds, selling them to farmers for cultivation to make profit, and ensuring food security. Dr Osman, Seed Specialist from Institute

for Agricultural Research (IAR) Zaria, says seed breeding is pivotal to all other aspects of agriculture. Breeder and foundation seeds are sold to other breeding companies that multiply the seeds. Most farmers are yet to strictly adhere to the seed system; rather, they plant grains, leading to low harvest.

According to IITA Seed Systems Specialist, Lucky O. Omoigui, developing a sustainable seed system in West Africa through effective research to improve food production and ensure reduction in hunger and poverty in the country is a major way of solving the problem of low harvest. He added that seed breeders have to be more focused on developing seeds that are resistant and tolerant to both biotic and abiotic stress and also to develop seeds that can adapt to monocropping and intercropping systems.

Seeds are highly marketable because they yield rapidly. However, the major challenge of the seed system in West Africa is the low number of breeders. To become a seed breeder one must be certified by the National Agricultural Seed Council and must be equipped with knowledge on the technicalities of seed breeding. Other challenges include inadequacy of facilities for processing and keeping the seeds in good condition.

A sustainable seed system ensures increase in seed production such that farmers can be supplied with improved varieties of seeds, leading to an increase in crop production and nutrition, as well as income for smallholder farmers.



Group photograph of Seed System Specialists and farmers appreciating their high yield.

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