

**TECHNOLOGIES FOR AFRICAN AGRICULTURAL TRANSFORMATION (TAAT)
ORANGE FLESHED SWEETPOTATO (OFSP) COMPACT
Annual Report on OFSP Scaling up in Africa 2018**

Background



Sweetpotato is a co-staple in East Africa's densely populated, intensively cultivated mid-elevation farming areas. In many other countries it is an important secondary crop grown for an expanding fresh and processing market. Therefore, sweetpotato is the 3rd most important food crop in 7 Eastern and Central African countries – outranking cassava and maize. It ranks 4th in importance in 6 Southern African countries and is number 8 in 4 of countries of West Africa.

In general, sweetpotato grows under diverse agro-ecological zones and diverse rainfall distribution. It requires fewer inputs and less labor than other staple crops. It tolerates marginal growing conditions, such as dry spells and poor soil. As a rustic crop, it has frequently proven its value as a disaster recovery crop. It is also a forgiving crop that, once established, will reliably produce adequate yields under marginal conditions with no inputs and minimum or intermittent care. In some countries like Rwanda it is common to find the crop being planted at the beginning of the season mid and at the end of the season. This is a

tremendous advantage for poor households whose members depend on diverse livelihood strategies. They can get sweetpotato production over a long period of the year.

Sweetpotato provides more edible energy per hectare per day than wheat, rice, or cassava. Its ability to produce better yields in poor conditions with less labor makes sweetpotato particularly suitable as a crop for many households in Africa for food security as a source of calories, high levels of vitamins C and E, several B vitamins, iron, zinc, potassium and fiber. The orange-fleshed varieties are very high in pro-vitamin A or beta-carotene, which when eaten is converted into vitamin A. They also have anti-carcinogenic and cardiovascular disease-preventing properties.

There are real opportunities to boost sweetpotato productivity with new technologies and utilization through processing of sweetpotato. Investing in these technologies will directly benefit the poor through improving their incomes and nutritional status. Work in many sub-Saharan Africa has shown that providing farmers with new varieties and training them on better agronomic practices increases productivity from 3 tons per hectare to at least 10 tons per ha. That is more than three times. With the use of fertilizer, the yields will easily reach between 25 t/ha and 70 t/ha.

IDENTIFYING PROVEN TECHNOLOGIES

Several technologies for orange fleshed sweetpotato (OFSP) have been disseminated in 11 of the 12 core countries the compact is implementing the activities. There are more than 70 new sweetpotato varieties that are available to countries from the gene bank at Plant Quarantine Services (PQS). These were developed in different countries and are cleaned and are distributed to all countries as required. They were developed for early maturing (3 to 5 months), tolerant to sweetpotato virus disease (the main sweetpotato disease), rich in vitamins and minerals and especially Beta Carotene (precursor to vitamin A), have the right processing traits and market desirability.

In the last one-year TAAT OFSP compact has worked with partners on four areas namely; (1) improved pre-basic and quality seed production, as well as release of improved varieties, (2) Good agricultural practices (GAP), including improved varieties, (3) post-harvest handling and storage practices and (4) processing of OFSP into convenience food products.

For the seed system various strategies have been promoted depending on the needs of each country. These are storing basic seed in conservation tunnels at research stations and Decentralized Seed Multipliers (DVMs). TAAT OFSP COMPACT has collaborated with National Research Centers to ensure that each country has basic seed at the main national research station. The COMPACT has recruited DVMs who get their clean basic seed from the station and then conserve then using conservation tunnels. The DVMs then move the clean seed to the open fields for multiplication.

	
<p>Sweetpotato plantlets from tissue culture (Rwanda)</p>	<p>Clean TC sweetpotato basic seed in a greenhouse (Rwanda)</p>
	
<p>DVM sweetpotato multiplication plot</p>	<p>DVM harvesting sweetpotato vines for sale in Madagascar</p>

In 2018 the TAAT OFSP project worked with 514 DVMs (seed multipliers) and established 207 hectares of seed multiplication. That is a total of 103,500,000 cuttings planted. It is expected that they produced 828,000,000 cuttings that planted 25,090 hectares of OFSP. This was able to produce 250,910 tons of OFSP for home consumption and marketing.

In countries that have long dry seasons (mainly one growing season) TAAT is promoting the Triple-S (Storage in Sand and Sprouting) innovation. This package promotes root storage technologies in combination with multiplication practices using stored roots for production of early quality planting material in the right quantity and at the right time. The TAAT compact, in synergy with funding from the CGIAR research program on Roots, Tubers and Bananas has engaged with scaling partners to assess the scaling readiness of

the innovation package adapt the package. The using these individual innovations (such as the production of gender responsive communication materials) we are developing scaling strategies and workplans, adapting to and finding synergy with ongoing projects and initiatives that promote OFSP. We are then able to reach large number of beneficiaries with OFSP planting material and innovations at minimal investments.

A total of 177 sites have been established with Triple-S vine conservation and production methodology. In the reporting period 44,975 beneficiaries utilized the Triple-S methodology. For a detailed description of the Triple-S technology see a flyer, [here](#) and videos explaining the innovation [here](#).

	
Sweetpotato roots stored for seed production in Ghana	Sprouted sweetpotato ready for the field 1.5 months before the rain's onset in Uganda

Seed System and Good Agricultural Practices (GAP)

Demonstration plots were established from June till December 2018 in in Different countries. Demo plots are very important to demonstrate the benefits of improved varieties of sweetpotato. The standard practice is to demonstrate improved varieties and a local variety in combination with local and recommended (GAP) practices. All trials are then exhibited and evaluated with groups of farmers. They are also used for variety dissemination through field visits. A report of the trials in Upper East and Northern region of Ghana can be found [here](#). Overall, the OFSP COMPACT had 349 Demo plots in 2018.

	
TAAT beneficiaries participating in demo plot harvesting	Farmers participating in variety tasting evaluation in Rwanda

Scaling up of OFSP improved technologies

TAAT goal is to ensure that there is adoption of the new improved varieties. The first constraint is to get the seed system established because there are few private sector firms that have invested in sweetpotato seed system. The next step is to get the seed to farmers of different scales. The project has a nutrition outcome goal. Hence, some of the beneficiaries are small scale farmers. These are given starter planting material at a subsidized cost or for free depending on their circumstances and the project resources. Each of the countries is at different level of the seed system development and farmers recruitment. However, leveraging other OFSP activities in the targeted countries TAAT OFSP COMPACT has reached 296,225 beneficiaries with 86,240,992 OFSP cuttings. Hence, the area covered by the new sweetpotato technologies is 511,796 hectares with an estimated 5,117,960 tons of sweetpotato harvested or about to be harvested.



Good agronomic practices training

To realize the full benefit of the new technologies, beneficiaries have to be trained on Good Agronomic Practices (GAP). This is very important because different locations have their own cultural way of planting sweetpotato. However, intensive farming requires that the farmers prepare the land with ridges or mounds to ensure that the soil is loose enough for proper roots formation. Cultural practices do not require the farmers also to use fertilizer. Some use organic manure although it is not always available or well decomposed to release nutrients.

In total, 143 training of trainer's sessions were held from April to December 2018 (1 or 2 days) on nursery establishment and vine multiplication, good agricultural practices, identification and pegging of healthy plants, harvesting and storing sweetpotato roots in sand and Triple-S. A total of 1,730 trainers were trained on regular ToT and 2,375 DVMs were trained.



In addition, TAAT OFSP COMPACT organized some training of trainer session in Dakar, Senegal on 19 and 20 December 2018, training 24 male and 3 female lead farmers and agricultural extension agents. Several partners were also identified in Senegal (Peace corps, USAID-Kawolor project and the center for horticulture of the ministry of Agriculture and Rural Equipment) to scale the Triple-S innovation package to over 20,000 farmers in Senegal. Stepdown trainings have taken place.

Varieties released

Additionally, TAAT Supported release and promotion of improved OFSP varieties, by providing financial and technical support to the variety release committee. In total 18 varieties were released in three countries (Ghana, Nigeria and Malawi).

Processing, value addition and marketing activities

In total 111 processors have been recruited in the TAAT operating countries. Out of those 86 have been trained on various processing methods. And currently we have 28 processors actively processing OFSP products. At least 590 farmers have been linked into the value chain market.



So far, we have identified 28 new processors who are ready to start working with the TAAT project. Recently, a new product was developed with two of the identified processors in

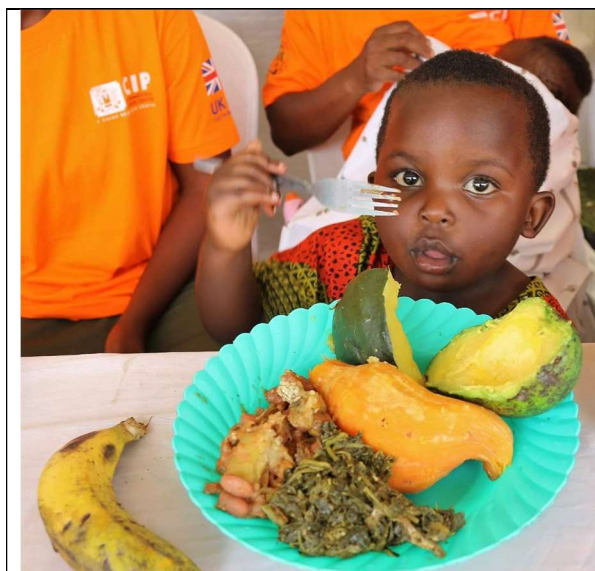
Tamale (Ghana), that uses OFSP as a sweet crusting for healthy granola. The processor has developed the new product in collaboration with CIP and another processor, who was previously trained by CIP. The product is available in supermarkets in Accra and Tamale.

In Uganda, TAAT OFSP compact is working with Eastern Agricultural Development Company Ltd, Namugongo Millers, and Maama Care Foundation, a medium sized processor producing OFSP flour products already.

The compact also identified production of silage from sweetpotato vines for animal feeds. The Compact will partner with youth groups such as Bavubuka Tweekembe youth group to scale out and commercialize the sweetpotato vines silage technology. In total 21 entrepreneurs have been identified in various countries to start silage processing.

Nutrition activities

The TAAT OFSP project has an important nutrition component. The project trains health sector practitioners and the public in general on the importance of vitamin A and eating a healthy diet with the right food diversity. In the reporting period the project held 2,133 nutrition sessions. In these events a total of 74,493 households and Community Health Workers were trained.



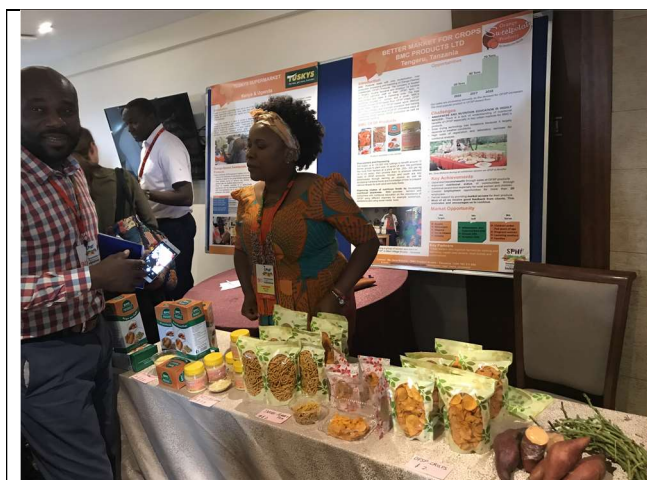
Cooking demonstration with food diversity emphasis



Village level cooking demonstration to increase OFSP consumption and food diversity

Demand creating of OFSP technologies

TAAT OFSP compact has actively participated in media as well as exhibitions that promote the project work. In the reporting period a total of 20 media events were held in different countries. A total of 23 exhibitions were also held in the countries. In Rwanda the OFSP value chain work was awarded the first position for best value chain work on sweetpotato processing.



OFSP based product exhibition



OFSP products exhibition

Ghana

CIP capitalized on the organization of the end-of-project dissemination workshop of the USAID-OFDA project on storage in sand and sprouting on 20 September to invite stakeholders and raise awareness. MOFA and stakeholders from the Northern, Upper East and Upper West region of Ghana learnt about the Triple-S PLUS innovation package (GAPs, Triple-S, OFSP and vine multiplication). At least 40 stakeholders attended the event and were given training materials in electronic and printed format.

The TAAT OFSP COMPACT supported participation of CIP and partners (NGO's, NARI, processors and farmers) to several awareness raising events. To name a few, CIP participated in a pre-season planning event (21 March 2018), the pre-harvest conference and exhibition (3-5 October) and the Ghana national farmers' day exhibition (Tamale, 30 November till 7 December). During these events, CIP and partners displayed promotional materials for OFSP, displayed and sold OFSP processed products, distributed vines of improved OFSP varieties and showed videos explaining the Triple-S innovation package. In total, we interacted with over 3,205 women and 2,845 men and over 40 different organizations involved with agriculture development. A report of the pre-harvest event can be found [here](#), and the report of the farmers' day exhibition can be found [here](#).

Rwanda

Nutrition awareness activities were conducted through a model of training Community Health workers, who in turn train beneficiaries. 117 Community health workers received nutrition training as well as distribution of nutrition messaging materials. In addition, 20 OFSP cooking demonstration were done in 10 districts of intervention.

To create the demand, the project has collaborated with hotels, restaurants, supermarkets to incorporate OFSP into their recipes. Another strategy was to use the media, roadside market, roadside sign posts and organizing different events where the role of OFSP was

highlighted. The project in collaboration with different partners, new OFSP products were tested and presented to consumers, to raise awareness.

TAAT OFSP project also participated in the AGRF 2018 exhibition and meeting in Kigali Rwanda. There was a booth that exhibited the OFSP value chain activities.



Uganda

TAAT OFSP COMPACT organized awareness meetings with bakers in Jinja, Kampala, Wakiso and Mbarara districts to introduce and interest them in the use of OFSP in the baking industry. For sweetpotato silage, the OFSP COMPACT participated in agricultural shows organized by public and private sector to showcase sweetpotato silage technologies

Mozambique

Linking agriculture to nutrition, and agriculture to marketing has been the key strategy to demand creation. While food security has been met, nutrition issues are of upfront in the promotion of this biofortified crop. In 2018, more than 200 nutrition and food processing sessions, with more than 20,000 direct beneficiaries were conducted as part of the overall demand creation

Madagascar

OFSP Compact participated in FIA (Foire Internationale de l' Agriculture – International Agricultural Fair) where OFSP products were showcased at the FIFAANOR booth. Over 30 SMEs were able to taste the products and most of them expressed great interest in making the products. Most of the exhibitors in the fair are SMEs. Training of DVMs to enhance dissemination of OFSP vines at community level was also done

Kenya

An awareness event was conducted in collaboration with two partners - Bakery World and Elim Farm Kenya at Christ is the Answer Ministries (CITAM) – Buru Buru. 300 consumers had a taste of OFSP bakery products (Muffins, Samosa and Bread) and 150 People purchased fresh OFSP roots for the first time. Over 500 reached with the OFSP nutritional messages in form of flyers ad brochures. Also 21 bakers in Nairobi were trained on puree

technology for bakery products in Dec 2018. A training on OFSP recipes was carried out during the Sweetpotato for Profit and Health Initiative annual meeting at the Concord hotel in Nairobi with about 25 participants. The communication team at CIP have carried out OFSP messaging on CIP's social media platforms contributing to awareness and demand creation.

FOSTERING PARTNERSHIPS FOR DISSEMINATION

TAAT OFSP COMPACT will achieve its goals through partnerships in different countries with the government agencies, Development partners, and Private sector. Therefore, in each country we have a range of partners that we have agreed to work with and will sign MOUs within the next few months.



Kenya

Building the seed systems through establishment of DVMs, as model to disseminate OFSP varieties to root producers. Use of net tunnels and training on quality planting material production and GAP for farmers. Strengthen capacity for Kenya agricultural and livestock research organization (KALRO) in Embu, Meru, Machakos and other stations to multiply basic seed for DVMs.

On processing and value additions 4 processors and 4 bakeries have been identified to integrate puree technology into their products. In western Kenya, up to 400 farmers are linked to Organi ltd, a puree processor, to directly supply fresh roots to the factory. The two main off takers – Tuskys and Naivas supermarket utilizes their own distribution network to move puree from the factory to their bakeries for making products that are in turn made available in their stores in Nairobi and surrounding peri-urban areas.

The compact is engaged with the county governments of Kirinyaga, Meru, Kiambu, Machakos and Bomet through meetings and field visits. These county governments are seeking partnerships with TAAT OFSP compact to transform the sweetpotato value chains in their respective counties. We will continue to partner with KARLO to enhance the National OFSP seed system, NGOs, such as Christian Impact Missions, Rural Outreach Program (ROP) Africa, Private sector companies such as Euro Ingredients ltd, Maua cooperative, bakeries, restaurants and grocery shops, Ken Quick, ENABLE youth and other compacts to deliver OFSP value chain activities.

Tanzania

In Tanzania we are working with the Tanzania Agricultural Research Institute (TARI) Kibaha.

Ghana

TAAT OFSP compact has partnered with USAID-RING, MEDA-GROW, MOA, Crop research Institute, and other NGOs to deliver transformation in the OFSP value chain.

Rwanda

In the implement OFSP compact activities and disseminating proven technologies, partnerships have been established with local implementing partners, government institution such MINAGRI, RAB and local governments. The COMPACT is also collaborating with national NGOs such as YWCA, UNICOOPAGI, DERN, Imbaraga. We are also working with private companies interested to process OFSP such as Urwibutso Enterprise, Ester's Aid, Celino Ltd, Mama Dunia, Zima enterprise, Carl group, Facoc, Mandazi ltd, and Duhange Ltd.

Uganda

OFSP compact is working closely with HarvestPlus Uganda and NARO, bakeries and other private sector players on dissemination of OFSP puree and other products. HarvestPlus continues to disseminate OFSP vines for root production and have a network of small scale OFSP flour users who make doughnuts, Chapatis, Mandazi and other products across the country. The COMPACT is actively involved in these networks. We are also working with the Pig and dairy platforms as well as NARO and youth groups.

Mozambique

OFSP COMPACT has been collaborating with IIAM (NARs) for basic seed multiplication. The DVMs and NGOs are engaged in the dissemination of the vines. For sustainability, the Government, via the Agriculture Extension Services is involved in the process of multiplication as DVM, and facilitators during the dissemination process. We are strengthening the linkages between FIFAMANOR (national agricultural research and extension) for farmers trainings and private sector input suppliers. Ministry of agriculture, NGOs, Civil society, Associations, private business owners.

Burkina Faso

We are collaborating with INERA, The West Africa Agricultural Transformation Programme (WATP), The West Africa Virus Epidemiology (WAVE) a Bill and Melinda Gate base Project working in Burkina Faso on Cassava and sweetpotato virus diseases.