

ANNEX V
INTERIM NARRATIVE REPORT
Year 3 (31/05/2014 – 30/05/2015)

CASSAVA G MARKETS



3rd annual meeting participants at Ryalls Hotel



Field visit to Carlsberg Brewery, Blantyre



Nampak factory, Blantyre



Flash dryer, Njuli

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1. Description

1.1. Name of beneficiary of grant contract:	Natural resources Institute, University of Greenwich at Medway
1.2. Name and title of the Contact person:	Professor Andrew Westby
1.3. Name of partners in the Action:	University of Agriculture, Abeokuta, Nigeria Council for Scientific and Industrial Research, Food Research Institute, Ghana Tanzania Food and Nutrition Centre, Tanzania Africa Innovations Institute, Uganda University of Malawi, Chancellor College, Malawi Naliendele Agricultural Research Institute, Tanzania
1.4. Title of the Action:	Improving the livelihoods of smallholder cassava farmers through better access to growth markets (CassavaGmarkets)
1.5. Contract number:	DCI-FOOD -2012/290-6
1.6. Start date and end date of the reporting period:	13 May 2013 to 12 May 2014
1.7. Target county (ies) or region(s):	Ghana, Nigeria, Tanzania, Uganda, Malawi.
1.8. Final beneficiaries &/or target groups! (if different) (including numbers of women and men):	Final beneficiaries: Small-holder cassava farmers; Processors; Employees of Small and Medium Scale Cassava Processing Enterprises; implementers of cassava value chain development initiatives Target Groups: Small-holder cassava farmers; Processors; Employees of Small and Medium Scale Cassava Processing Enterprises; Scientists in beneficiary countries, Institutions, Small and Medium Enterprises; Users of cassava flour and related products.
1.9. Country(ies) in which the activities take place (if different from 1.7):	India

2. Assessment of implementation of Action activities

2.1. Executive summary of the Action

In this reporting period, activities have commenced for all workpackages. During this reporting period there were two annual meetings being at the Federal University of Agriculture, Abeokuta, Nigeria, 2 to 5 August 2013 and the other at the Central Tuber Crops Research Institute (CTCRI), Kerala, India, 14th to 19th May 2014. These meetings were used to assess project progress and plan ahead for the following year. The Project Committee coordinated activities via email at other times.

A ROM mission was undertaken in Tanzania in June 2013. The logframe was revised. A number of minor changes were made (highlighted in red) which reflect the progress of the project. The project is on target to deliver the outputs but some are delayed slightly. This was because some outputs required inputs from the CAVA project and these can add much value to the project. Other delays were due to the need to depend on the harvest times. The project is on track and is adding additional value in a number of instances. The summary for each workpackage is as follows:

Workpackage 1. Assessing the impact of climate change on cassava flour value chains

The overall objective of WP1 is to assess the impact of climate change on cassava flour value chains. Through a literature review WP1 is assessing the projected climate change for cassava growing areas in Africa, but focusing on joint CassavaGmarket and C:AVA project geographical areas in Ghana, Nigeria, Uganda, Tanzania and Malawi. Cassava is grown in about 40 African countries, but in 2011 these five countries accounted for about 57% of the continent's production. Climate change is and will influence the suitability of a given area for cassava production. In line with the overall WP objective we are therefore considering the influence of climate change on cassava value chain systems (i.e. from root production to consumption), but our emphasis is on post harvest systems, which have received very little attention to date. As well as the review work, WP1 is doing some further targeted work at selected C:AVA sites to assess impacts of climate change and variability. This includes an assessment of the influence of climate change and variability on cassava cyanogenesis and mycotoxin formations (PhD study in Nigeria); MSc studies of the impact of climate change and variability on cassava flour value chains in Ghana (completed) and Nigeria (completed); and an MSc study on the impact of climate change and variability on food safety and quality in Malawi (about to start). Outputs from the above activities are leading to the development of recommendations for adaptation, including the identification of further research needs which will be reported in later reports.

Workpackage 2. Understanding the impact of cassava brown streak disease in producing HQCF

Cassava brown streak disease (CBSD) has been a major impediment to food security and economic development of smallholders in eastern Africa since its major outbreak in 2004. The disease particularly affects value addition products such as HQCF as the severely rotten roots are unfit for processing and also contaminate other good quality roots. The main aims of WP2 are to understand the effect of the disease on cassava root yield and quality, to investigate the effect of farmer practices such as early harvesting as a coping strategy, to identify sources of resistance in local cassava land races and elite lines for controlling the disease, and finally to use state of the art next generation sequencing technologies (RNA-Seq) to identify resistance genes. We've made much progress on all the above activities in this Action. Three major field experiments to understand the effect of CBSD on cassava yield and quality confirmed that CBSD can cause yield losses up to 28% in the susceptible variety Albert, while the average yield loss of 9% was recorded across different varieties tested. Harvesting at 12 and 15 months after planting caused 10% and 12% losses, respectively while harvesting at 9 months caused only 4% losses. Experiments to identify sources of CBSD resistance identified high diversity in the cassava germplasm and 4-5 lines with high levels of resistance to the disease. Experiments on next generation sequencing are currently underway which are expected to identify candidate resistance genes for the disease. The activities are collectively aiming to generate

new knowledge that can be used to mitigate the impact of disease on smallholders in CBSD-affected countries.

Workpackage 3. Developing specific technologies to improve the efficiency of household/village and SME level processing

In WP3, findings from fabrication, optimisation and testing of low cost drying technologies at village level, modification of flash and bin drying technologies for small and medium scale levels and use of agricultural waste for drying have encouraged transfer of technologies to Malawi, Uganda and Tanzania drawing experiences from Nigeria, Ghana and India. Investors have been shown various options to enhance viable and profitable cassava enterprises using appropriate drying technologies. SMEs adopting those drying technologies have started to increase and the project is currently building more capacities for machine operation and maintenance. Documentation of drying options for sustainable and profitable ventures and demonstration of best solar and artificial (flash and bin) drying technologies are ongoing to ensure good manufacturing practices.

Workpackage 4: Ensuring the safety and quality of processed cassava products in market orientated production

Vito to add up to 10 lines

Workpackage 5. Expanding the range of uses of cassava flour to meet identified market demands

The Work Package 5 (WP5) is focused on assessing the extent to which HQCF can be used for novel foods and industrial applications and hence, expanding the markets for HQCF and developed products. This is because HQCF has been identified by previous research as a replacement for wheat flours in bread, confectionary products, some improved versions of traditional food products, as an extender in the glues for the plywood and paperboard industries. Under WP5, the functional and physico-chemical properties of HQCF and other cassava based products have been established. Also, HQCF has been used to make prawn crackers, snacks, composite foods (Ghana), mixed with wheat and mushroom to produce Chin-Chin (Nigeria), added to soaked and chipped cassava to prepare Atap (Uganda) and used as a composite of blended maize flour to prepare Ugali (Tanzania). In Malawi, the principal cassava varieties have been explored for use in paperboard companies. These products are currently being tested for acceptability with end use partners.

Workpackage 6: Maximising the gender and livelihood impacts of cassava value chain development

WP6 includes gender studies that focus primarily on Uganda, and comparing against similar research conducted in Nigeria and Malawi. The final output of the work package is a paper for publication along with other communication materials and will be the first comprehensive study based on observing new / existing value chains. To date, activities have been largely completed. One publication has been accepted and another is currently in progress.

Workpackage 7: Establish best practices and dissemination of project outcomes

WP7 is working toward the result, 'knowledge consolidated to enable best practices to be documented and disseminated'. Two important deliverables contributing to this are Case Studies and Best Practice Guidelines for establishment and support to cassava value chains, which are based on experience with cassava value chain development across five countries, drawing on C:AVA project experience and final evaluation studies. There will be at least one detailed case study per country, selected to bring out the learning points associated with different cassava value chain development scenarios. The final selection and planning of the Case Study contents is underway and the outline for the Best Practice Guidelines is being drafted. The timing of these activities has been delayed because of delays in availability of C:AVA phase 1 evaluation data, but is now on track.