



Africa Innovations Institute

CAVA II

Cassava: Adding Value for Africa Phase II



PROJECT FACT SHEET

Title: Cassava Adding Value for Africa Phase Two (CAVA II)

Implementing Institution in Uganda: Africa Innovations Institute (AfrII)
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Project Partners: FUNAAB-Nigeria, FRI-Ghana, TFNC-Tanzania, UNIMA-Malawi
Project duration: April 2014 to March 2019

The Project is funded by the Bill and Melinda Gates Foundation through the Natural Resources Institute-University of Greenwich (NRI) as the grantee that also provides technical backstopping together with the Institute of Tropical Agriculture (IITA).

CAVA II is implemented by 5 Institutions across Africa. In Uganda it is implemented by the Africa Innovations Institute (AfrII), in Nigeria it is implemented by the Federal University of Agriculture, Abeokuta (FUNAAB); in Ghana by the Food Research Institute (FRI); in Tanzania by the Tanzania Food and Nutrition Centre (TFNC) and in Malawi by the Chancellor College, University of Malawi (UNIMA).

CAVA II picked up in April 2014 to build on the success of the first Phase of the Project dubbed Cassava: Adding Value for Africa (C:AVA) following its successful groundwork during implementation from 2008/9 to March 2014. C:AVA successfully piloted development of value chains for HQCF by supporting farmer processors to establish HQCF processing sites and to process HQCF in Eastern and Northern Uganda. Further, it facilitated processors to supply on contract arrangements, HQCF to end user industries such as rural bakeries, beer breweries, and biscuit manufacturers who use it to make composite flour, beer and biscuits respectively.



CAVA II is being implemented in 21 districts of Nakaseke, Nakasongola, Kiryandongo, Lira, Apac, Alebtong, Dokolo, Oyam, Kole, Otuke, Amolatar, Kibuku, Pallisa, Budaka, Bukedea, Kumi, Soroti, Serere, Ngora, Katakwi and Amuria.

CAVA II charitable purpose

To increase the incomes of smallholder farmers (SHFs) and community processors through participation in profitable and sustainable value-added cassava chains in five sub-Saharan African Countries (Uganda, Nigeria, Ghana, Tanzania, and Malawi).

Strategy/approach

The overall aim of CAVA II in Uganda is to create by 2019 an annual demand for 69,030 tons of fresh cassava roots from smallholder farmers and incomes from sale of fresh roots and processing by smallholders will generate at least USD4.5 million/annum for rural communities.

Key Focus Areas

- Increasing smallholder farmers' cassava productivity.
- Expanding and developing cassava processing.
- Expanding cassava products options, market opportunities and geographies.

Project Activities

- Train Smallholder Farmers (SHFs) on good agronomic practices and support them to access improved cassava varieties and good quality planting materials from Cassava Seed Entrepreneurs (CSEs).
- Create awareness, provide training and mentorship on the investment opportunities in the various cassava value chains (Cassava Seed Multiplication, Fresh Cassava Root (FCR) production, Cassava processing, and substitution by industries).
- Innovate, adapt and promote efficient cassava processing and drying technologies (Sun drying, Solar drying, and Flash drying).
- Facilitate business opportunity meetings between SHFs and processors; and processors with end user markets (Breweries, Bakeries, Composite Flour Millers).
- Strengthen the supply chain, improve quality and ensure traceability along the cassava value chains.
- Strengthen capacity of equipment fabricators through learning visits to other countries and trainings from other fabricators.
- Information and Knowledge sharing.

Project beneficiaries/Target Groups

- Smallholder farmers.
- Community Processing Groups.
- Small and Medium Enterprises.
- Traders/transporters.
- End-user industries i.e. Breweries, Paperboard, Biscuit and Composite flour millers.
- Financial institutions.
- Selected projects working on cassava value chains.

CAVA II Uganda achievements and Impact

- Increase in Volumes of Fresh Cassava Root (FCR) supplied (as per December 2016)
Since the inception of CAVA II, FCR production has almost tripled with an exponential growth shooting above the targeted projections.

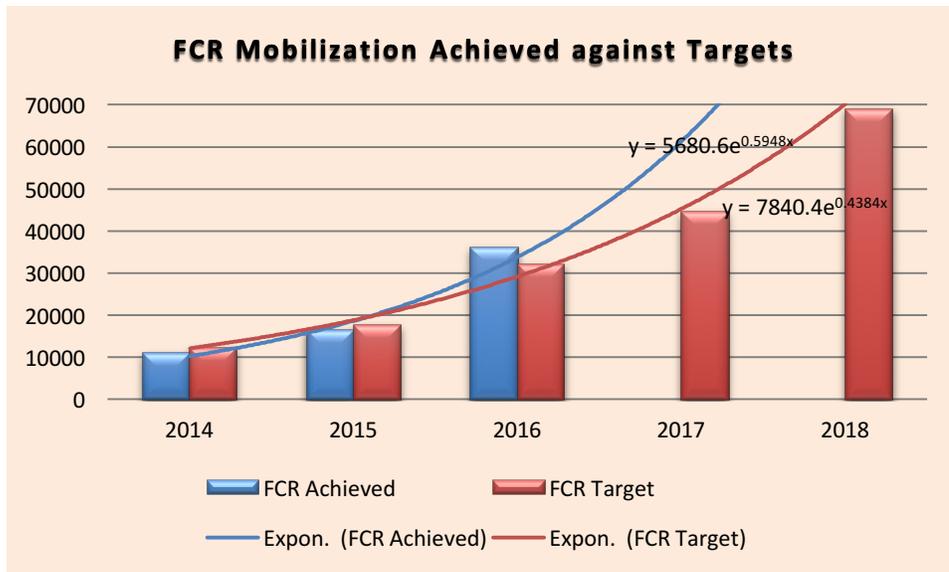


Figure above shows the growth in FCR mobilization for HQCF Production over the years

- Increase in Small Holder Farmers (SHFs) and processors Income. Incomes of SHFs have over the years gradually increased due to the intensified project activities of increasing Fresh Cassava Root (FCR) production and HQCF market expansion to the beneficiary areas.

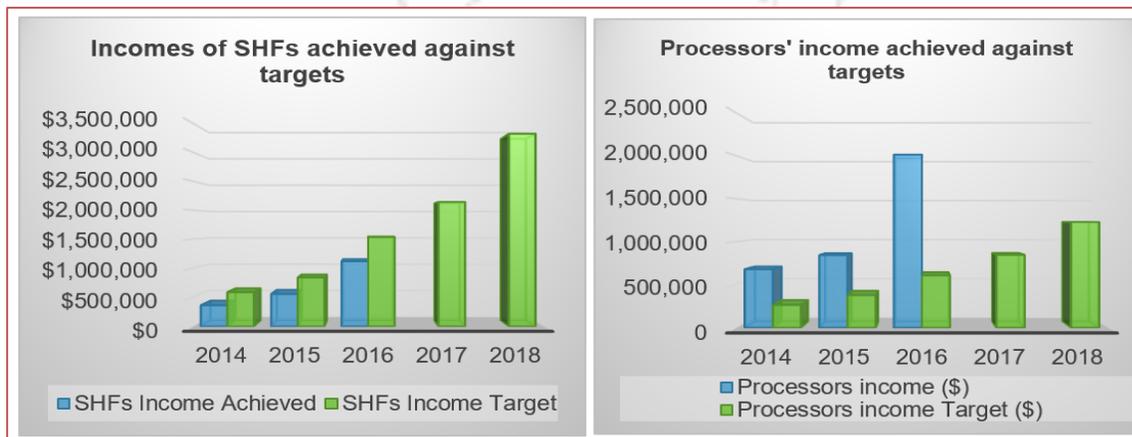


Figure above shows increase in smallholder farmers and processors income

- Aggregated demand for FCR from 2014 to 2016

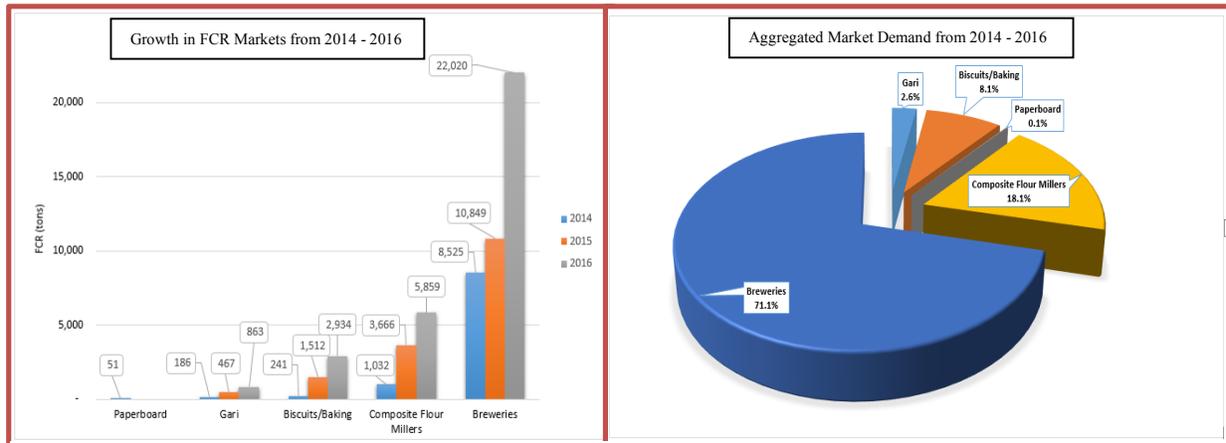


Figure (Left) shows how most of the different FCR market segments have grown in just an expanse of three years. (Right) The pie-chart on the other hand reveals market demand by segment; Breweries industry (Uganda Breweries Limited) is currently the largest consumer of HQCF in the country

- Established 2 flash dryers in Northern Uganda. These have been successfully installed at Wind Wood Millers Limited in Lira and Adyaka Wholesalers Limited in Apac district. The facilities dry up to 3 tons of HQCF in a shift per day.



processing of HQCF at Wind Wood Millers Limited cassava flash dryer factory in Lira.



Samples of the final HQCF product from the flash dryer.

- Established 5 solar drying sites in parts of Eastern, Central, and Northern Uganda. Solar drying has proven effective by reducing drying time from 5 hours in open dryers to 2.5 hours inside the screen house.



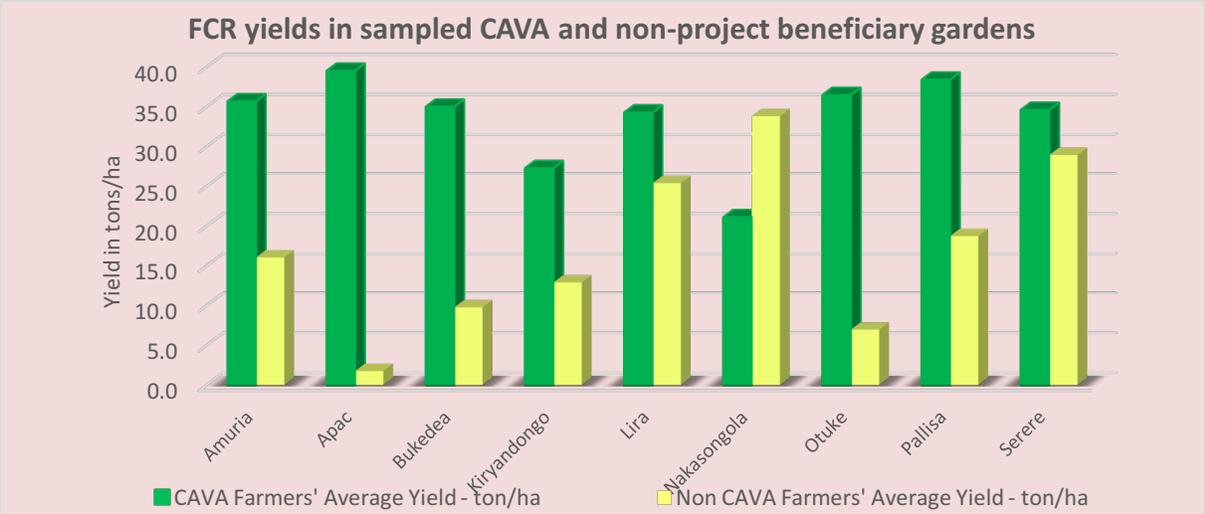
A solar screen dryer established in Buliisa district under CAVA II Uganda supervision

- Established 53 sun drying processing sites in the project areas of operation. Sun/ open raised drying has been adopted by many of the cassava processors due to the many advantages that come with using the technology including quality of the flour.



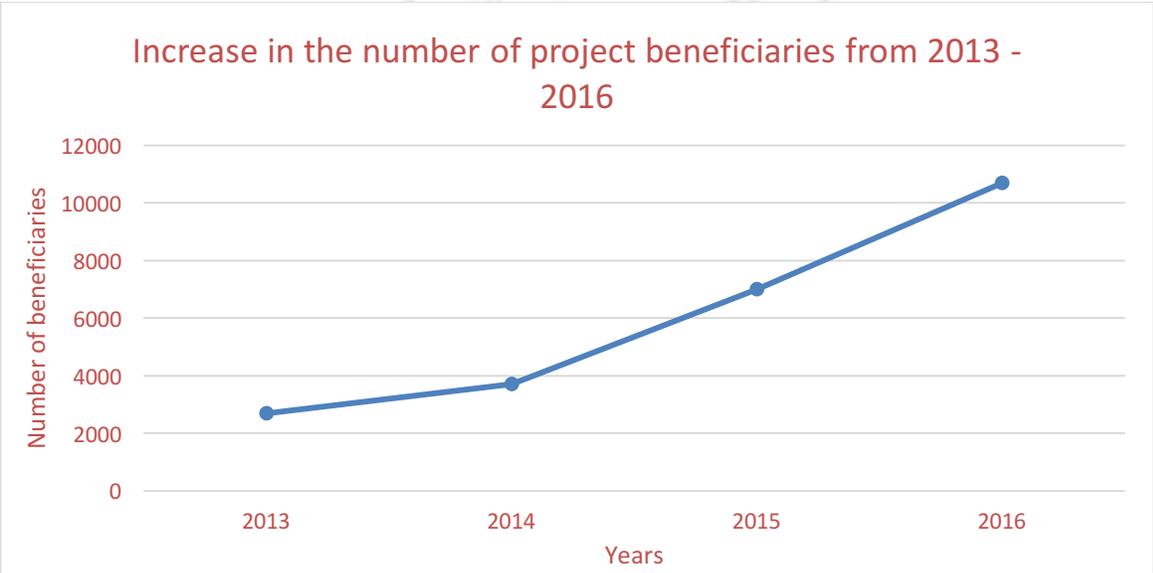
Ms. Sumaiya Nakayiki, a processor of the NADIFA farmer group in Nakasongola district spreads cassava chips on the raised metallic racks

- Increase in cassava yields from a baseline of 16.1 t/ha in 2014 to 33.8 t/ha in 2016 in beneficiary gardens. CAVA beneficiaries have demonstrated an enormous improvement in the yield of FCR in production as observed in the sampled districts. An average CAVA beneficiary farmer harvests 33.6 tons/ ha of FCR as compared to 18.1 tons/ha by an average non-CAVA beneficiary.



Bar graph showing the increase in cassava yields in the sampled districts.

- Increase in number of beneficiaries (direct and indirect) from 2,688 to 10,699 SHFs. Through continuous recruitment and training of new farmers, community processor groups, and SMEs, the project has extensively expanded its scope in number of people benefiting from project activities.



Graph showing the exponential growth in the number of beneficiaries over the years.

Testimonies of CAVA II Uganda Beneficiaries

Widow highly profitable in HQCF cake production and cassava farming

Betty Ouni, 48, belongs to Oryem Can Widows and Orphans Care group. Her husband died 20 years ago leaving her with their 6 children to care for. She is also looking after 4 orphans she adopted. Betty embarked on the baking business in 2014 after CAVA trained her in processing HQCF for baking. She is now known by many for her cassava cakes. Betty extends this knowledge and skills in baking to other women and since 2014, She has trained 390 members in Alebtong and 540 school drop outs in Oyam district.



Betty scoops some cassava flour to bake



Betty with one of the women she has trained in baking

Through the proceeds from her baking, Betty has established a commercial building in Baar sub-country, Lira district, worth 16 Million Uganda Shillings. *“This 3 roomed building will serve different purposes. One as a store for my harvest and processed HQCF, the other for my baked products while the third room is for stocking herbicides”*. She intends to construct another structure meant to be a better housing spot for her and the children.



In front of her new commercial building



In front of her current house of residence

Betty also plans to buy a motor cycle to ease transportation since she makes deliveries to far distances of which transport costs are high. She Processes about 12 tons in a month of HQCF and supplies to the local markets.

Additional to her baking business, Betty is also a cassava farmer and owns a 34acre garden of NASE 14 cassava variety that she planted in March 2016. She accessed the planting materials through Afril's CAVA II/CSS projects. In 2015, she earned over 4 Million Uganda Shillings from stem cuttings sold while in 2016, she sold 178 bags of NASE 14 stem cuttings to fellow farmers for multiplication. These farmers are spread out to Kole, Oyam and Dokolo districts. Additionally, the farmer group she belongs to has been contracted to supply over 2000 bags of NASE 14 cuttings to Operation Wealth Creation (OWC) in April 2017 to which they intend to sell to at about 40-45,000 Uganda shillings per bag.

In her words *"When you are a widow, people think you cannot survive on your own without a husband to take care of you. I am a living example that you can always make it in life, even after you are left all alone with children to have to feed and educate. I am glad for the far I have come since CAVA II Uganda discovered me, the knowledge and skills development extended to me by this project have made me who I am today. A successful widow"*

'Cassava production has impressively changed our lives'

Molly and Clarkson Egwang multiply cassava seed and are also processors of High Quality Cassava Chips (HQCC). With the proceeds of their enterprise, the couple pays for their children's education, cover medical expenses among other family responsibilities.



The Egwang family at their home in Apac District

Mr. Egwang Clarkson,43, and his wife Molly Egwang, 40 years, are cassava farmers who belong to the farmer group, Agency for Food Security Network (AFOSEN). They live in an iron roofed brick house fitted with solar lighting at their village home in Apac District. The couple has 7 children of their own and have also taken into their care, 6 orphans.

Apart from farming cassava, Mr. Egwang has taken on a career of Education, thanks to earnings they made from cassava production that made his dream come to life. *"When we got the 3.5 Million Shillings from the stem cuttings we sold, I made sure I divide this money*

to fund both my husband and our children's education. He enrolled to Kampala International University (KIU)to attain his degree in Education in order to attain his great dream of becoming a head teacher" says Molly.

"As a family, we plan together, my wife and I. I was in school, my children were in school, we had to eat, seek medical care when necessary and we even had to dress. There was a lot demanding but here we are. I have advanced in my career, our house is now plastered and my children are all in school thanks to cassava production" says Mr. Egwang who is currently the Head Teacher of Apwori Primary School in Apac District.

Their first born son, Ronald Egwang has completed his Secondary level and hopes to take on an agricultural course at the university. *"For me, this has a sentimental feeling to it seeing how far agriculture has brought me in life" remarks a smiling Ronald.*

The couple has also managed to purchase a motorcycle which has ably eased Mr. Egwang's transport challenges for he is able to get to his job at the school on time. They have also bought a cow and plastered their house at a cost of 4.5 million Uganda shillings.

The Egwangs currently own a 6acre garden of NaSE 14 and 1 acre of NaROCASS1 cassava varieties. In 2015, the couple made 6.8 Million Uganda shillings from stem cuttings sold.



Molly Egwang in one of her cassava gardens at home in Apac District

“Having these gardens has largely supported our processing for we are able to sustain fresh root supply because the varieties are high yielding and have less cyanide which makes the processing go on smoothly” says Molly.

In 2015, they made earnings of 2.3 Million shillings from processing and in 2016, they processed 32 tons and supplied to local markets at 900 shillings per kilo.

Molly has mastered all the required agronomic practices and a visit to her cassava garden would reveal that she plants the cassava in rows, weeds on time and properly cares for her garden as is expected.

Molly extends this knowledge to fellow farmers and is encouraging them to increase their acreage of cassava production to about 2 acres each to increase production. Likewise, to maximize on their production, the couple has cleared and additional 2.5 acres of land to multiply the NAROCASS 1 variety in march 2017, and also cleared another 1.3 acres to multiply the NASE 14 cassava variety.

‘Cassava farming has given me a life I never imagined’



The Akutu family at their home in Amuria District

Mr. Akutu Augustine is 54 years and is married with 9 children. He owns 16 acres of NASE 14 and another 84 acres of NAROCASS 1 cassava varieties on his farm in Amucu, Amuria district. Additionally, Akutu has cleared another 122 acres of land on the farm to expand his multiplication of the good seed. He has also purchased 120 acres of land at his home on which he intends to multiply more of the NAROCASS 1 and NASE 14 cassava varieties.

Mr. Akutu has been able to educate his children, set up a firm home and gone beyond, to become a man of great influence within the community since he embarked on cassava farming. His passion for farming stems from his upbringing. *“My father was a farmer but he was more into cattle rearing. He never put in much effort in cassava farming, in fact, he never encouraged it. I however changed it all,*

back in 1978 when I embarked on the journey to grow cassava. I was a boy then but, 39 years later, there is so much I have achieved from cassava” remarks Akutu. In 2016, he sold 6000 bags of stem cuttings that earned him about 40 Million Uganda Shillings and sold an additional 330 bags that earned him about 30 Million Uganda shillings. He has been given an LPO by the government to supply 481 bags of cuttings to Abim district. This deal is yet to be another breakthrough for the Akutu family.

Apart from multiplying cassava, Akutu is also a prominent processor of High Quality Cassava Chips (HQCC) using a chipper he acquired through the CAVA II Project. *“I have bigger dreams. I want to establish a cassava flash dryer factory in Amuria because today, we have a lot of farmers that have taken to cassava farming on larger acreage. So, with all this cassava, why can’t I set up a cassava factory?”* remarks a smiling Akutu. He has also expressed interest in purchasing the inflatable mobile solar dryer for his processed cassava chips and plans to work closely with the CAVA II Uganda team to acquire this technology.



Mr. Akutu and his wife (standing) peel cassava to process HQCC

As a model farmer, the community turns to him for advice on both cassava farming and processing. Akutu has reached out to over 1,000 farmers around Amuria and the neighboring districts. *“Cassava is giving me good record. I train other farmers in good agricultural practices, and even avail them knowledge and skills in processing to obtain HQCF. In a week, I get at least 30 farmers coming to see me to learn. Since 2013 when Afril discovered me and shared this knowledge, I have since become a ‘big’ man”* remarks a smiling Akutu. He further adds, *“Beyond just availing knowledge, my wife and I support fellow community members in times of hardships. For example, when a neighbor loses a loved one, we offer them both dried and fresh cassava to cater for food. We have also created employment because people come to peel cassava for us when we are going to process. We also hire a vehicle to transport the cassava from the garden in Amucu to our home, where we do the processing.”* His cassava garden is about 20 Kms from his home.

CAVA II Uganda adopts over 40 new SMEs and CPGs into cassava production and processing

With increased efforts to promote cassava value addition for increased shelf life and better income, new Small and Medium Entrepreneurs (SME’s) and Community Processing Groups (CPGs) in Uganda are increasingly expressing interest in production of High Quality Cassava Flour (HQCF). The 48 new SME’s and CPGs are from the Northern and Eastern parts of Uganda. This interest is largely attributed to the CAVA II Uganda project implemented by the Africa Innovations Institute (Afril).

In August 2016, 33 new SME's and CPGs in Teso and Bullisa areas were initiated into active HQCF processing. Among these is Landmark Millers Limited in Soroti district (SME), Koloin Agro-processors in Ngora district (SME), Teso farmers in Soroti district (SME), Kokom in Pallisa district (CPG), Kokong Village SACCO in Ngora district (CPG), and Marshall Cassava in Bullisa district also an SME. In the Lango region, over 15 SMEs and CPGs were adopted including ORIB CING Womens' Group in Alebtong district (CPG), Twomo Emmanuel in Apac district (SME), IGEL Cassava Growers in Kole district (CPG), Ongica Farmers Group in Lira district (CPG) and Divine Organic Foods in Lira district (SME). Since their initiation, the project has availed them trainings in the areas of quality assurance in value addition with targets to have traceability to ascertain quality in cassava processing. The project has also linked these to clean planting materials through collaboration with the Cassava Seed System project in which certified and high yielding disease tolerant cassava varieties of NAROCASS I, NASE 14, and NASE 19 have been readily accessed for planting, to increase yield production. The varieties give a yield of 30 tons per hectare and these are yields that are very hopeful to Uganda to sustain the cassava processing sector.

One of the beneficiaries, a new SME and CSE from Ngora district, Mr. Okiror Gilbert of Koloin Agro-Processors has adopted the use of raised metallic sun drying racks for his processed cassava. With this technology, Mr. Okiror is able to achieve drying in 3 -4 hours and then mill into flour. The technology has also saved him the burden of drying cassava on bare ground. *'I have been a cassava farmer for a long time but it is just of recent after CAVA II discovered me, that I have greatly improved in this business. I started on cassava multiplication and processing, and currently with my 10 acres of cassava I'm able to sustain supply for my processing. I'm also extending this knowledge to fellow farmers and I can tell you, a lot is changing in their lives as well.'* says Okiror.



Mr. Okiror Gilbert spreads his cassava chips on the raised metallic racks



Mr. Okiror and his son pack NASE 14 stem cuttings to sell to farmers for multiplication

With the trainings received from CAVA II Uganda, Mr. Okiror has managed to extend services including availing farmer to farmer skills enhancement (pay a visit and learn), trained youth on good agricultural practices such as proper spacing, row planting, weed management, and timely harvesting. Also, the value addition demonstrations he conducts are widely impacting on the whole community and many have turned to cassava production. He has established a farmer to farmer savings club in which at every sitting, each farmer gives in a savings of 1000 Uganda shillings.

Another beneficiary SME, Mr. Charles Okubal of Landmark Millers Limited in Soroti district, has been in the processing business dealing in maize milling and has now dedicated part of his milling unit to process HQCF. *'We have a very big dream for cassava and we are taking it one step at a time. I have embarked on establishing raised metallic drying racks at all my processing sites based in the rural setting. I must however admit that before we met CAVA II Uganda, we had so many struggles with cassava, drying it on the ground and with my mill being by the roadside, the quality was being greatly affected'* says Okubal. *"Cassava is here all year round and in Soroti, cassava here is the staple, therefore, if we have to sustain and improve livelihoods of our people, we need to promote what we locally depend on, add value to it and promote it further than just a crop for food"* adds Okubal.



Mr. Charles Okubal, the Director, Land Mark Millers Limited in Soroti speaks to AfrII about his journey with cassava. Also in the photo is the CM CAVA II Uganda Mr. Francis Alacho and the AfrII Zonal Manager Mr. Anthony Ijala (center).

His vision on cassava involves an inclusive out grower's business model. He has set up mother gardens from which farmers can access new varieties of good quality planting materials to sustain root supply. *"Our network is such that we have six registered sub-counties with 10 groups of farmers registered with us. We have tasked farmers to each give the mill 1 acre of cassava of the certified planting material. In Ngora, for example our farmer group has already planted some new materials on their 10acre piece of land. We have also agreed that Landmark millers must have at least 10 acres in each location to act as the mother garden for seed multiplication. We however also have some farmers outside the network that keeps expanding thanks to CAVA II interventions. We are assured of the material we circulate, because so far, through CAVA II, I have been able to access clean planting materials to sustain the*

fresh cassava root supply for my mill". He followed the advice availed by CAVA II and has since made a break through in supply, being one of the major suppliers of HQCF to Uganda Breweries Limited (UBL). *"We are expected to supply about 200 tons of HQCF to the brewery for their Ngule and Senator beers but we also have the regional markets, like Rwanda and South Sudan buying from us"* says Mr. Okubal who is also hopeful to obtain the cassava flash drying technology in the near future.

Conclusion

The project has attracted attention of the local media both print and electronic who approached AfrII for selected interviews with key project officials, project beneficiaries and product end users. These have also been invited to profile CAVA II works in its regional areas of operations during organized activities like training processors in HQCF production, farmer field days and other related project activities. News features, documentaries and case studies have since been published and produced creating further awareness of the impact of the CAVA II project in

Uganda. Below are excerpts of the news articles and publications released on CAVA II Uganda impact;

http://www.newvision.co.ug/new_vision/news/1320187/govt-promote-cassava-alternative-wheat-barley published on 4th February 2015, reported by Prossy Nandudu

<http://www.monitor.co.ug/Magazines/Farming/Promoting-high-value-cassava-products/689860-3456688-fcr4c8/index.html> published on Sunday November 20th 2016, reported by Lominda Afedraru

<http://www.monitor.co.ug/Magazines/Farming/Improved-cassava-varieties-makes-a-fortune-for-Akutu/689860-3836818-uqbsqh/index.html> published on March 5th 2017, reported by Simon Peter Emwamu

http://www.newvision.co.ug/new_vision/news/1450893/funding-uk-mps-lobby-ugandan-farmers published on on 12th April 2017, reported by Prossy Nandudu

<http://cava2.unaab.edu.ng/index.php/latest-news/255-cava-ii-uganda-adopts-over40-new-smes-and-cpgs-into-cassava-production-and-processing> published on the CAVA II project website.

More of these publications in press or other media can be accessed on the AfrII website www.afrii.org and have also been circulated through the AfrII social media sites of Facebook, Twitter, YouTube, LinkedIn and Instagram that can be accessed directly through the website.

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