

# Cassava Matters

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## Ogun State honors IITA, AATF and Bill & Melinda Gates Foundation for commitment to agriculture

The International Institute of Tropical Agriculture (IITA), African Agricultural Technology Foundation (AATF), and the Bill & Melinda Gates Foundation were honoured by the Ogun State Government for their work on agricultural transformation in Ogun State in particular, and Africa in general.

Ogun State Governor, Senator Ibukunle Amosun presented plaques of honor to the three institutions during a courtesy visit to his office.

The visit to the governor came at a time when AATF organised a stakeholders' meeting (25-26 October) on cassava mechanisation in Abeokuta, Ogun State. The governor who sent a strong delegation to the meeting also invited the three organisations to his office for further discussion on possible collaboration in agriculture and other developmental areas.

Governor Amosun said the current realities (fall in oil prices and rising unemployment) facing Nigeria underpinned the need for the diversification of the Nigerian economy, emphasising that agriculture was the way to go.

He expressed readiness to further collaborate with the three institutions with the view to unlocking the



*The Governor of Ogun State, Ibukunle Amosun (8th from left) with partners from IITA, AATF, Bill & Melinda Gates, GCP21, and other officials during a courtesy visit.*

agricultural potential of the state especially in areas such as cassava, maize, poultry, and aquaculture.

Dr Audu Grema, who spoke on behalf of the delegation explained the mission of the team to the state and also put in context the work of the Gates Foundation in Nigeria, and Africa in general with regards to agriculture and other sectors.

He thanked the governor for the warm reception and commitment to agriculture and expressed optimism that the team would be willing to

partner the state government whenever the opportunity arises.

Located in South-West Nigeria, about one hour from Lagos; Ogun state is one of the states in Nigeria with abundant arable land and mineral resources. However, like several other states in the country, most of the arable land is untapped, and a lot of youths in the state migrate to urban areas in search of white collar jobs which in most cases are not available.

Governor Amosun said he intended to reverse the rural-urban migration by making agriculture attractive.

"But this can only happen if the state and the country at large adopted mechanisation," said Claude Fauquet, a Director with the Global Cassava Partnerships for the 21 century.

On the delegation to the governor were Alfred Dixon and Godwin Atser (from IITA); Dennis Kyetere, Emmanuel Okogbeni, Mavindidze Donald, George Marechera, and Abu Umar (from AATF); Enock Chikava, Lawrence Kent, Jacob Mignouna, and Audu Grema (from the Gates Foundation); and Claude Fauquet (from GCP21).

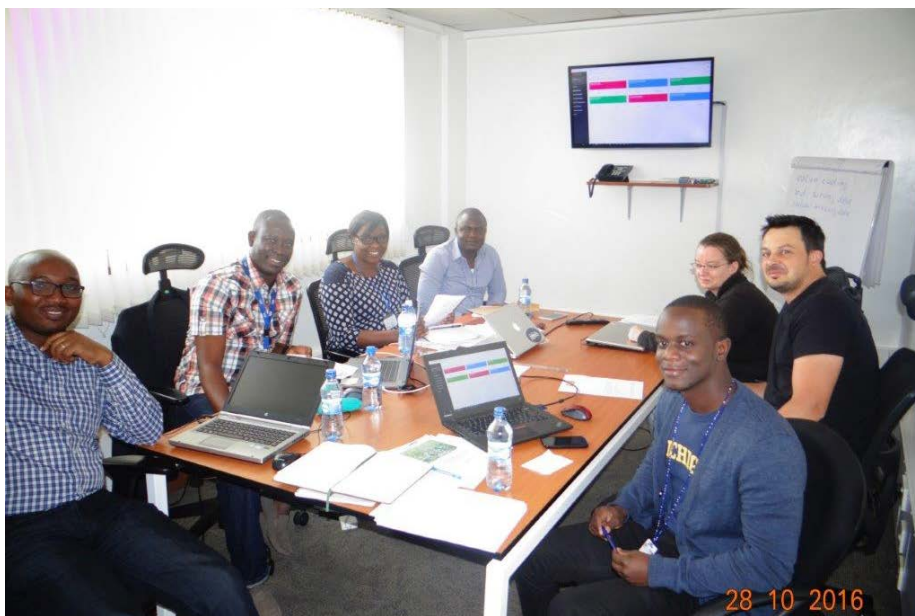


*Dr Dixon receiving a plaque from Ogun State Governor, Ibukunle Amosun in Ogun State*

# Researchers build consensus on meta-analysis

A team of agronomists from the International Institute of Tropical Agriculture (IITA), and the International Plant Nutrition Institute (IPNI) working under the African Cassava Agronomy Initiatives (ACAI) converged on IITA's office in Nairobi, Kenya from 24th to 28th November to design a strategic pathway that would help in conducting the meta-analysis of ACAI's use cases. The use cases are: Fertilizer Recommendation and Blending (FR, FB), Scheduled Planting and High Starch (SP, HS), Intercropping –maize/ sweet potato (IC) and Planting Practices (PP). These use cases were demanded and identified by ACAI partners such as MEDA-Mennonite Economics Associates; CAVA-Cassava Adding Value for Africa, MINJINGU Fertilizer Limited, and FCI-Farm International Concerns. These partners are already working in ACAI targeted communities and improving the livelihoods of cassava smallholder farmers.

Prior to the meeting, the participants at the IITA Kenya meeting – Drs Pieter Pypers, Veronica Uzokwe, Christine Kreye, Guillaume Ezui, and Joses Muthamia; and other ACAI members had sourced and deposited diverse literature to the ACAI document management system repository (DMS) with published and unpublished articles related to



Consensus building! Researchers at work

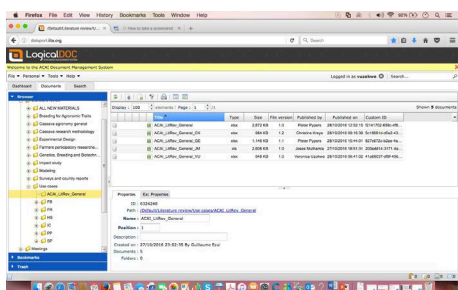
cassava agronomy, and in particular ACAI use cases.

The meta-analysis will combine the results of multiple previous use cases related methodologically sound research studies, thereby aggregating information that will lead to robust statistical estimates than is possible from the measure of any individual study. The meta-analysis will also provide associated similarities among the use cases' intervention and identify within and contrasting patterns among study results, thus producing weighted average and quality of previous studies. Finally, the meta-analysis results will derive conclusions providing the best evidence-synthesis as background to all ACAI research and scaling interventions.

This meeting aligns well with ACAI's common aphorism that ACAI

intervention is not starting from the scratch, but will make use of information from past studies to upgrade its interventions of bringing agronomy to scale in Africa. Hence the outcome of this meeting will greatly contribute to feeding the  $V_0$  (prototype version) of earlier mentioned use cases, which will certainly form the basis of decision tools or crop based guide for ACAI use cases and trial interventions.

The team was also joined by Edwin Kinisu and Savio Githinji from the Reeves technology limited, who are also contributors to designing the tools for the ACAI uses through integrated services in technology and software operations. The  $V_0$  decision tools will be tested first for efficiency in the Eastern zone of Tanzania, which is one of the ACAI target areas, before scaling out to other zones as well as Nigeria.



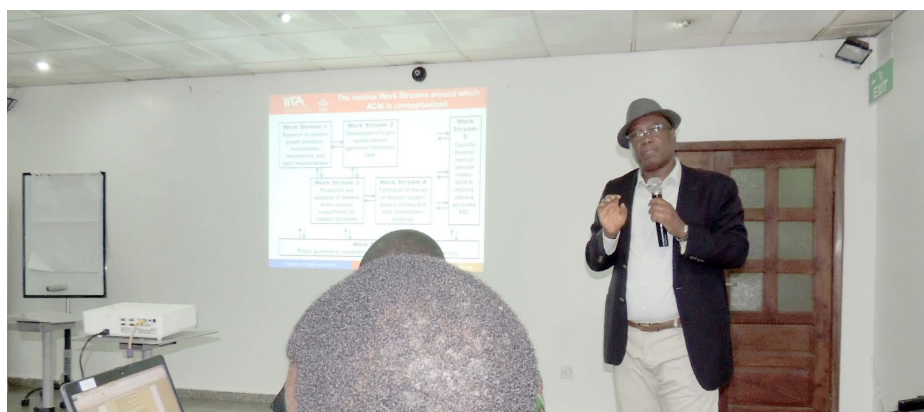
## ACAI holds first Annual Work Planning and Review Meeting in Ibadan

The IITA led African Cassava Agronomy Initiative will hold its first Annual Work Planning and Review Meeting in Ibadan, 5-7 December 2016. The meeting will

give stakeholders the opportunity to take retrospect of the project's activities in the previous months and marshal out plans for the future.

Members of ACAI's Project Advisory Council (PAC) will attend the two and a half day meeting. ACAI's Project Coordinator, Dr Abdulai Jalloh says the meeting is key for the future of ACAI as it will give stakeholders the opportunity to take stock of progress made in the implementation of project activities against targeted milestones, as well as to plan for implementation of the project in the next one year. It is envisaged that the forum will enable partners to meet and know each other better and foster effective collaboration.

The African Cassava Agronomy Initiative (ACAI) is a five-year project that seeks to increase the availability of appropriate and affordable technologies to sustainably improve short- and long-term agricultural productivity of cassava.



ACAI Project Coordinator, Dr Jalloh speaking on ACAI recently

# Pest diagnostics for cassava seed certification in Nigeria: Now and in the future

Although cassava is one of the major crops in Nigeria, the level of productivity is low due to a combination of factors such as farmers not having access to new (genetically improved) varieties and high level of pests and diseases, many of which are introduced with the vegetative stems (seed) at planting.

For instance, Cassava Mosaic Disease (CMD) remains a major constraint as new tolerant varieties

have sometimes not been adopted or susceptible varieties remain preferred by farmers.

Viral diseases in cassava are easily spread with the vegetative stems of cassava when used as seed. To be vigilant and able to counter these viral diseases in planting material is a prerequisite to future productivity.

To develop cassava varieties that would tackle the problem of diseased stems, the BASICS project supported Ms Nneka Okereke of the Nigerian National Root Crops Research Institute (NRCRI) for a three-month training in the UK. Ms Okereke has been working at Fera Science Ltd (UK) from October to December 2016 to develop a diagnostic assay for Cassava Mosaic Viruses (CMV) that can be used to test planting materials within a seed certification scheme. Fera is renowned for its crop pest diagnostics, with a notable track record for supporting Africa in cassava, maize and banana. Ms Okereke's work started with cassava leaves, sampled from Nigeria, with and without CMV disease symptoms, and a wealth of historic nucleic acid sequence data. The work has focused on using Loop-Mediated-Isothermal-Amplification (LAMP) as

the diagnostic method. LAMP is a fast and specific molecular diagnostic method that is straightforward, requiring limited equipment and a lower level of technical competence than other techniques e.g. real-time PCR. Hence, it can overcome barriers such as labour, equipment and building infrastructure, and most importantly it can be deployed to institutes such as the National Agriculture Seed Council (NASC) that are not research laboratories.

Within 6-weeks of her time at Fera, Ms Okereke has already been successful in designing primers that are specific to the CMV strains prevalent in Nigeria. Further work is now ongoing to validate these diagnostics in ways that will work with certification i.e. optimised for detection thresholds, cost, and ease of use. The validation work is also looking out for atypical CMV strains, which may be evading detection, and other viruses that may be causal of diseases, through the use of MiSeq illumina for non-targeted deep sequencing of cassava samples. Whilst the work is still early in its development, the opportunity presented by the LAMP is easy to see and can readily be valued at NRCRI and NASC.



Ms Okereke in the lab

## Background on BASICS

Building an Economically Sustainable Integrated Seed System for Cassava (BASICS) in Nigeria is a 4-year project funded by the Bill and Melinda Gates Foundation that seeks to create a commercially viable private sector cassava seed system in Nigeria that is compliant with improved seed certification standards implemented by the National Agricultural Seeds Council (NASC).

The project addresses the continuum of certification standards, from pre-basic to certified seed, and explicitly recognises the requirement for all cassava seed material that is sold or otherwise exchanged between growers to be certified. The project is to take on new seed production methods, alongside new ways of organising production, most notably by creating linkages with the cassava industrial sector and by forming farmer community groups as seed agents.

A critical component of the project is built around seed quality and the strengthening of the government seed

agency, NASC, so that it is well-tooled and skilled to provide an efficient certification service at all levels of scaling-up from pre-basic through to final certification. Compliance with

the requirements of planting material to be certified will then become the norm for all vested players that share or move cassava planting material in Nigeria.



A woman with improved seeds



# Communities agog over IITA-CWMP team's visit



Farmers, mostly women, came out in large numbers in Idi-Ata to welcome Messrs Chikava, Kent, Mignouna, Grema, Dixon, Ekeleme and Ekeleme, Hauser, Atser and others during a farmer field visit to one of the onfarm trial sites.

The communities of Oke-Ipin and Idi-Ata were full of jubilation over the progress made by the IITA-Cassava Weed Management Project in controlling weeds in cassava farming systems. The two communities are participating in the 2016 onfarm trials, and are both located in Oyo state – South west Nigeria.

In both communities, weeds are major constraints to cassava productivity affecting the livelihoods of farmers. The integrated approach to weed control being used by the IITA-CWMP is less tasking and farmers in those communities are learning from the project team.

On arrival to visit the sites, farmers in jubilation welcomed the team from IITA and the Bill & Melinda Gates Foundation comprising Enock Chikava, Lawrence Kent, Audu Grema and Jacob Mignouna. Drs Alfred Dixon, Stefan Hauser, and Prof Friday Ekeleme (from IITA) were also part of the entourage.

Farmer Solomon said the communities were happy with the project as it brought solutions to one of the major challenges undermining yield in cassava. According to him, most farmers in the communities were willing to adopt the technologies being used in controlling weeds.

Earlier, Enock and Lawrence commended the communities for their active participation in the project. They urged the farmers to learn and adopt the new ways of controlling weeds to improve their livelihoods.



L-R: Messrs Chikava, Kent, Mignouna, Atser and Ahmed Isiaku (VOA Journalist) during a farmer field visit to one of the onfarm trial sites to observe weed control in cassava.



Community leaders play a key role in technology adoption. Here, Lawrence (second from right) pose for a group photo with community leaders and Stefan Hauser (left).

# Researchers canvass integrated approach to cassava production

Nigeria's rising population, particularly in the cities, coupled with low productivity (yield per hectare) of cassava roots is threatening the country's cassava industry and could impede the gains made in the sector, putting the country at risk of becoming a net importer of staple crops.

Grown by over 4.5 million people in Nigeria, cassava is a major food crop, contributing to food security and income for millions of people but the productivity of the crop in Nigeria is low – 12-13 tons per ha.

“This low productivity cannot support Nigeria in the next 34 years,” according to Dr Claude Fauquet, Director with the Global Cassava Partnership for the 21st Century (GCP 21) while addressing participants at the just concluded workshop with the theme: “Integrated System for an Effective Cassava Production in Africa,” in IITA, Ibadan on Friday (28 October).

“By 2050, Nigeria's population will rise to 400 million, meaning that we will have more mouths to eat cassava and cassava products such as gari, fufu etc. With the current cassava productivity of 12-13 tons per hectare, cassava cannot sustain this huge population,” Dr Fauquet explained.

Elsewhere in Asia, cassava productivity has hit more than 20 tons per ha and a nation such as Thailand is today a major exporter of cassava products such as starch.



*In the field, stakeholders examine the role of mechanizing cassava in Ogun State, Nigeria*

Dr Fauquet said Africa, and Nigeria in particular, has the land, youth and climate to achieve the same feat such as Thailand. “The question is: Why is this not happening?” he remarked.

Besides the rising population, Dr Fauquet noted that urbanization would trigger the migration of more than 50 percent of Nigeria's population to cities which would leave a labour vacuum in the rural areas – a situation that would further exacerbate the problem of cassava production in the country.

He however said Nigeria could address the challenges by investing in the research for development of cassava along the value chain. Specifically, he said, investments in

improved varieties, weed control, best agronomic practices, and mechanization could change the outlook of cassava. “Other areas that need attention include access to credit, markets, and cooperatives,” he added.

Dr Fauquet called on the Nigerian government and donors to invest in research and development to put cassava ahead.

Dr Kenton Dashiell, IITA Deputy Director General, Partnerships For Delivery, who represented the Director General, Dr Nteranya Sanginga said cassava is an important crop for Nigeria and it was important that researchers were thinking about its future.

He commended the Bill & Melinda Gates Foundation for investing in cassava production along the value chain, and called on the government of Nigeria to consider upscaling some of the proven technologies such as cassava mechanization, weed management, improved seeds at IITA, and best agronomic practices to farmers across the country.

Dr Alfred Dixon, Project Leader for the IITA Cassava Weed Management Project described cassava as a “poverty fighter,” emphasizing that investment in cassava would help Nigeria to tackle the twin problem of hunger and poverty, and youth unemployment.

The workshop in Ibadan attracted participants from the private sector, development partners such as the Bill & Melinda Gates Foundation, and IFAD, and farmer organizations.



*Engineer Thierno Diallo talking about the wiggle weeder during the field visit in Ogun State*

# CABI/ASHC held first cluster forum meeting in Abuja



Participants

CABI (Centre for Agriculture and Biosciences International) through the Africa Soil Health Consortium Project organized a cluster forum meeting in Abuja as part of efforts to develop strategies that would facilitate the adoption of decision support tools being developed by the African Cassava Agronomy Initiative (ACAI).

The Cluster Forum meeting held 12-14 October is a key output under Work Stream 4 of the ACAI. As a key stakeholder to the ACAI project, CABI will ensure that cassava clusters are established with the engagement of all major stakeholders operating within cassava value chains in the target countries.

The meeting in Abuja brought actors in the cassava sector including

Notore, Nigeria Cassava Growers Association (NCGA), Sasakawa 2000, Pсалtry, Federal University of Agriculture Abeokuta (FUNAAB), CAVAIL, the media, and extension partners among others, across states where ACAI is being implemented. Participants at the meeting reviewed ongoing and past work with cassava information packaging and dissemination across the value chain; identified critical gaps in knowledge products and information, reviewed existing information and knowledge dissemination materials; and also identified appropriate dissemination pathways and key dissemination partners. They also gave definition to project clusters and operation modalities.

In his opening remarks, the Project

Coordinator, Dr Abdulai Jalloh reiterated the commitment of the ACAI project in closing the yield gap between research and farmers' field and reaching at least 150,000 farmers of whom 30% are women. The cluster forum was facilitated by James Watiti and Christine Aloit – both from CABI; Godwin Atser (IITA), Christine Kreye (IITA), Guillaume Ezui(IITA), and Innocent Okuku (Notore).

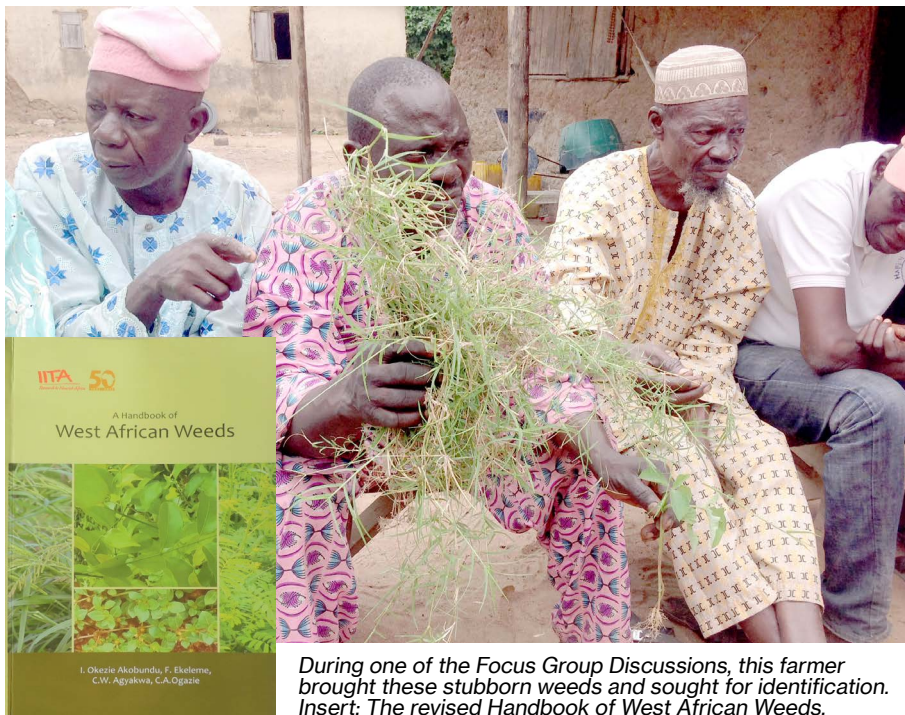
The CABI team said the aim of the meeting was to build partnerships with key actors in the cassava value chain that would help ACAI in meeting its goals. They emphasised that information sharing would be a critical component to help farmers adopt the technologies that ACAI would be developing.



Group session on formation of clusters

# IITA-CWMP adds 52 additional new weed species to the Handbook of West African Weeds

In seeking to fill the limitations of poor weed identification that was identified during the Training Needs Assessment organized by the Cassava Weed Management Project; a third edition of the Handbook of West African Weeds was published by the International Institute of Tropical Agriculture (IITA). The third edition has 52 additional new weed species, and 53 weed seedlings, and it builds on the earlier work done in the first and second edition while filling the gaps created by the emergence of new weed species in West Africa. The revised edition of the weeds album put together by the IITA-Cassava Weed Management Project seeks to assist farmers, agricultural extension agents and other agriculturists as well as institutions of learning that are faced with the practical need to learn and identify common weeds in West Africa. In his foreword, Dr Sanginga, Director General of IITA, stated that weeds have become one of the most notorious constraints to agricultural development in sub-Saharan Africa undermining the gains made through crop improvement. Emphasizing that weeds limit the ability of resource-poor farmers to expand their farm sizes and expose them to ailments such as back aches; the Director General stated that the weed album is an imperative resource material that would help in weed



During one of the Focus Group Discussions, this farmer brought these stubborn weeds and sought for identification. Insert: The revised Handbook of West African Weeds.

identification for all stakeholders. Prof Ekeleme, Principal Investigator of the Cassava Weed Management Project and co-author of the third edition of the weed album stated that the book as a repository of weed knowledge would go a long way to benefit schools and higher institutions where agriculture is taught.

The 381-page new edition which was produced with funding support from the Bill and Melinda Gates Foundation has better digital photographs, two additional parts on weed seedlings and fallow species that appear as regrowth in arable and plantation crops. **To book a copy, please send a mail to: Ezinne Ibe, [e.ibe@cgiar.org](mailto:e.ibe@cgiar.org)**

## ACAI and GIZ explore areas of possible collaboration

A delegation from the ACAI project led by the Project Coordinator, Dr Abdulai Jalloh paid a courtesy call to Deutsche Gesellschaft für Internationale Zusammenarbeit

(GIZ) – a German trade and development organisation) office in Abuja, Nigeria. The meeting which was facilitated by IITA's Natural Resource Management Expert,

Dr Christine Kreye brought ACAI and GIZ together to explore areas of possible collaboration as both partners are working on cassava. Dr Annemarie Matthess, GIZ Coordinator in Nigeria while receiving the ACAI team explained that GIZ was implementing the Green Innovation Centres for the Agriculture and Food Sector project in Nigeria of which cassava is a major component. The two leaders sought areas of commonalities and agreed to work together whenever the opportunity arises. Dr Matthess said she would be interested in the outputs of the ACAI project especially the decision supports tools. In the meeting were Caroline Trimborn (GIZ), Godwin Atser, and Ezinne Ibe – both from IITA.



L-R: Drs Jalloh, Mathess, Ms Ibe and Dr Kreye during the visit to GIZ in Abuja

This newsletter is produced by the Cassava Weed Management Project in collaboration with the ACAI and the BASICS projects. **Advisers:** Drs Bernard Vanlauwe, Alfred Dixon, Abdulai Jalloh, Hemant Nitturkar, Friday Ekeleme, Stefan Hauser, Pieter Pypers, David Chikoye, and Kenton Dashiell.

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