



IITA and NASC call for greater involvement of private sector in seed yam production

Top seed production companies from across Nigeria convened at [IITA](#) on 6 August to explore novel technologies for high-ratio propagation of seed yam tubers.

IITA scientists working on the Yam Improvement for Income and Food Security in West Africa ([YIIFSWA](#)) project have developed novel high ratio propagation technologies such as [vine cuttings](#), [aeroponics](#), and [bioreactor](#) to address the constraints of quality, rapidity, and multiplication in seed yam production.

According to [Robert Asiedu](#), IITA's Director for West Africa, "The unavailability and high cost of high quality seed yam is the primary constraint in West Africa with the food security of about 900 million people heavily dependent on the availability and affordability of [seed tubers](#)."

Traditionally, farmers use tubers as seeds, which is inefficient and costly. High production costs are attributed to the use of seed yam tubers, which account for about 30% of the total yield and as much as 63% of the total variable cost incurred per season of cultivation. Moreover, most of the tubers are of low quality, containing pests (nematodes) and pathogens (virus), which decrease the yield of yam tubers.

Furthermore, using the traditional system, the multiplication rate in the field is also very low. In comparison to cereals which produce about 300 seeds from a single stock, yam produces about 1 to 5 tubers depending on the variety.

YIIFSWA Project Manager [Norbert Maroya](#) says: "Producing seed yam tubers using aeroponics, bioreactors, and vine cuttings is quick and cost effective, resulting in high-quality planting materials. The use of these novel, high-ratio propagation technologies gives a higher multiplication rate that is about 50-100 times more than the traditional system. It also significantly lowers the risk of nematode infestation and promotes faster multiplication and better and more uniform crop quality."



Norbert Maroya briefs seed company representatives visiting IITA.

"Seed is one of the most crucial elements in the livelihoods of agricultural communities. However, farmers—yam farmers in particular—are yet to benefit from using quality seed tubers because of inefficient seed production, and lack of distribution and quality assurance systems in the country. That is why we are calling for greater involvement of the private sector in the establishment of a formal seed system with the yam value chain," said Ebenezer Zidaforom, a representative from the National Agricultural Seed Council ([NASC](#)). Participants came from Greengold Construct Nig. Ltd, Mamora Seeds Ltd,

Da Allgreen Seeds Ltd, Bumfash Nigeria Ltd, Biocrops Ltd, NASC, all based in Abuja; Sylva Ejezie Farm Ltd, Asaba, Delta State; Lumiere Seeds Limited, Premier Seeds Nigeria Limited, Zaria, Kaduna; Romarey Ventures Limited, Jos; and Samlak Industries Ltd, Ibadan.

According to [Lava Kumar](#), head of IITA's germplasm health unit, "The new technologies for the production of virus-free plants and versatile diagnostic tools for virus indexing established in the YIIFSWA project are critically contributing to the development of clean seed yam systems."

There is a need for government, research institutions, and the private sector to collaborate and develop solutions for the provision of food, poverty relief, and resource equity.

IITA works with various international and national institutions such as NASC through projects such as YIIFSWA. YIIFSWA's goal is to help stop the decline and double the productivity of yam in the major producing countries, Ghana and Nigeria, that would stimulate a sustainable increase in incomes for smallholder yam producers and contribute to their food security and economic development.



Bulbil on yam plant in aeroponics.

Does Uganda sufficiently address gender inequalities in climate policies?

While climate and development policies in Uganda are becoming more gender sensitive, there is still a lot to be done in their formulation, regulatory framework, and implementation to ensure that they adequately cater to women and men's needs in the effort to reduce vulnerabilities and build resilience to the impacts of climate change.

This is one of the findings of a study by gender researchers from [IITA](#) and the [International Center for Tropical Agriculture \(CIAT\)](#) on how women and gender issues are framed in climate and development policies in Uganda. The aim of the study was to better understand how gender is addressed in national policies and identify gaps.

The study was conducted under the Policy Action for Climate Change Adaptation (PACCA) project that is led by IITA as part of the [CGIAR Research Program on Climate Change, Agriculture and Food Security \(CCAFS\)](#).

The team studied seven agricultural policies and five national plans, conducted key informant interviews, and held focus group discussions with men and women in two districts in Uganda—Rakai and Nwoya. A summary of the findings of the study was published by CCAFS in an [infonote](#) and a [blog article](#) written by one of the researchers, Mariola Acosta, a Research Fellow and PhD student at Wageningen University, The Netherlands.

'Victims' or 'key agents of change': The team found that the usage of the terminologies 'women' and 'gender' in the various national policies could reinforce gender stereotypes. Women are depicted as either vulnerable victims or associated with vulnerability or, on one hand, seen as 'key agents of change' crucial for successful development and climate work.

Researchers said that reinforcing gender stereotypes leads to simplification of development work instead of putting in place strategies to address key, structural gender imbalances combined with further analyses to better understand what men and women really need and want to successfully adapt to climate change.

Everybody's business is nobody's business: The study also found that since climate and gender issues were cross-cutting issues mainstreamed across ministries and departments, this led to lack of clear structures for enforcement and mechanisms to monitor gender mainstreaming activities.

Influence of customs and traditions: The majority of the policies and plans reviewed also failed to adequately address the gender power dynamics existing at different levels and the structural gender inequalities and power structures that underpin women's vulnerability to climate change. For example, in the two districts, customary

laws and traditions greatly influence the governance of rural communities relegating the formal policies and by-laws to the background.

According to Acosta, the research team hopes that by sharing these insights, the policymakers, advisors, and development practitioners in East Africa will be more aware of the current status of gender policies and to better understand how to address gender inequalities in climate change and development plans and policies. This will help empower both men and women to effectively adapt to climate change and build a prosperous and food-secure future.



The research team conducting focus groups discussions with men and women in the two districts.



Yam scientist shares knowledge on yam development in Japan

Hidehiko Kikuno, a former IITA scientist, visited the Institute recently and gave an overview on yam research and development by the yam research team led by Prof Hironobu Shiwachi at the Tokyo University of Agriculture (TUA) Miyako-subtropical farm in Japan.

IITA has the world mandate on yam research and works with various institutions such as TUA on the advancement of yam for income generation and food security. IITA signed a memorandum of agreement with TUA in 2012 and has facilitated some of its research on yam and capacity building of prospective research scientists from Japan.

At the seminar, Kikuno presented the findings of key exploratory studies on polyploid breeding of water yam (*Dioscorea alata*), nitrogen fixation in water yam, mechanization of yam propagation, as well as breeding for yam utilization and processing.

Results of the first phase of the exploratory research on polyploidy breeding showed how the physical characteristics of water yam could be enhanced, and thus affect the yield of the tuber. This is a key finding that could contribute to breeding for high yield variety. However, Kikuno indicated that more work needs to be done on agronomic traits such as tuber yield.

Yam propagation involves a lot of drudgery and strenuous agronomic practices and at Miyako-jima, researchers are working on eliminating drudgery in yam propagation through mechanization. With funding from the Japan Society for the Promotion of Science (JSPS), researchers have been able to use common tractors for ridging, mulching, and harvesting on yam. Moreover, a popular planting machine for vegetable seedlings was improved and tested for yam vine propagation.

Kikuno also indicated that new varieties of water yam have been selected for mechanized cultivation.



Hidehiko Kikuno makes a presentation at IITA about yam research and development at the Tokyo University of Agriculture, Japan.

Tubers are round in shape and have less root hair.

In terms of value addition and utilization, Kikuno reported that researchers and food processors are working together on new yam products such as distilled spirit made from water yam and fresh yam products sold in supermarkets.

“Yam is very important in the Japanese diet,” Kikuno said. Traditionally, Chinese yam (*Dioscorea polystachya*) or *jinenjo* (*D. japonica*) in Japan is served as a vegetable in Asian homes. Regarded as the “medicine of the mountain”, *yamaimo*'s health benefits are numerous, providing consumers with substantial amounts of carbohydrates, proteins, thiamine, and vitamin C.

In a separate interview, Kikuno, who spearheads progressive yam research at TUA, indicated that the development of the yam value chain in Miyako-Jima, Japan has been going on under an industry-academia or industry-government-academia partnership.

“In Miyako-Jima (island), I work closely with farmers, private industry, researchers, and the government to

come up with innovations,” Kikuno said. This can also be replicated in Nigeria, the world's largest producer of yam.

Agricultural developments and innovations are vital to the African economy desperately in need of job creation. Researchers are making breakthroughs across the yam value chain and for these innovations to grow into job-creating commercial products and services investments in industry-academia or industry-government-academia partnerships are needed.



Healthy yam vines.

DR Congo partners trained on post-flask management of tissue culture banana

IITA and [AGROBIOTEC Lab](#) in Bujumbura, Burundi, organized a hands-on training for field technicians in DR Congo on post-flask management of tissue culture banana on 22-26 June.

The training was organized in the framework of the partnership project with [Food for the Hungry International](#) (FH) DR Congo under the USAID/DFAP project. Participants came from FH, Institut National d'Etude et Recherche Agronomique (INERA), Université Catholique de Bukavu (UCB), and IITA Kalambo.

The purpose of the training was to strengthen partners' capacity to produce and introduce healthy planting material to rehabilitate bacterial wilt (BXW)-infected fields in Eastern DR Congo. [BXW](#) has devastated banana fields in Eastern DRC, rendering producers redundant with limited income sources.

The training was led by [Emmanuel Njukwe](#) of IITA Burundi and facilitated by Rishirumhirwa Théodomir of AGROBIOTEC Lab in Burundi and Niyongere Célestin of ISABU. Training modules included banana breeding for new and improved varieties, preparation of ex-plant, aseptic culture, rooting and weaning for field establishment.



Participants during the field visit.



Announcements

TROPENTAG (day of the tropics) 2015 is on 16-18 September. IITA will have a special session to present its research portfolio and an exhibition to showcase its work as a CGIAR research institution. Stefan Hauser is organizing IITA's participation in this conference.

The First World Congress on Root and Tuber Crops, earlier scheduled to take place on 5-10 October, at Nanning, Guangxi province, southern China, has been postponed to January 2016.

R4D Week is now scheduled for 22-28 November in Ibadan. Please mark this in your calendars!

Institute-wide Gender Awareness Seminar, 1 September, and Workshop on Developing Capacity for Gender Mainstreaming, 2-4 September. Prof Jane Bennett of the African Gender Institute (AGI), University of Cape Town, will facilitate this workshop.

Help conserve electricity!

Before leaving your workplace at the end of the day, make sure that you have:

1. Powered off all unnecessary electrical office/ lab equipment;
2. Turned off air conditioners; and
3. Switched off all lights.

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