



## Cassava Diagnostics Project Impacts: Uganda



*The CDP Uganda team engaged farmers through training sessions held at built-for-purpose demonstration gardens*

### 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 Uganda

The Cassava Diagnostics project has been operating in Uganda since 2009 based at the National Crops Resources Research Institute (NaCCRI). As CDP closes, the project's Assistant Country Team Leader for Uganda, Geoffrey Okao Okuja, reflects on the impacts of the project and its legacy in the region.

#### Education of local farming communities

When CDP began its work in Uganda, it became clear that farmers in the community had very limited knowledge of cassava viruses, often believing that CMD and CBSD transferred via the soil instead of from plant to plant.

This knowledge gap meant that farmers were unable to prevent infection in their crops and,

in some cases, were contributing to the spread of infection.

Geoffrey and the team at NaCCRI therefore held training sessions at 20 different demonstration gardens across 11 districts in Uganda to improve local farmers' knowledge of cassava viruses. Together with the farmers, the team was able to point out the symptoms of disease on sample cassava plants. This interactive learning space helped educate more than 600 farmers on how best to



manage their crops to stop the spread of infected cassava across Uganda.

## Production of clean planting material

Alongside these training sessions, CDP worked to prevent farmers from using cuttings from already infected plants as planting material for their next harvest. This practice allowed viruses to pass from one year to the next and spread across cassava plants.

CDP therefore developed new clean cassava planting material in the virology laboratories at NaCCRI to help stop the spread of infected cassava plants throughout Uganda. This new planting material was then distributed to local farmers, as Geoffrey comments, “we have increased farmers’ access to clean and high-quality planting materials”.

Those farmers using the new clean planting material from NaCCRI have been able to multiply their yields by five-fold since 2009, providing them with valuable food and economic security and reducing the incidence of cassava viruses across Uganda.

## Detection of cassava viruses

Before CDP’s activities, cassava viruses in Uganda could only be detected once the plant began to show visible symptoms, meaning



*Use of clean planting materials caused average yields to increase five-fold between 2009 and 2018*

farmers struggled to stop the spread of infection and often wasted time and money on infected cassava plants.

CDP therefore worked to increase the capacity of disease diagnosis and, in 2013, provided the first PCR sequencer for agricultural researchers at NaCCRI, allowing the CDP team to analyse samples at a molecular level for the first time.

CDP is now able to work with farmers to help them monitor the crops at an earlier stage, removing infected plants before the disease can spread.

## “We have increased farmers’ access to clean and high quality planting materials”

## Seed entrepreneurship

Following CDP’s work to diagnose cassava viruses and identify clean cassava, the demand for clean planting material in Uganda increased. To avoid running out of clean planting material, Geoffrey and his team worked with government officials to create a ‘seed entrepreneur’ scheme.

Through this scheme the government bought improved varieties of seeds developed by CDP to sell to ‘seed entrepreneurs’ who multiply them in their fields. These clean crops can then be sold on to other farmers.

CDP’s work with this scheme helped increase the percentage of clean cassava plants in every district in Uganda and allowed farmers across the country to start their own small businesses producing and multiplying clean cassava.

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