

## Cluster annual report - 2018

### SW4.4 – Nutritious sweetpotato for expanding markets and improving diets



Frederick Kobina Ebo Grant

## MAIN ACHIEVEMENTS

Cluster scientists made important contributions in 3 different outputs (SW4.4.1-Tools and models for nutrition education and behavior change to improve diets; SW4.4.2-Technologies, tools, and models for upgrading sweetpotato value chains and diversifying markets and SW4.4.3-Evidence base, policy options, and investment guides for sustained investments in nutritious sweetpotato) of SW4.4. Various protocols on quality and safety of puree and other foods were developed and applied to vitamin A, vitamin C, protein, fat, microbial load, and other nutrient analysis that will be applicable in various country labs in SSA and Lima. In Kenya, a study assessed the level of compliance to good manufacturing practices (GMPs), hygiene, and microbial quality in OFSP puree processing plants. Findings indicated low level of compliance to GMPs, high levels of microbial counts on food equipment surfaces, installations, and personnel hands and in packaged OFSP puree which were above the recommended microbial safety and quality legal limits. It is recommended that plant hygiene inspection, environmental monitoring, and food safety trainings are implemented to improve hygiene, microbial quality, and safety of OFSP puree. Using the theory of planned behavior, the effect of different models of nutrition education and psychosocial factors on the use of recommended IYCF were examined among caregivers of children under five. Findings indicated that different sets of nutrition education and psychosocial factors affect different categories of caregivers with interactive nutrition education models having a greater effect. There is therefore the need to target caregivers with multiple nutrition education approaches.

In Mozambique, an OFSP adoption study among various consumers revealed that there has been an increase in the proportion of OFSP consumption among the wealthier population, an indication of OFSP as an acceptable source of vitamin A by all strata of the society.

## OUTCOME CASES AND POLICY INFLUENCED (PROPOSED)

Revise and complete the suggested list of outcome cases and policies to be documented

Title of Outcome/ Impact Case Report (OICR) (30 words)	Description (up to 80 words)	Geographic scope (Specify if regional, national, sub-national and provide list of regions/countries)
Adoption of infant and young child feeding (IYCF) practices in Kenya	Effect of nutrition education and psychosocial factors on child feeding practices: findings of a field experiment with biofortified foods and different women categories <a href="https://doi.org/10.1080/03670244.2018.1492382">https://doi.org/10.1080/03670244.2018.1492382</a>	Sub-national: a representative sample drwand from Homa Bay county, western Kenya.
Gender-sensitive value chain development in Rwanda	Bocher, T.; Low, J.W.; Sindi, K.; Rajendran, S. 2017. Gender-sensitive value chain intervention improved profit efficiency among orange-fleshed sweetpotato producers in Rwanda. <i>Open Agriculture</i> . (Poland). ISSN 2391-9531. 2(1):386-393. Permanent link to cite or share this item: <a href="https://hdl.handle.net/10568/91986">https://hdl.handle.net/10568/91986</a>	Sub-national: representative sample from provinces in Rwanda.

Name and description of policies modified in design or implementation, informed by CGIAR research (20-50 words, ideally around 30 words)	Type (policies/ strategies / laws/ regulations/ budgets/ investments/ curricula)	Whose policy is this? The primary organization(s) either designing/promulgating the policy, law, investment (e.g. national government) etc. and/or within which it is operating.	Geographic scope (Specify if regional, national, sub-national and provide list of regions/countries)
Work by CIP and partners in Tanzania on biofortification has ensured the integration of biofortification into government policies and creation of enabling environment for private sector investment	The policies include: Agriculture Sector Development Program II (ASDP-II of 2017), The National Multisectoral Nutrition Action Plan (NMNAP) July 2016-June 2021).	Government of Tanzania	National

### MAIN ACHIEVEMENTS WITH GENDER RELEVANCE

An evaluation of the Gender-sensitive Value Chain Intervention on the Profit Efficiency among Orange-fleshed Sweetpotato Producers in Rwanda was carried out during this report period among 846 sweetpotato growing households (Bocher, T.; Low, J.W.; Sindi, K.; Rajendran, S. 2017. Gender-sensitive value chain intervention improved profit efficiency among orange-fleshed sweetpotato producers in Rwanda. Open Agriculture. (Poland). ISSN 2391-9531. 2(1):386-393. Permanent link to this item: <https://hdl.handle.net/10568/91986>). The average level of profit efficiency in sweetpotato production systems is 55%; indicating that an estimated 45% of profit is lost due to the combined effect of technical, allocative and scale inefficiency. The profit efficiency of participant households was 64% compared to 20% of the control households. Further, the profit efficiency of the female beneficiary, female spillover, and male beneficiary households was found to be 55%, 70%, and 90% against 17% for male control households, respectively. Findings suggest that an orange-fleshed sweetpotato based value chain intervention can enhance the profit efficiency of the poor and disadvantaged households, if designed with special attention to women's needs. Thus, policies and programs aiming at improving the livelihood of smallholder should be designed targeting women and resource poor.

### MAIN ACHIEVEMENTS WITH YOUTH RELEVANCE

#### MAIN ACHIEVEMENTS WITH CAPACITY DEVELOPMENT RELEVANCE

Various trainings on agronomy and nutrition of OFSP was provided to national and NGO partners in Rwanda, Tanzania, Malawi, Kenya, Mozambique and Bangladesh. These capacity development trainings are critical for the adoption of social and behavior change related knowledge and practices that improve OFSP adoption, diet quality and improve the consumption of nutritious foods including vitamin A rich foods at both the commercial and household levels. Additional support was provided for the completion of 2 MSc students in Kenya around OFSP and child nutrition and feeding practices.



## MAIN ACHIEVEMENTS WITH CLIMATE CHANGE RELEVANCE

### MAIN GAPS AND CHALLENGES

Some deliverables were postponed to the 2019 reporting year mainly due to limited funds to complete these activities.

### MEASURES TAKEN AND ADJUSTMENTS PROPOSED

Scientists have provided explanations to delayed/postponed deliverables in MEL. Cluster scientists made various requests for funding to students/interns to undertake activities that will result in completion of these postponed deliverables. These fund requests have been budget for in the 2019 SW4.4 budget.

### PARTNESHIPS: ACHIEVEMENT AND CHALLENGES

Please list up to three important partnerships for 2018, using the following table.

<b>Brief description of partnership aims (30 words)</b>	<b>List of key partners in partnership (one or more partners). Do not use acronyms.</b>	<b>Main area of partnership (may choose multiple), Research/Delivery/Policy/Capacity Development/Other, please specify</b>
The aim is to assist the commercial bakery outlet to introduce OFSP puree in the baked products	Naivas Supermarket. Naivas staff received training from FANEL and Euro-Ingredients Limited on using OFSP puree as ingredients in bakery products. In January 2018, they started OFSP puree bakery products commercialization in Kenya	Capacity development, delivery
Aim is to introduce the aseptic shelf-stable preservation-free OFSP puree for post-harvest management	SinnovaTek, Raleigh, NC, USA. CIP-FANEL has worked with SinnovaTek on Technology Transfer to advance the development of shelf-stable preservative free OFSP puree for post-harvest management, OFSP puree supply chain management and ready to eat products in SSA.	Capacity development, research



Please include collaborations with one or more CRPs or Platforms – or in some cases with other Centers, if these are not already core partners for your CRP.

<b>Name(s) of collaborating CRP(s), Platform(s) or Center(s)</b>	<b>Brief description of the collaboration</b>	<b>Optional: Value added, in a few words</b> e.g. scientific or efficiency benefits
A4NH	CIP is a core partner of A4NH. CIP together with HarvestPlus are working at harmonizing their M&E system under A4NH biofortification flagship (Flagship 2)	
PIM	Collaborative engagement in Kenya and Malawi on OFSP puree work to enhance economic opportunities for women and youth under the RTB Scaling Fund.	

### **FUND RAISING**

Cluster scientists made various contributions to secure funding in 2018. The team successfully secured funding from the RT Scaling Fund to scale up OFSP puree technologies in 3 countries: Kenya, Uganda and Malawi.

## ANNEX 1 – OUTPUTS TO BE REPORTED

Related output(s)	Output leader	Completed in MEL (YES/NO)
SW4.4.2.2 - Techniques developed and assessed for utilization of SP as an ingredient in commercially processed and traded products in Rwanda, Kenya, Malawi, Ghana and Nigeria	Tawanda Muzhingi	Yes
SW4.4.1.3 - Nutrition quality and food safety laboratory protocols established and applied to vitamin A, iron, and other nutrient analyses of SP in laboratories in Nairobi (BecA), Lima, Mozambique, Rwanda and Indonesia	Tom zum Felde	Yes

*Annual milestones related to outputs are:*

*Techniques for inclusion of sweetpotato as an ingredient in commercially processed baked products (bread, cakes, other local wheat-based products) documented and training material for small scale processors of commercially viable OFSP based products produced*

*Protocols for nutrient and microbiological analysis applied to commercial sweetpotato products validated.*

## ANNEX 2 – LIST OF FORMATIVE AND EVALUATIVE STUDIES

Title	Deliverable code
	Please make sure that the study has been uploaded in MEL
Effect of nutrition education and psychosocial factors on child feeding practices findings of a field experiment with biofortified foods	15658
Good Manufacturing Practices and Microbial Contamination Sources in Orange Fleshed Sweet Potato Puree Processing Plant in Kenya	15659
Standard Operating Procedures: Food and Nutritional Evaluation Laboratory- Nutrition and Food Safety Analytical Methods.	15717
Adoption of orange-fleshed sweetpotato varieties by urban consumers in Maputo, Mozambique	15700