Cassava Diagnostics Project impacts: Tanzania

CDP worked directly with farmers in Tanzania to train them on the importance of using clean planting material.

What is CDP?

Funded by the Bill & Melinda Gates Foundation and the UK Department for International Development, the Cassava Diagnostics Project (CDP) has been working with institutes across East Africa since 2009 to diagnose, track and sustainably manage cassava viruses. Cassava is a staple crop for 500 million people in Africa and is currently threatened by two devastating viral diseases: Cassava Mosaic Disease (CMD) and Cassava Brown Streak Disease (CBSD). CDP has therefore been working to combat these diseases and so prevent widespread famine – by ensuring that cassava remains a reliable food source across Africa.

Phase 2 of CDP will close in 2018, and researchers are therefore taking the opportunity to reflect and learn lessons from almost a decade of work.

CDP's work in Tanzania

The Cassava Diagnostics Project (CDP) is headquartered in Tanzania at the Mikocheni Agricultural Research Institute (MARI) in Dar Es Salaam. As CDP closes, Dr Fred Tairo (Principal Agricultural Research Officer) reflects on how CDP has combated the spread of cassava viruses in Tanzania.

Infrastructure and training

One of the first stages of CDP's work in Tanzania was to improve the existing infrastructure of the bio-tech labs at MARI, as these labs lacked essential diagnostic tools, such as molecular sequencers, that would allow researchers to test and analyse their samples.

CDP therefore provided the MARI laboratories with both much needed equipment and training for the staff who use it. This has transformed the bio-tech labs at MARI into a quality centre for virology known across Tanzania. As a result, these facilities are attracting MSc and PhD students to join a new MARI-based training program. According to Dr Tairo, the work to improve the human resource capacity in the labs went "very well … both [the] long-term and short-term training". In fact, the training program has provided full and partial support to 14 postgraduate students – helping to shape the next generation of virologists in Tanzania.

Outreach to farmers

Before CDP began work, many Tanzanian farmers were unable to identify viral diseases in cassava, and so attributed failed harvests to environmental factors instead. To overcome this, CDP trained farmers to recognise the symptoms of viruses in their cassava.

Connected to this, by planting infected and clean material side by side as part of group training exercises, the project also demonstrated to farmers the importance of using clean planting material. This clearly showed farmers how poor harvests were caused by cassava viruses and how yields could be improved using clean materials.

This work increased the demand for clean planting material across Tanzania, helping local producers of clean cassava planting material to expand their businesses. As a result, there are now hundreds of producers in the region.

Seed certification system

Before CDP's activities began, farmers often purchased already infected material from cassava suppliers without knowing that it would pass the virus into their crops.

To address this, CDP worked with seed certification agents and representatives from different universities to develop a set of guidelines for vegetative propagated material. These were integrated into Tanzania's seed law in 2016 to establish a much-needed seed certification system for vegetative material in Tanzania.

Thanks to these new guidelines, Tanzanian farmers can now easily buy clean planting material from certified cassava producers.

"Tanzanian farmers can now easily buy certified, clean planting material"

CDP planted clean and infected cassava side by side to show farmers the difference between the two.

Strict liability for GMOs

In the early stages of CDP, MARI struggled to find large organisations to collaborate with because of the institute's work with genetically modified organisms (GMOs). GMO products were banned in Tanzania, with individuals or organisations open to prosecution for having any involvement at all with GMOs.

While MARI could research GMOs under an exemption for scientific research, many prospective partners were unwilling to risk collaborating with the institute due to the severity of this law.

CDP therefore hosted public forums asking the government to change the liability clause in the law. These forums eventually led to the President of Tanzania visiting MARI in 2014 to see first-hand how CDP was using its work on GMOs to create clean planting material for local farmers. Dr Tairo remembers the visit as the turning point in the campaign to change the law as the President said that "although the government does now allow GMO commercialisation, you cannot shy away from science".

In 2015 the clause was changed to a fault-based liability and enforced on a case-by-case basis. This allowed researchers at MARI to advance their work tackling cassava viruses and building new partnerships with agricultural institutes across Tanzania.

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