



## Creating a sustainable cassava seed value chain in Nigeria

### STORIES FROM THE FIELD

#### OVERVIEW

Traditionally, farmers in Nigeria plant cassava from year-to-year using cassava planting materials exchanged from farmer to farmer. Cassava is propagated by stem cuttings, which were considered by the average farmer to be of little value, discarded at the end of the planting season or given away for free. Because of this system of distribution, cassava stems are recycled year after year, leading to buildup of disease, loss of genetic vigor, and lower and lower yields. Because farmers often do not distinguish between cassava stems produced for roots or seed, there is very little attention paid to preserving genetic purity and selecting the best future planting materials. This leads to a shortage of high quality cassava stems, especially for improved varieties. The low and slow multiplication rate of cassava stems and their easy reusability make cassava an unattractive investment to commercial seed producers, while the high cost of transport adds an additional burden. Even though cassava is critical for food and livelihood security for over 500 million people, its seed system has been plagued by low quality and remains mostly informal. The Bill and Melinda

Gates Foundation has funded *Building an Economically Sustainable, Integrated Cassava Seed System in Nigeria* (BASICS) project, which is working to change this by developing a cassava seed value chain that empowers local entrepreneurs in Nigeria.

The BASICS project is coordinated by the CGIAR research program on Roots, Tubers, and Bananas and implemented by six partners in Nigeria. Catholic Relief Services (CRS) has been implementing the Village Seed Entrepreneur (VSE) component of the BASICS project in Benue state since 2015. Over 120 VSEs are participating in the program. CRS trains and supports VSEs to commercially produce cassava seed, which they then sell to their neighbors as a local source of improved variety seed. VSEs learn basic cassava agronomic and business management practices to enable them to successfully establish and manage their fields. While strengthening the supply, the project also creates demand through demonstration plots and mass media marketing campaigns to promote improved cassava varieties and raise awareness about the VSEs.

## Challenges to Cassava Seed Systems

Two key challenges to the multiplication and dissemination of cassava planting materials are the low multiplication rate and the long lead time needed to produce them. The BASICS project is addressing these challenges using a unique rapid multiplication technology called Semi-Autotrophic Hydroponics (SAH). One 20 m<sup>2</sup> lab has the capability to produce high-quality, virus-free planting material sufficient to plant over 20 ha in one year. In comparison, it would take 2.4 ha to produce the same amount of planting material using traditional methods, which comes with associated risks of virus infection and varietal mix ups during handling. CRS, in collaboration with the International Institute of Tropical Agriculture (IITA), carried out the first laboratory-to-farmer field trials of this licensed technology. In 2017, 15,000 SAH plantlets were transported 600 km from IITA to Benue State and planted in open fields. The SAH technology is making it possible to disseminate disease-free materials of new and improved cassava varieties to VSEs and farmers at a commercial scale.

## Donor Visit to Field Sites

Lawrence Kent, a Senior Program Officer of the Gates Foundation, visited BASICS project sites in Benue state in March 2018 to see the project's fields and to interact with its seed entrepreneurs. While visiting the SAH Cassava Trial plot in Abinsi, Benue State, Kent was impressed with how well the plants were growing, especially in the drier region of Benue. Dr. Alfred Dixon, a renowned cassava breeder from IITA, accompanied Kent on the visit and noted that stems from SAH compared favorably with those from traditional propagation methods.

In an interactive session with VSEs from across the state, VSEs explained that so far, they have not had any difficulty procuring the needed foundation planting materials. VSEs said that after the BASICS project ends, they would use their contacts with IITA and National Root



Lawrence Kent, Senior Program Officer of the Gates Foundation, visits BASICS cassava fields in Benue State.

Crops Research Institute (NRCRI) to secure planting materials and leverage the VSE networks they have established through the program to market their stems. One VSE, Emmanuel Tuu, talked about how profitable the business of selling cassava seed has been:

“I am now known as the *Cassava Oga [big man]*. I have established a large customer base who I call when my stems are ready to harvest. “I call my previous year’s customers, many of whom are outside my immediate community” he says. Every year Tuu sets aside a few stem bundles which he shares with farmers in his village. This has secured goodwill for him in the community, and they help watch his farm when he is away. Another VSE, John Yange, explained that he preferred to harvest stems only last year because stem sales are more profitable than selling cassava roots. This year, he again hopes to focus on stem sales.

At the end of his visit, Kent remarked, “I think you have all the pieces necessary to make things work and ensure a sustainable supply of foundation seed. We know that it was difficult to believe that farmers would buy cassava seed. Your team and partners have proven that this is possible, and it is commendable.”

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