

## IITA-CSAT scaling activity flourishes; welcomes Norwegian Ambassador to Mali

The [IITA-Climate Smart Agricultural Technologies \(CSAT\)](#) project continues to advance with activities in Mali and Niger. CSAT Mali and CSAT Niger are working to scale climate-smart technologies in Sahelian regions and provide farmers with options for better adaptation to climate change. Also, the project is funding research to develop additional opportunities for better adaptation in increased resilience.



Norwegian Ambassador Vegar Brynildsen and the Mayor of Mafeya looking at different varieties produced by farmers through the CSAT project in the region of Koulikoro.

Being executed simultaneously in both countries and funded by the Kingdom of Norway, the project will

run for five years, till 2024. CSAT the Kayes, Koulikoro, Sikasso, and Mali covers 32 communes under Segou regions.

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## Cassava silage increases milk production; saves on feed costs

Natural pastures and crop residues are used as livestock feed in the dry season for dairy animals. However, dairy production in Malawi is constrained by energy and protein deficiencies due to a high dependency on these natural pastures. Researchers have identified using cassava leaves to make silage or hay as an excellent strategy to supplement dairy cow feeding during the dry season to address the deficiency problem.

The use of cassava silage for livestock is being promoted by the Roots and Tuber Crops for Agricultural transformation



Grace Kamanga from the Department of Agriculture Services (carrying leaves) and casual workers mixing chopped cassava foliage and roots. Photo credit: Judith Chikoti (DARS)



in Malawi (RTC-Action) project under the cassava component led by [IITA](#) in collaboration with the Department of Agriculture Services (DARS).

The dairy cattle farmers have started using silage and are seeing an increase in milk production while making significant savings on the cost of feed by using fodder made from cassava leaves and roots instead of maize-based and other dairy feeds. Preliminary results indicate that supplementing cow feed with an average of 1.6 kg of cassava leaf-based hay per day per cow increases milk production from 6 to 8.5 liters. Cassava leaf silage has enormous value and can compensate for the lack of protein in cassava root powder to meet the animals' feed needs during winter and the dry season.

The project supports six milk bulking groups with more than 400 farmers, training them on cassava silage production, business management, and good cassava farming. They produce cassava silage by chopping up cassava plants, at 3–4 months after planting, into small pieces manually or using motorized or tractor-driven choppers. They mix these with chopped fresh roots in a ratio of 80% leaves to 20% roots. The mixture is put in plastic bags or in lined pits, compacted to expel all air, and sealed to allow aerobic fermentation. It is a cheaper alternative to store-bought cattle daily mash, reducing feed costs for farmers.

The Lusangadzi Dairy Farmers Cooperative Society, located in Mzimba



*Kenneth Betha filling the pit with chopped materials. Photo credit: Judith Chikoti (DARS)*

District, is one of the groups the project supports. Formed in 1980, the government helped them with a cooling room and equipment for milk processing. The group currently has a membership of 183 farmers, 131 of whom own cattle. Every morning, farmers from the community flock to the cooperative as a collection point for milk sale, giving an average of 15,000 liters of milk collected every month.

“Soon after the farmers started feeding dairy cattle with silage, milk production started increasing from 400 liters to 500 liters on average per day compared to those that were fed on maize silage and other feeds. We found cassava silage cheaper than dairy mash, which we used to buy from shops. With such an increase in dairy milk, we are currently

constructing a hall for income generation so that our group can continue growing,” said Hesco Banda, the chairman of the group.

Lusangadzi group is now selling its milk to Mzuzu dairy at a much better price than selling to milk vendors. The group has also said that there is an improvement in the milk quality with cassava silage. However, scientists are yet to prove this with lab analysis.

One challenge for the farmers is the limited production of cassava in the areas. Farmers sometimes run out of cassava biomass and must buy from other farmers in other locations. They are, therefore, now aiming to increase cassava production in their area with improved cassava seed.

## The Dreamers: Scaling seeds of success

Members of the Dreamers Group in Zambezia province, Northern Mozambique, were smiling all the way to the bank in the just ended farming season, 2019/2020. This year they generated more than 2,277,000 MZN (US\$31,625) from the production and sale of soybean and common bean seed and grain and vegetables.

The group, known as DG or just Dreamers for short, identified seed production as a very lucrative business. With support from the Improved Seeds for Better Agriculture project (SEMEAR) of Feed-the-Future Mozambique, they are now running a very successful



*Lourindo Jacinto Abel, the DG farm manager at the soybean farm.*



venture on the production and commercialization of soybean and common bean certified seed.

The group ventured into the seed production business in the 2017/2018 cropping season by renting a farm in Murrimo, a community in Gurue District, Zambezia Province of Mozambique, to start seed production. SEMEAR trained the group on seed production and sold basic seed of soybean and common bean to them to start them off in certified seed production.

The group started with a 10-ha field—7 ha for soybean and 3 ha for common bean certified seed. From this, they harvested 8.7 tons of certified soybean and 2.4 tons of common bean seed. These corresponded to 1.25 t/ha and 0.8 t/ha for soybean and common bean, respectively. SEMEAR also arranged with the Seed Inspection Unit for field inspection and certification of DG's seeds.

SEMEAR also supported DG in establishing demonstration fields/ farmer field schools. Here, neighboring farmers learn best crop management practices, source quality seeds, and access affordable mechanization services to improve production and productivity to ensure food and nutrition security and generate income.

In the second year (2018/2019), DG extended their seed production by engaging five outgrowers selected from well-skilled and knowledgeable farmers to produce seed with SEMEAR and DG's technical support. They supplied them with the basic seed acquired from SEMEAR and provided technical assistance until field inspection and certification. The farmers took care of all crop management (weeding, pest control, harvesting, and bagging).

Through rigorous best crop management practices, DG and its outgrowers produced 10.5 tons soybean and 8 tons common bean certified seeds, and 7.5 tons of soybean grain. DG bought the certified seeds from outgrowers at grain market price plus an additional 10 meticaís per kilogram (US\$0.13) if the farmers honored all their commitments stated in the memo of understanding signed between the outgrowers and DG.



*Ripping the farm for planting to ensure minimum soil disturbance as part of Conservation Agriculture.*

"It was a very good year. We managed to reach yields of 1.5 t/ha soybean and 1 t/ha common bean with the conditions we have. If farmers get these results, we can succeed in the development of the agriculture sector," said DG Leader Anacleto Saint Mart.

They sold the bulk of the seeds produced to *Sociedade de Beneficiamento de Sementes* (SBS), an agro-dealer in Gurue, the district capital, and Phoenix Seeds Ltd, a seed Company in Manica Province. The rest they sold to farmers in the community at half the seed companies' price.

DG also supported seed outgrowers to establish demonstration fields where

farmers can easily see the performance of the varieties and technologies they are promoting. DG provides land preparation (plowing and disc harrowing) and planting services.

Formed in 2016 by 10 young men, DG has continued to expand its operations, hiring staff and acquiring more land and equipment with their earnings.

"We at DG dream to become a center of knowledge where farmers will learn and share their experiences to improve productivity and production. We are happy with the current yields we are obtaining on our farms and the outgrowers' fields," said Saint Mart.



*SEMEAR project donor and team visiting DG's farm.*

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On 23 October, the Ambassador of the Kingdom of Norway to Mali, His Excellency Vegar Brynildsen, visited the IITA-CSAT project activities in the Koulikoro region. IITA-CSAT Coordinator [Tahirou Abdoulaye](#) received the Ambassador and his team from the Norwegian Embassy.

The day began with a courtesy visit to the Governor of the region. Accompanied by Abdoulaye and a representative of Malimark (NGO in charge of scaling activities), the Ambassador visited Mafeya in Meguetan commune. He highly appreciated the CSAT project's outputs, including demonstration plots of inoculated and non-inoculated soybean being introduced for crop diversification to reduce risk. The team also visited a plot of early maturing cowpea introduced for food security and incomes.

The visit continued with a meeting with a group of Koulikoro women learning how to process soybean.



*IER food technologist highlights the soybean transformation training to His Excellency Vegar Brynildsen.*

IER food technology laboratory, another project partner, led this activity. The women received training on the processing of soy milk and yogurt, couscous, *soumbala* (West African spice), and flour into food supplements for children. Soybean processing allows these women to have access to nutritious foods for their families. They can also process and sell these products, hence

generating cash incomes for their households.

The IITA-CSAT team thanked His Excellency Brynildsen for dedicating his first-ever visit outside the city of Bamako to the project's activities. They considered this a testimony to the importance the Embassy places on agriculture and climate change and confirms their confidence in the quality of the work being carried out in the field by the project team.

## Researcher calls for intervention to promote youth engagement in agriculture

The growing population in Africa poses both opportunities and challenges for its economy. In Nigeria, more than half the population are under 30 years of age, posing a significant challenge for policymakers in providing quality jobs for these youth. However, since agriculture is a major source of employment and livelihood, youth move between farm and non-farm jobs.

An [IITA-CARE Project](#) awardee, Adedotun Seyingbo, carried out a study to understand the pattern of youth transition between farm and non-farm jobs. The survey covered both urban and rural enumeration areas in all 36 states of Nigeria. Although youth migration from farms has been addressed in the policy space, there has not been much documentary evidence to substantiate these claims.

Seyingbo used quantitative data from the nationally representative General Household Survey implemented in three waves—2010/2011, 2012/2013, and 2014/2015, and developed by the country's National Bureau of Statistics in collaboration

with the [World Bank](#). The Living Standards Measurement Survey (LSMS) was adopted using three questionnaires: household, agricultural, and community/prices.

The research showed that within the period of study, more youth migrated from farm to non-farm jobs. Some of the factors accounting for this migration pattern included gender, age, education, access to mobile phones, farm size, asset size, access to electricity, death shock, and land access. Also, the difference in educational attainment between males and females affected the migratory pattern. The females would not transit from farm to non-farm jobs as their male counterparts. Youth in the northeastern and northwestern parts of the country appear to be more likely than those in the North central area to leave the farming sector for non-farm work, perhaps due to the ongoing Boko Haram insurgency.

Following the study, Seyingbo emphasized the need to address insecurity in the northeastern and northwestern regions. He also suggested promoting inclusive policies that will encourage female engagement

in the production value chain. The study recommended policies towards fair and easy access to credit and the rural digital revolution that will hugely support young farmers' aspirations to stay on the farm.

"More youth are likely to stay on the farm if there is guaranteed internet and electricity, and if measures for them to contain or manage shocks such as loss of a loved one, and land loss that have the potential to drain their income and impact the sustainability of their businesses are put in place," he added.



*Researcher and IITA-CARE awardee, Adedotun Seyingbo.*



# TETFund Engineering group seeks to partner with IITA in delivering science technology

On 26 November, delegates from the [Tertiary Education Trust Fund](#) (TETFund) Standing Committee for Research and Development (R&D) on Engineering visited [IITA](#) headquarters. The visit aimed to explore technology transfer mechanisms and strategies and IITA activities that involve engineering and mechanization to ensure that research impacts society through agricultural transformation.

[The TETFund](#) aims to identify available knowledge and research activities to provide R&D solutions to all aspects of the Nigerian economy. The engineering team visited IITA as part of establishing an R&D foundation by partnering with research institutes, the tertiary education sector, private sector, government, and development partners. “TETFund aims to not only fund research but also innovation so that our research can go beyond the shelf,” said Prof Olufemi Bamiro, Chairman of the TETFund National Research Fund.

[Kwesi Atta-Krah](#), IITA Director of Advocacy and Country Alignment Function, welcomed the group and introduced the activities of IITA. The group toured IITA engineering facilities to assist in identifying areas of interest. They visited the Facilities Management Service (FMS) and farm equipment office, where [Thierno Diallo](#), IITA Fabrication Consultant, and [Peter Kolawale](#), IITA Postharvest Specialist, showcased various machines in the fabrication section and the mobile cassava processing plant. The group also visited the cassava bread bakery in the cassava processing unit. Finally, they toured the Aflasafe facility in the IITA Business Incubation Platform (BIP). [Lawrence Kaptoge](#), BIP General Technical Manager, and [Alejandro Ortega-Beltran](#), IITA Plant Pathologist,



Prof Olufemi Bamiro, Chairman of the TETFund National Research Fund, communicating the purpose of the visit.

showcased the Aflasafe product and equipment used for production.

At the end of the tour, the visiting group commended IITA’s technologies and facilities. Bamiro said, “We are impressed with the technologies, and we see that IITA can be a major player in our project.”

Prof Danladi Matawal, Chairman of the visiting TETFund Standing Committee

R&D on Engineering, said that the IITA model is worthy of emulation. “Thanks to IITA for maintaining an environment that is conducive for, and supports research.”

At the end of the visit, Atta-Krah expressed appreciation for the team. “We look forward to updates and feedback on the next steps. You can count on IITA for partnership in this area,” he said.



Group photograph of IITA and TETFund Engineering group representatives.

## Got a story to share?

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