



Nine cassava meetings in nine days at IITA!

It's been a week for cassava in IITA-Ibadan. Five different meetings have already been held in four days! The meetings are on or related to new initiatives to develop a self-sustainable seed system for cassava,

agronomic practices that could narrow the yield gap for Africa's biggest staple crop, and weeds management.

In continuation of the week-long trend, scientists and stakeholders working with

the Global Cassava Partnerships for the 21st Century and the RTB project on Piloting Results-Based Management will hold four more meetings and workshops next week.

Scientists and development partners spot agronomy as a remedy for Africa's cassava production problem

...as they prepare a new initiative on cassava agronomy

IITA scientists, in collaboration with national partner institutes and development partners, are gathering to define which agronomic practices could narrow the cassava yield gap and how these can be scaled up to many farmers in Nigeria, Tanzania, Ghana, and Uganda in a new initiative, *African Cassava Agronomy Initiative (ACAI)*. This is planned to commence in 2016. ACAI aims to take cassava to scale in cassava-based systems in sub-Saharan Africa. Upon implementation, ACAI will be driven mainly by implementing partners and focus on the agronomy requirements of cassava fields and integrating best practices for other management objectives.

According to FAO figures in 2011, Africa produces more cassava than any other crop. More land is cultivated to the crop but the yields are low, with current estimates ranging between 8 and 15 t/ha against an achievable yield of more than 30 t/ha.

"Agronomy includes many things," [Dr Bernard Vanlauwe](#), IITA Director for Central Africa, said during the Cassava Agronomy Stakeholders' Meeting on 28

April-1 May in Ibadan. "In this initiative, we are asking development partners that are engaged in cassava value chain activities to tell us which agronomy information they would need to improve their work; that's what ACAI will work on.

Dr Vanlauwe, in one of the first studies to examine the potential of combining inorganic fertilizer and good agronomy practices on cassava fields in DR Congo, found that the combination could give high yields while also allowing farmers to cultivate cassava with other crops, such as nutritious beans and soybean, on the same plot and at the same time.

"The results from Uganda and DR Congo show that by training farmers to know the specific needs of the cassava variety on their farm lands and also to diagnose nutrient requirements properly on their fields, farmers can have much better harvests," said Dr Vanlauwe.

Dr Vanlauwe also explained that ACAI will tackle four key challenges for cassava intensification:

- Empowering farmers with appropriate cassava agronomy information on cassava;
- Collecting the necessary strategic information in relation to cassava growth and nutrient needs;
- Empowering last-mile delivery agents to make decisions, obtain information, and use these within their networks;
- Developing geo-spatial recommendations to close yield gaps; and
- Integrating national systems and engaging them in innovative cassava agronomy aimed at reaching scale.

ACAI intends to partner with the International Plant Nutrition [Institute](#), the International Fertilizer Development [Center](#), the International [Centre](#) for Tropical Agriculture, [Center](#) for Agriculture and Biosciences International, Federal [University](#) of Agriculture Abeokuta, National Root Crops Research Institute, Tanzania Agricultural Research Institute, SG2000, 2Scale-Psaltry, CAVA-II, Farm Concern International, Minjingu Fertilizer Company, Notore, and many others.



Dr Bernard Vanlauwe (right) talks about the ACAI project to partners.

Workshop held to discuss options for building an economically sustainable and integrated cassava seed system in Nigeria

In Nigeria, the world's largest cassava producer, a proposed project, the first of its kind, will develop an economically sustainable seed system for cassava that can grow and supply farmers with new varieties. This was the focus of a discussion among stakeholders from the private and public sectors, National Root Crops Research Institute (NRCRI), the National Agricultural Seed Council, research institutes and scientists that was held at the IITA Conference Center in Ibadan, 27-28 April.

Dr Clair Hershey, leader of the International Centre for Tropical Agriculture (CIAT) cassava program, explained that for cassava, the word seed refers to the "small stem cuttings used to propagate the crop each growing season." He added, "The seed system starts from plants in tissue culture in the laboratory to the production of breeder seeds which will then be multiplied to produce foundation seeds and finally to be multiplied by commercial seed producers for farmers to get good quality seeds of their preferred varieties."

Currently, the seed system is a big constraint to farmers and industries in getting the varieties they need. Developing the seed system became necessary in the light of the "various opportunities being missed in reaching out to small- and large-scale cassava farmers, the distribution of new genetic materials, and improvement of the crop across the entire value chain." said Dr Claude Fauquet, Director of the [Global Cassava Partnership](#) for the 21st Century.

"Today," continued Dr Fauquet, "there are no commercial seed systems available in the world for cassava. No one is currently able to go to designated spots and purchase cassava stem cuttings if s/he desires to establish a new business. It simply does not exist."



Dr Elizabeth Parkes and Dr Peter Kulakow show a range of finished products from both the white and yellow-fleshed cassava varieties to workshop participants during a field tour.

This project therefore seeks to address this challenge by establishing a sustainable mechanism to ensure that both commercial and small-scale farmers and industries continuously pay the correct price to buy and have access to quality, certified seeds of the right varieties to improve their production.

The project will be championed under the CGIAR Research Program on Roots, Tubers and Bananas (RTB) and focus will be on major cassava-growing regions of Nigeria.

Farmers will get better income and higher yields from the initiative, but they will not be the only participants. Cassava processors will also be able to grow their businesses and gain access to higher yielding varieties as raw materials for their products through the seed system.

"People will make money all along the value chain," said Dr Graham Thiele, Director, CGIAR RTB Program. He continued, "Our vision for the future is to unleash the entrepreneurial potentials of Nigerians and make this a functioning initiative for producers, processors, and consumers of cassava in Nigeria."

The proposed project will be led by RTB with major project roles for NRCRI, CIAT, CIRAD, contact network IITA, and other partners, in collaboration with Bioversity International, CIAT, and CIP. Funds from the Bill & Melinda Gates Foundation will drive the initiative which will start in 2016.

Upon implementation, lessons from this initiative will be exported to benefit other African countries and Asia as well.



Dr Peter Kulakow (in front, wearing a hat) talks about the field operations and breeding procedures for the cassava seed system.

New project impresses visiting USAID mission

The consortium of [CGIAR](#) Centers implementing the Feed the Future [project Malawi Improved Seed Systems and Technologies](#) received a vote of confidence when a visiting team from the [USAID](#) headquarters as well as USAID/Malawi mission expressed their satisfaction after witnessing the work the partners are doing in the field.

The USAID team, which was led by their Chief Scientist, Dr Robert Bertram, visited IITA's soybean trials and breeder seed production as well as various other trials and demonstration plots at Chitedze Research Station.

The visitors had a chance to listen to presentations and also to appreciate more of the consortium's work when they visited a pavilion at [Chitedze Research Station](#) where members showcased some of their achievements through displays.

Speaking later, the USAID team leader was visibly impressed. He described the work of the CGIAR Consortium in Malawi under the project as 'exciting'.

"I am really excited to see the consortium taking shape," said Dr Bertram. "The work the consortium is doing will not only address the critical shortage of improved seeds but will also bring research to the farmers. The presentations I have heard show that the system they are using is sustainable and will help in boosting food production in Malawi."

Dr Bertram also added that the consortium was filling a gap in a sustainable way that empowered all the national partners and would benefit farmers and communities due to the increased availability of seeds of improved varieties.

He explained, "I am so happy that the USAID mission here in Malawi has reached out and worked with the CGIAR Centers to make a true consortium. You can sense the excitement and feel how much the Centers like being part of the group effort.....this is at the heart of what we are looking for in terms of helping smallholder farm families make the transition so that they move out of poverty."

The project will use public-private partnerships and revolving fund approaches to develop a sustainable

soybean seed production, marketing, and distribution system with complementary integrated crop management practices to enhance the farmers' access to improved technologies and increase their adoption.

Breeder seeds will be produced by the Department of Agricultural Research Services ([DARS](#)) and [IITA](#) to support the public, private, and community-based seed producers and will be fed into a network of certified seed producers. These include small-scale seed enterprises and community-based seed outgrower schemes to produce the targeted quantities of certified seeds.

The project has already made some progress, which also impressed Dr Bertram and his team. "I have seen a lot of highly resilient crops during the field visit such as drought tolerant maize that looked really good compared with the non-drought tolerant varieties."

"This will help to drive diversification because if people are more confident about their maize yield, they will put some of their land to other crops. I was really excited and would love to see this partnership emerging at the grassroots level in the CGIAR system," he said.

Responding to questions by the visiting team on IITA's partnership with local organizations, Dr Arega Alene, IITA's Country Representative, said they were

working with the National Smallholder Farmers Association of Malawi ([NASFAM](#)), a reputable organization with vast experience in community-based seed production.

"We have NASFAM as our partner in this project because they have the structures and experience in community-based soybean seed production through well-trained local seed producer groups. They have large and elaborate agricultural extension machinery countrywide and farms that would effectively support the soybean technology dissemination system."

"So far, the relationship has been good as we have managed to implement the project according to agreed plans," he explained.

On the demand for soybean on the local market, Dr Arega said, "I wouldn't say that sufficient demand for seeds has been created yet. Limited effective demand for seeds has always been a major constraint and this is largely why the private sector has little interest in the legume seed business in general. We have taken it upon ourselves to create demand by using different mechanisms such as field demonstrations and related extension campaigns. These are not only intended to create awareness of the availability of different varieties with many different attributes but also to demonstrate to farmers the benefits of improved varieties and complementary agronomic practices."



Dr Rob Bertram (left) listening to a presentation by Dr Alene Arega of IITA on a soy demonstration field.

Impacts from DTMA implementation to be multiplied in a new project

The Drought Tolerant Maize for Africa (DTMA) project has completely lived through its implementation phases and is on course to be replaced by a new project known as Stress Tolerant Maize for Africa (STMA). From 2016 onwards, DTMA will have a new shape and form. Although this is still in the proposal stage, STMA is set to replicate the successes achieved in DTMA across sub-Saharan Africa and to also deploy novel technologies that will better create desired impacts.

On 20-21 April at the Conference Center in Ibadan, Nigeria, stakeholders involved in the implementation of DTMA from 2007 to 2013 convened to review progress in the last 8-9 years of implementation, discuss outputs, outcomes, sustainability models, and the next steps for the future.

Dr Ylva Hillbur, DDG Research for Development, welcomed the DTMA team to the work plan meeting, stressing that the importance of their work in sub-Saharan Africa could not be overestimated. She hailed the project, describing it as proactive.

"In particular," she said, "the extra-early maize variety which bears appealing morphological, aesthetic, and yield characteristics always sells the story of success from the DTMA project... DTMA has strong partnerships and networks that make the difference between projects with long-lasting impacts. DTMA has proven that more than developing new varieties, it is important to integrate farmers within the system and encourage them to grow those varieties."

More about STMA

For lasting and sustainable impacts on the ground, STMA will be implemented by IITA and the International Maize and Wheat Improvement Centre (CIMMYT) under two key components. The first is Improved Maize for African Soils (IMAS) - aimed to find maize varieties having high nitrogen use efficiency and addressing the issues of abiotic stresses of the crop. The second component is the Drought Tolerant Maize for Africa Seed Scaling (DTMAS) - aimed to scale up the seed varieties so far released under DTMA.

"The general idea for the new project is to ensure that the new maize varieties already developed will be widely used," explained Dr Tsedeke.



Dr Tsedeke Abate sheds light on the progress of the DTMA project and projected expectations for STMA.

Dr Tsedeke Abate, DTMA project leader, recounts that the DTMA project has done a tremendous job in breeding new maize varieties that can replace old varieties, give high yield, and possess other desirable agronomic traits such as drought tolerance, resistance to Maize Streak Virus and to *Striga*.

"...The result across sub-Saharan Africa for farmers growing DTMA varieties is very encouraging," he said. Apart from developing more than 200 hybrid and open-pollinated varieties (OPVs) of maize, more than 50% of plots planted to maize in 2013 in Nigeria are also DTMA varieties.

"In the beginning, we set out to develop more than 200 hybrids and OPVs

and deliver 60,000 t of maize seeds," he said. "So far, we can proudly say that we have been successful in developing the varieties we said we would, and we are still on track to meet our target in the area of delivering certified DTMA seeds."

Dr Tsedeke also called on partners to intensify efforts in the distribution of the varieties already released to ensure that farmers get unlimited access to new and better varieties.

"To facilitate this, DTMA will continue among others to encourage national programs in target countries to promote DTMA materials across Africa and empower partners to scale out materials developed by the project," he added.

DTMAS is now being piloted in seven countries in Southern and Eastern Africa; Ethiopia, Kenya, Tanzania, Uganda, Malawi, Mozambique, and Zambia. It is also very likely that DTMAS will be piloted in critical countries in West Africa as well.

On why the project has a good potential to succeed, Dr Tsedeke explained, "STMA is more on the supply side of research and technologies which is a major constraint for agriculture today. DTMAS, on the other hand, is essentially about taking out the technologies and working with farmers."

"We are promoting a new generation of maize varieties to keep pace with and address climate changes and meet

the future needs of maize farmers and agriculture," Dr Tsedeke added.

Specifically, the broad areas for focus in implementing STMA are storage/postharvest practices for maize, breeding, and scaling up of released maize varieties.

The new challenge will be to eradicate the new disease -- [Maize Lethal Necrosis](#) -- a really big threat for African agriculture which is now widely spread in Ethiopia, Tanzania, Uganda, Rwanda, and Southern Sudan.

To achieve this, STMA will work with several universities and institutions in Africa, Germany, and North America, and deploy double haploid technology to eradicate the disease from farmers' fields.

IITA's business model for cassava in Cameroon presented as case study at the Burundi Economic and Social Development Forum

Dr Emmanuel Njukwe, Country Representative, IITA Burundi, was a guest speaker at the Burundi Economic and Social Development Forum held at the Hotel Club du Lac Tanganyika, Bujumbura, on 23 April. The Forum was organized by Burundi's Ministry of Foreign Affairs and was chaired by Burundi's First Vice President.

At the event which was attended by European Ambassadors, donor organizations, and NGOs, Dr Njukwe presented on IITA's Business Model for Cassava, made a case for a reform in Africa's cassava processing, and projected the efforts of IITA in this regard.

Dr Njukwe highlighted the multiple uses of the crop, noting that cassava remains important in sub-Saharan Africa for food security and income generation and also serves as a major food crop for many in Burundi.

"Cassava has great potentials as a source of starch and as feed for livestock. It is a high-yielding crop that is tolerant of poor soils and produces more under good management. Its production can, however, be hampered as it is bulky, highly susceptible to pests and diseases, and has a short shelf life that requires immediate processing after harvest," said Dr Njukwe.

He noted that IITA's business model for cassava was already bridging the gap between urban and rural processors and helping farmers and processors in



Forum panelists including IITA's Dr Emmanuel Njukwe on the far left.

Cameroon to reach international markets in Gabon and Congo-Brazzaville and other domestic markets as well.

"The main objective of the business model is to assess the viability of centralizing factories for processing high quality cassava flour (HQCF) in the urban centers while primary processing of dried cassava chips is decentralized and sourced at village levels in the rural areas."

He added, "This business model aims at reducing postharvest losses and creating jobs for the youth and women in rural areas. To achieve success, a holistic and comprehensive approach in R4D is necessary that considers and addresses production, processing, and marketing challenges simultaneously and involves various stakeholders, such as farmers, development partners, policymakers, the private sector, and researchers."

Explaining the process further, he noted that various activities are undertaken to build capacity of the end-users such as training on crop management, machine use, product development, and fabrication for the private sector. Top policymakers are involved in the process during the release of IITA cassava varieties and the events to promote the use of cassava flour in bakery products.

The Government of Burundi is now partnering with IITA to reproduce these benefits for its citizens. As a symbol of commitment IITA has been asked to develop a similar business model for banana and to sign a four-year memorandum of understanding with Interchurch Organization for Development Cooperation (ICCO), Burundi (2015 to 2018) for the implementation of both business models (cassava and banana) with support from the Netherlands Government.

WASHC-IITA visits SSLM-FUNAAB for joint efforts in soil fertility management

IITA's West Africa Soil Consortia (WASHC) project recently organized a courtesy and familiarization visit to the Department of Soil Science and Land Management (SSLM), Federal University of Agriculture Abeokuta on 21 April. The WASHC team was led by Dr Jeroen Huising, WASHC project leader, accompanied by Samuel Mesele, WASHC Research Support Officer.

The visit was a step towards fulfilling IITA's mandate through WASHC to establish soil research links with relevant academic and research institutions for a more concerted approach to soil fertility management in the West and Central African subregions as



L-R: Mr Samuel A. Mesele (WASHC Research Support Officer), Dr Jeroen Huising (WASHC Project leader), Prof (Mrs) Babalola (SSLM, Head of Department), and other experts in the Department, FUNAAB.

well as bringing relevant stakeholders together for data harmonization, better collection and management of data, and suggestions for improved soil fertility recommendations with visible positive impacts on rural livelihoods. Dr Huising reiterated that the visit aimed to get insights on the

research focus and the capacity of the Department in soil fertility management so that jointly, they could explore opportunities for partnerships in tackling the problem of land degradation and non-responsive soils. "SSLM has expertise in the various aspects of soil science

and we are willing and ready to collaborate with IITA for good quality research," said Prof. Babalola, SSLM Head of Department, as she received the guests. The Department also organized a tour around its Soil Science Laboratory facility for the IITA team.

SARD-SC organizes workshop in Cameroon on using IP approach to increase income for maize farmers

Support to Agricultural Research for Development of Strategic Crops (SARD-SC), one of IITA's projects working to improve productivity and income from growing maize, rice, cassava, and wheat, has partnered with the Institute of Agricultural Research for Development (IRAD) and organized a two-day workshop in Cameroon. The workshop aimed at laying a solid ground for the implementation of maize as a commodity using the Value Chain Innovation Platform (IP) approach with the potential of increasing the income of smallholder farmers in Cameroon.

IRAD and IITA scientists were in attendance together with members of staff from the Agricultural Investment and Markets Development (PIDEM) Project, The World Vegetable Center (AVRDC), Humidtropics national staff in Cameroon, and farmers from different parts of Cameroon.

The two-day workshop, held 19-20 March, was initiated by Dr Sam Ajala, Coordinator of maize commodity under SARD-SC and supported by Dr Chrysantus Akem, SARD-SC.

Cameroon is one of the Central African states where maize is regarded as an important staple food and a cash crop for the vast majority of the population. In 2013, a collaborative research project to introduce improved maize varieties in Cameroon through IRAD was initiated by Dr Abebe Menkir, IITA's Maize Improvement Program Coordinator, with assistance from Dr Silvestro Meseka, under the CGIAR Research Program on Maize (MAIZE). MAIZE has opened a window of opportunity for IITA not only to introduce new varieties/hybrids into the five agroecologies of Cameroon, but has also provided a platform for IITA and IRAD scientists to interact in many ways.

Other topics discussed during the workshop were the past and present state of maize improvement in Cameroon; experiences of IITA's implementation of regional maize projects in West and Central Africa since 1987 to date; highlights of the SARD-SC project using the IP of the commodity value chain approach; opportunities for IRAD's maize improvement program to collaborate; possible strategies towards addressing the gaps and challenges to maize improvement in Cameroon, and the way forward. Two PhD students, future maize breeders in Cameroon, also presented their work. They are the next hope for Cameroon in maize breeding.

Dr Rachid Hanna, IITA-Cameroon Country Representative, also led the SARD-SC team in Cameroon to meet Dr Joseph Bedima, Director General of IRAD. Their meeting discussed partnerships and collaborative research work and networking between IITA and IRAD.



Maize Improvement Workshop participants pose for a group photo.

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