

ACAI sets up 563 trials in Nigeria and Tanzania to solve cassava agronomy puzzle



Lawrence Kent (left) sharing his thoughts and expectations from the ACAI Annual Work Review and Planning meeting in IITA-Ibadan

The African Cassava Agronomy Initiative in 2016 established 563 trials across Nigeria and Tanzania to help unlock the agronomy of cassava. The trials were part of the broader initiative by the research community led by the International Institute of Tropical Agriculture (IITA) with its international and national partners to increase the productivity of cassava and improve the livelihoods of resource-poor farmers.

Researchers are hoping that the trials will resolve the puzzle around fertilizer recommendation, best planting practices, intercropping, and scheduled planting of cassava to ensure all year cultivation and harvesting of the root crop.

Although widely cultivated in Africa, cassava yield per hectare has remained low on the continent compared to Asia. Nigeria and Tanzania have continued to report yields per hectare of less than 8 tons per hectare as opposed to Asian countries such as Thailand where yield of more than 22 tons per hectare has been reported (FAO, 2014).

This yield disparity puts African cassava farmers at a disadvantage as they can't

compete globally especially in terms of exports.

Dr Bernard Vanlauwe, Principal Investigator of the ACAI Project and the Director of IITA Central Africa Hub, said the importance of cassava was not in doubt.

"It is one of the most consumed staples in Africa and a source of income. The question is how can we reduce the yield gap... this is where the science of ACAI comes in," he said during the Annual Work Review and Planning in Ibadan, Nigeria, 5-7 December 2016.

Over the years, research on cassava agronomy in Africa has been site specific and in what may be described as pilots. The ACAI project aims to take agronomy to scale by researching and making recommendations that could be widely adopted on large scale.

Researchers who are heading the four components of the ACAI project otherwise known as use cases – fertilizer recommendation and blending, best planting practices, intercropping, and scheduled planting – say they are working towards developing decision support tools for site-specific scenarios covering nutrient management best planting practices, intercropping, and scheduled planting.

Dr Abdulai Jalloh, Project Leader of ACAI believes that the project is a game changer for cassava in Africa.

"Our farmers are yet to realise the potential of genetic improvement because of poor agronomy," he said. No matter how good the seeds are, except you back it up with agronomy, you may not be able to harness the potential of the root crop," he explained.

The Chair of the Project Advisory Committee of ACAI, Dr Linley Chiwona-Karlton described the work done so far as impressive. She commended the leadership of the ACAI project for an excellent job.



Dr Christine Kreye leading a team to develop work plans during the ACAI Annual Work Review and Planning meeting in IITA-Ibadan

IITA-CWMP to explore weed control in cassava using biodegradable plastic mulch

The IITA Cassava Weed Management Project will commence research into the use of biodegradable plastic mulching in cassava this year.

This follows the procurement of a plastic mulching machine, which arrived IITA-Ibadan on Thursday. The use of biodegradable plastic in the control of weeds is not new in Asia and Latin America but not the case in Africa where 90 per cent of weed control involves the use of hand and hoe.

Dr Alfred Dixon, Project Leader of the IITA-CWMP said the arrival of the machine was in time as the project team members prepare another set of trials this year.

“Our plan is to test the performance of the technology in Africa and see the possibility of adapting it so that resource-poor farmers can have access to it,” he said.

In time past, IITA conducted experiments on the use of non-biodegradable plastic mulch on its campus in Ibadan but the technology raised environmental issues because



IITA engineers and IITA-CWMP team inspecting the plastic mulch laying machine

the plastics were not degrading.

Dr Dixon said the degradable nature of the new technology would allow the institute to build on its previous research, emphasising that, “Although our focus is on cassava, we will also test the possibility of the technology in yams and vegetables.”

The Principal Investigator of the IITA-CWMP, Prof Friday Ekeleme expressed optimism that the use of the technology would bring benefits to African farmers.

He said that the research question before the team is to see how the materials for the technology (biodegradable plastics) are sourced within Africa.

Dr Linley Chiwona-Karlton heads ACAI’s Project Advisory Committee

Dr Linley Chiwona-Karlton has been selected to head the Project Advisory

Committee of the IITA led African Cassava Agronomy Initiative.

Dr Chiwona-Karlton obtained a PhD in International Health from Karolinska Institutet, Sweden; a Masters degree in Human Nutrition from Uppsala University, Sweden; and a Bachelors degree in Food Nutrition and Institutional Management from East Carolina University, USA.

Since 2002, she has been serving as a lecturer and research fellow at The Swedish University of Agricultural Sciences (SLU) in Sweden.

Other members of the PAC include Alfredo Alves, EMBRAPA, Brazil; Azara Ali-Mamshie, Ghana Ministry of Agriculture; Ezumah Humphrey, International Consultant/ Ex-IITA Agronomist; Reinhard Howeler, Cassava consultant/CIAT emeritus; Dunstan Spencer, International Consultant/Ex-IITA Director of Resource and Crop Management Program; Alphonsus Onwuemeka, Director of Extension, Ministry of Agriculture; and Hussein A. Mansoor, Assistant Director Crop Research, Ministry of Agriculture, Tanzania. Other members of the PAC acting as ex-officio members are IITA Director for Natural Resources Management, Dr Bernard Vanlauwe; a member of the Bill & Melinda Gates Foundation; a member of International Plant Nutrition Institute (IPNI); and Dr Abdulai Jalloh, who serves as the Secretary of the PAC.



PAC Chair, Dr Chiwona-Karlton (4th from right) with members of the PAC during the ACAI Annual Work Review and Planning meeting in IITA-Ibadan



PAC members and other stakeholders during a field trip in Oyo state, Nigeria

Welcome to the BASICS team

The 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). Below are the drivers of the project:



Hemant Nitturkar



Adeniyi Obilade



David Obisesan



Charity Onyeke

Hemant

Hemant Nitturkar is a tri-sector professional with multi-country experience of over two and half decades in research, commercial agriculture operations, information technology, financial services, venture capital and entrepreneurship development. He is a serial entrepreneur with experience of running four businesses, selling one, mentoring over one hundred startups. He is a two-time recipient of the Governor's Gold Medals from the University of Agricultural Sciences, Dharwad, India, for his academic achievement in BSc (Agriculture) and MSc (Genetics and Plant Breeding). He holds a Graduate Diploma in Applied Finance from Securities Institute of Australia, Sydney and has also received Executive Management Training in Raw Material Procurement for Agro-processing units from IIM, Ahmedabad and the Venture Capitalist Development Program, ISB, Hyderabad, India.

He is passionate about creating innovative grassroots business solutions to social and environmental problems facing the developing countries with large youth population by bringing in all the stakeholders in a symbiotic relationship.

He is currently the Project Director for a CGIAR Research Program on Roots, Tubers and Bananas (RTB) project called Building an Economically Sustainable, Integrated Cassava Seed System in Nigeria (BASICS) at IITA, Ibadan, Nigeria.

Adeniyi

Adeniyi Obilade is the new Finance/Administrative Officer for the BASICS project in Ibadan, Nigeria. He holds

a Master of Business Administration (MBA) from Ladoké Akintola University of Technology of Ogbomoso, Oyo State, Nigeria; and a BSc. degree in accounting from Obafemi Awolowo University of Ife, Osun State, Nigeria. He started his career as an Executive Officer Audit at the Polytechnic Ibadan. Prior to Adeniyi's appointment with CIP, he has worked for over 20 years at the International Institute of Tropical Agriculture (IITA), Nigeria in various capacities, which include Accounting Assistant (Expense Claim), Senior Cashier (Complete Banking), Project Accounting Officer, Fixed Asset Officer, Oracle accounting Officer (inventory management) and a Project Accountant. He has well over 20 years progressive work experience in a fully automated donor funded International Organization with a solid proof of good performance. He is currently the Chief Examiner for ICAN on Strategic Financial Management – the lead paper in final examination. He is an Associate Member of Institute of Chartered Accountants of Nigeria (ICAN), a Nigerian Associate Member of the Institute of Management, and an Associate Member of the Institute of Training and Development (NITAD).

David

David Obisesan is the Monitoring and Evaluation Officer for the project, BASICS in Ibadan, Nigeria. He is a research, monitoring and evaluation professional with over 5 years hands-on experience, which cuts across community development, health and agricultural research for development. Prior to David's appointment with CIP, he has worked for the International Institute of Tropical Agriculture (IITA) as a M&E officer for the Humidtropics as

well as an NGO, Management Sciences for Health, Nigeria. He worked on the United State Agency for International Development (USAID)-funded HIV/AIDS intervention program and service delivery program for orphans and vulnerable children (ACCORD). He was part of the team that implemented the United Nations Children's Fund (UNICEF) interventions for children both off-the-street and on-the-street, youths and adults. David is a member of African Evaluation Association, an associate member of the Institute for Humanitarian Studies and Social Development. David holds a Masters degree in social work (Community Development) from the Lagos State University and a B.Sc. Statistics from the University of Abuja, Nigeria.

Charity

Onyeke Charity is a trainee student (Industrial Attachment) performing a variety of administrative and clerical tasks at the BASICS Project IITA Ibadan, Nigeria. She holds a National Diploma in Computer Science from The Federal Polytechnic Offa, Kwara State, Nigeria.

She has experience in Web Design and Development from the University of Ibadan during her internship under the Student Industrial Work Experience Scheme (SIWES) at the Management Information System Unit and the Training and Research Development Unit respectively of the University.

Announcement

BASICS holds Project Planning meeting, and Monitoring & Evaluation meeting

Date: 20-23 March 2017

Venue: IITA-Ibadan

Cassava proffers succour to farmers in economic recession

When a Nigerian novelist, Florence Nwapa (1931-1993) wrote about the importance of cassava in her poem – *Cassava*, not many people may have appreciated the importance of cassava in national and food security. Nwapa's article was inspired by the events that occurred during the Nigerian civil war (1967-1970) and how cassava was able to save lives, guarantee food security, and provided incomes to farmers. The four stanza poem went thus:

*We thank the almighty God
For giving us cassava
We hail thee cassava
The great cassava*

*You grow in poor soils
You grow in rich soils
You grow in gardens
You grow in farms*

*You are easy to grow
Children can plant you
Women can plant you
Everybody can plant you*

*We must sing for you
Great cassava, we must sing
We must not forget
Thee, the great one*

Today, cassava is playing a similar role as Nigeria navigates out of economic recession. According to farmer Julius Kpenkpen, "If not cassava, many of us would have died of hunger... But thank God, cassava was handy to save the situation."

Kpenkpen is one of the farmers who is participating in the International Institute of Tropical Agriculture led Cassava Weed Management Project. His farm is located in the Benue State, North Central Nigeria – a zone that is often described as the bread basket of the country. Last year, he harvested some of his cassava, and with the help of his wife processed to *gari* for sale and household consumption.

Returns from *gari* sales were used in paying his children's school fees and meeting other needs in the home, he explained.

Like Kpenkpen, several farmers in Nigeria smiled to the banks in spite of the country's economic recession. Prices of cassava based products such as *fufu*, *gari*, and chips have more than doubled as the country looks inwards to meet its food demand. The naira, Nigeria's currency, has lost its



Farmers selling cassava in a market place

value by over 50% against the United States dollar since June last year, raising the competitiveness of locally produced food products.

A local measure of *gari* in south western Nigeria called *Kongo* has risen from N100 early last year to N250, causing major pain to consumers.

In Nigeria, about 4.5 million people are involved in cassava farming but yield of cassava is below 8 tons per ha (FAO, 2014). One of the principal limitations is poor weed management, which often limits farmers' farm sizes and undermines yield.

Farmer Aba Dapo who is also participating in the IITA Cassava Weed Management Project's onfarm trials is optimistic about increasing his farm size having learnt new techniques for weed control.

Farmer Dapo helped manage one of the IITA Cassava Weed Management Project's onfarm fields in Oyo State, South Western Nigeria where he cultivated both cassava and maize on the same plot. On a plot of less than an acre, he harvested maize and sold for \$100 and hopes to harvest his cassava later this year. On another field, he harvested cassava and sold for \$400.

"Last year was good for cassava farmers. Previously, I could hardly realise \$70 from cassava... cassava is helping in a great measure," he said. For farmer Dapo, the knowledge he gained from the IITA Cassava Weed Management Project is a valuable

asset that will help him transform his farming practices.

"The knowledge you gave to us on how to control weeds is very useful. With this knowledge, I hope to increase my cassava farm size," he said.

Another farmer, Hajia Misirat Olomitutu said the onfarm trial had given her the knowledge, confidence and tools to expand her farm. She commended the IITA Cassava Weed Management Project for bringing the knowledge on weed control to her community, adding that it would reduce the burden faced by farmers to control weeds.

In the last three years, the IITA Cassava Weed Management Project screened environmentally friendly and safe herbicides, and explored agronomic factors and motorised mechanical options for weed control in cassava. Best-bet recommendations for each of the components were pulled together in a package and applied on farmers' fields. For instance, researchers found that increasing the population of cassava from 10,000 to 12,500 at a spacing of 1mX0.8m gives a better result than the current practice of 1mX1m. Cassava variety TME 419 competes better with weeds than other varieties, and ridged cassava performs better than cassava on flat soil. Researchers also found that herbicides application in cassava incorporated in the agronomic package is effective in weed control.

Announcements!!!

IITA- Cassava Weed Management Project holds:

1. Annual Review & Work Planning meeting, 27 – 28 March 2017
2. Steering Committee (SC) Meeting 30 – 31 March 2017

Venue: IITA-Ibadan

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, and Friday Ekeleme.

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