

Stories of CHANGE



A Little Tuber with a Big Impact

By forging a strong partnership between researchers and farmers, HKI introduced Vitamin A-rich orange-fleshed sweet potato in northern Côte d'Ivoire, with widespread and sustained adoption

Project participant with a large OFSP tuber

Visiting the red-soiled village of Tiangakaha, in northern Côte d'Ivoire, one is happily surprised by the widespread presence of a crop that, just four years ago, didn't exist here: orange-fleshed sweet potato (OFSP). The lushly verdant leaves encircling houses make it clear the plants are well maintained and not here by accident. OFSP was only introduced in this part of Côte d'Ivoire in 2013, through the CHANGE project led by Helen Keller International (HKI) with support from Global Affairs Canada. Production has grown remarkably since then, and the plants remain common, both in project villages and neighboring ones, long after the end of the project. Panda Soro, CHANGE participant in Tiangakaha, had an easy answer for why the plants can be found all over her village: "OFSP is loved by everyone here! Ever since we started using it to feed our young children, they are doing better: they aren't so thin, are sick less often –

and they love eating it! Also, the taste is really good for us adults, too – we eat a lot of it."

OFSP has nutritional advantages over its white and yellow relatives, long grown in Côte d'Ivoire. Unlike them, it is extremely rich in beta-carotene, which the body converts into vitamin A. Just 100 grams will suffice to satisfy the daily vitamin A requirements of a child under 5, and about 250 grams is enough for an average adult. OFSP also contains numerous other vitamins and is a good source of energy and dietary fiber, with a low glycemic index that makes it a useful part of a diet appropriate for lessening the risk of non-communicable diseases, like diabetes, which are growing in prevalence in Côte d'Ivoire. The leaves are also nutrient rich, containing ample amino acids, vitamins, and antioxidants. OFSP could thus have a major positive effect in Côte d'Ivoire, where

malnutrition is widespread, particularly among young children. In particular, a large number of young children are deficient in Vitamin A, which is needed for immune system functions as well as physical and cognitive development. CHANGE thus focused on encouraging production and consumption of OFSP and other foods rich in essential vitamins and minerals to ensure the sustainable availability of a healthy diet.

This was not a simple task, however. While white- and yellow-fleshed sweet potato had long been cultivated in Côte d'Ivoire, OFSP was new to the area. Importing varieties from another country was unlikely to be met with success: to ensure ample and sustainable production, farmers must cultivate varieties suited to the local agro-ecological context, including soil and climate. HKI thus partnered with the National Agronomic Research Center (CNRA), to identify the OFSP varieties best suited to different zones in Côte d'Ivoire.

Sixteen varieties from the collection of the International Potato Center in Ghana were chosen by CNRA for conservation of genetic resources, characterization, performance tests, and field tests. Six high-performing varieties were then introduced in CHANGE villages in four different regions, grown alongside a local white variety. As the crops developed, local farmers helped test the varieties' performance under real-world conditions. In the end, three were retained, based on farmers' assessments of yield, disease resistance, taste, texture, and ease of cooking. Through the rapid multiplication of vines in greenhouses, with an impressive capacity of 75,000 vines every two months, CHANGE provided women's groups in 42 villages with over 250,000 vines. These women also received training on the role of OFSP in nutrition and best practices for cultivation. National Agency for Support of Rural Development (ANADER) and HKI also supervised farmers who were newly



adopting the crop, to provide assistance if needed. Through close collaboration between researchers, extension agents from the ANADER, local NGOs, and farmers, CHANGE was thus able to select and distribute a set of well-adapted and highly appreciated varieties in a short time.

Once released, these varieties were well received. OFSP is easy to grow in the Ivoirian climate with low production costs, sprouting even under marginal conditions and maturing in just 3 to 4 months. Average yields of OFSP reached 20 tons per hectare in farmers' fields, about twice those of their locally grown white cousins—and tubers grew as big as 5 kg, five times larger than the average for local white varieties. This increased productivity was a major motivating factor for participants: in addition to diversifying their family's meals, they had enough to sell and earn additional income. Women trained

through CHANGE thus started selling both the raw tubers and transformed products, like cakes and breads made with OFSP flour. Project surveys showed average agricultural income per person to be about \$155 per season after the introduction of OFSP—double pre-project levels. This increase in revenue in women's hands likely translated into better nutrition and wellbeing for the entire household. While increased revenues were very welcome, the main goal of introducing OFSP was improved nutrition—which would not happen if people did not eat the tubers! CHANGE thus worked with local NGOs to create, test, and promote several dishes based on OFSP leaves and tubers, such as attiéké, a wildly popular local dish typically made from cassava; these were aimed at improving the nutrition of the whole family, but particularly that of children under age two. This strategy was just one part of a comprehensive approach to behavior change,



Watering OFSP plants in a demonstration garden



"With the production of our communal garden, particularly of OFSP, the group was able to buy balafons [local xylophone-like musical instruments] and chairs, worth more than 700,000 FCFA (\$1,250), to use in our ceremonies."

-Yeo Mamadou, Women's Group Secretary, Napalakaha village

which included training parents on best practices for feeding and care of young children, including providing dishes based on OFSP. This strategy bore fruit: children benefiting from the project were soon known to be healthier and faster growing than their non-CHANGE peers, grinning happily as they played in the OFSP fields around the villages. In addition, dietary diversity among women doubled over the life of the project, from 2.5 to 5.3 out of 10, and almost four times as many households were food secure.

OFSP is propagated not with seeds, as with many crops, but with vines cut from living plants. This can make it easy for growers to expand production and share with others, but it also makes it difficult to preserve the crop through the dry season, when vines not regularly watered will wither and die. Yet CHANGE participants managed to overcome these challenges. In

Guéfiakaha village, for example, the local women's group did not let the aridity of their communal garden prevent them from growing the crop. As the group secretary explained, "We women have seen the benefits, both in terms of money and nutrition, of OFSP, so we decided to grow it in our individual fields [along with typical staples] even in the dry season, so that we wouldn't lose the planting materials when the community garden became too dry, with the lack of rain and dry wells. As soon as the rain comes, we'll plant these vines in our community garden, everyone has already decided." CHANGE participants have also taken advantage of the crop's extensive production to share vines with neighboring villages, where OFSP is now taking root.

Enabling women, major household food producers as well as decision-makers on children's nutrition and household diets, to sustainably

grow OFSP thus helped bolster the fight against malnutrition and vitamin A deficiency in northern Côte d'Ivoire. When asked if CHANGE had been useful to her, Koutanhan Soro of Zonwakaha village did not hesitate: "The CHANGE project was really useful for us women! Our kids are nice and chubby, they no longer fall ill all the time; when we look at them, we're content and always want to grab them. All of that, it's due to the OFSP they are eating. We know how to make many dishes with it now: juice, porridge, grilled... even putting the leaves in our tchonron [traditional leaf-based sauce]." Her words confirm the immediate impression of any village visitor: the introduction of OFSP into Côte d'Ivoire has been a success, with strong uptake by the local population, positive effects on household incomes and nutrition, and encouraging spillovers beyond the original project participants.



OFSP vines growing in a field

What is Enhanced Homestead Food Production?

- A communal garden or 'village model farm' is established in each village, including infrastructure such as a well.
- On this garden, women learn improved gardening and animal husbandry practices.
- Interactive nutrition education improves their understanding of the causes of malnutrition, including low dietary diversity and poor sanitation, and potential solutions.
- Women are encouraged to establish their own gardens and apply improved infant and young child feeding and hygiene practices.
- Women's empowerment activities support more equitable intra-household decision-making and workload and resource sharing.
- With more varied agricultural products, potentially greater earnings from selling surplus production, and new knowledge, participants are better able to feed their children and families diverse diets rich in micronutrients, combatting malnutrition and improving child health and growth.

FIGHTING MALNUTRITION AT ITS ROOTS.

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