Cassava Diagnostics Project Impacts: Zambia

CDP's work in Zambia has given researchers a platform to help raise awareness of the threat of cassava viruses.

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 Zambia

The Cassava Diagnostics Project (CDP) has been working in Zambia since 2015 based at the Zambia Agricultural Research Institute (ZARI) at Mount Makulu. At the closing meeting of the project CDP Zambia's Country Team Leader, Dr Patrick Chikoti, reflects on the impacts of the project and its legacy in the region.

Increasing capacity at ZARI

One of the major impacts of CDP in Zambia has been the increased capacity with the addition of the virology laboratory and screen houses at ZARI. Before the project started, the laboratory lacked essential sequencing equipment for detecting and characterising cassava viruses with researchers relying on an ELISA microplate reader using enzymes to detect disease, which was unable to detect certain pathogens at a molecular level.

CDP has worked to increase this capacity by investing in new PCR sequencing equipment for the virology labs, allowing researchers to conduct DNA and RNA analysis and track viruses that were previously undetectable. Thanks to this advanced sequencing technology, CDP researchers in Zambia have been able to accurately track the spread of cassava viruses and create an outreach strategy for their extension teams to train cassava farmers in key infected areas.

Partnering with universities

Thanks to the new equipment CDP has provided in Zambia, researchers at ZARI have been able to partner with several national universities. These include the University of Zambia, Copperbelt University, Zambia Open University and Mulungushi University.

These partnerships have helped build connections between ZARI and these institutions and allowed researchers to collaborate with the university students and lecturers. Several of the students have been able to train at ZARI under a programme of joint supervision, giving them access to materials such as the PCR sequencing reagents that they would not otherwise have had.

> "We are now more visible to the general public in Zambia and in the region"

Establishing international partners

Alongside the universities in Zambia, CDP's research into cassava viruses at ZARI has created new links with international partners such as Cambridge University and Rothamstead Research in the UK. These partners have helped to analyse the survey data collected by CDP and worked with the researchers to accurately model cassava viruses in Zambia.

CDP has invested in new sequencing equipment at ZARI to help track the spread of cassava viruses.

Dr Chikoti recalls a specific example in 2016 where modelling data allowed the CDP team to track the spread of CBSD from neighbouring countries into Zambia. The models created in partnership with Cambridge University meant that CDP was able to accurately track how CBSD would spread across the country if nothing was done. The project's team in Zambia then created a policy brief on CBSD to submit to the Ministry of Agriculture that is now taking action against the spread of the virus. This action by CDP's researchers helped to combat the threat of CBSD and stop it spreading across Zambia.

Increasing the visibility of cassava research

CDP's work in Zambia has also helped to improve the visibility of institutions such as ZARI and the important work they are doing to track and combat the spread of cassava viruses across the region. Before CDP was created, many scientists struggled to draw attention to the threat of cassava viruses in Zambia and the importance of stopping the spread of infected plants.

The presence of CDP has helped to create a new platform for these researchers, as Dr Chikoti commented "we are now more visible to the general public in Zambia and in the region as well as internationally". This increased visibility has helped the project stop the spread of CMD and CBSD and allowed it to reach more cassava farmers across the country who are struggling with these viruses.

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