

Orange-fleshed sweet potato brings health and livelihood to Pelungu, Ghana



Above: Figure 1: Increasing Vitamin A intake of mother and child.



Figure 2: Harvesting the orange-fleshed sweet potato



Figure 3: Map showing the project site (Pelungu).

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Introduction

Pelungu is a dryland farming area in the Upper East Region of northern Ghana (see Figure 3), the second poorest region in the country with a mean annual household income of 616 cedis (GH¢). Most of the people in Pelungu rely on the sale of crops like millet as their primary source of income, but some also sell firewood, cooked food, and animals. According to a needs assessment conducted by TRAX Program Support (called TRAX hereinafter) in July 2012, poor soil, water shortages and lack of alternative incomes are the biggest problems faced by the community.

The Project

To address the situation, a value chain development pilot project was initiated by TRAX, based in Northern Ghana, with financial support from Self Help Africa, United Kingdom. The project focused on promoting the cultivation of the orange-fleshed sweet potato by smallholder farmers in Pelungu. The project site is shown in Figure 1. The selection of the orange-fleshed sweet potato was based on qualities it possessed which could address several challenges faced by the local community.

Firstly, the project area suffers from low soil fertility. The orange-fleshed sweet potato is a crop that can grow well even on marginal soils.

Secondly, farmers have to cope with erratic rainfall and shorter rainy seasons. Traditional crops such as millet have not adapted well to these climatic changes, but the orange-fleshed sweet potato is drought-resistant and can therefore produce good yields despite poor rainfall.

Thirdly, there is widespread Vitamin A deficiency in Ghana, which is exacerbated by food insecurity mainly due to failed harvests. According to the FAO and WHO, three out of four children under the age of five in Ghana suffer from Vitamin A deficiency with 35% having severe deficiency. Vitamin A deficiency is the leading cause of blindness and disease in children of this age. In pregnant women, Vitamin A deficiency can cause premature death. The orange-fleshed sweet potato is a good source of Vitamin A.

Lastly, the local people of Pelungu, especially the women, have to constantly look for ways to earn income to offset the impact of poor crop yields. The orange-fleshed sweet potato can be processed into many secondary products such as bread, juice and pastry; this provides opportunities to earn income from the sale of such processed goods.

Fifty smallholder farmers (32 men and 18 women) cultivating less than two hectares of land each participated in the project. With an average household size of seven, this means the project outreached to around 350 people. The project duration was from January to November 2013.

Step-by-step process

The project consisted of six main steps, with a strong focus on capacity-building because TRAX believed that the beneficiaries would reap most benefit if they fully understood the advantages of the orange-fleshed sweet potato and took ownership of the process. The implementation steps were as follows:

- i. The project started with a one-day sensitization workshop for farmers, opinion-leaders and members of the public in the area. During this workshop, the economic and nutritional benefits of the orange-fleshed sweet potato were discussed.
- ii. An extension visit to the vine multipliers of the orange-fleshed sweet potato was organized for the farmers. This was done in order to make sure that the farmers knew where to obtain new vines for future growing seasons.
- iii. The farmers were asked to select from among them 50 farmers with the capacity to implement the project.

¹ Ghana Statistical Service (2008). Ghana Living Standards Survey.

² Food and Agriculture Organization (FAO) (2009). Ghana nutrition profile—Nutrition and Consumer Protection Division. Retrieved from <ftp://ftp.fao.org/ag/agn/nutrition/ncp/gha.pdf>

³ World Health Organization (2009). Global prevalence of vitamin A deficiency in populations at risk 1995 – 2005: WHO global database on vitamin A deficiency. Geneva, Switzerland: WHO Press.



Figure 4: In the sweet potato field.

“The orange-fleshed sweet potato’s production was double the old sweet potato variety.”

- a farmer on the project



Figure 5: A happy farmer and her freshly harvested sweet potato.



Figure 6: Preparation of the orange-fleshed sweet potato dishes.

- iv. Before the next planting season, the selected farmers participated in another training course on the technical aspects of orange-fleshed sweet potato farming. They acquired new skills and knowledge on the agronomic practices that had to be adopted.
- v. The 50 farmers were then given vouchers to obtain 300 cuttings each from vine multipliers for cultivation.
- vi. A project review workshop was organized where the beneficiaries, vine multipliers, farmer groups and other stakeholders (research institutes, etc.) were brought together to discuss the strengths and weaknesses of the project and to develop strategies on the way forward.

All throughout the project period, the TRAX field worker in charge of the Pelungu project zone made weekly visits to the farmers to provide the necessary technical assistance. He facilitated additional trainings on various Low External Input Sustainable Agriculture (LEISA) techniques. The farmers used to invert the soil completely when they ploughed, thereby exposing a large area to erosion. In order to stabilize the top soil, the TRAX field worker trained the farmers in minimal and zero tillage. Another common practice among the Pelungu farmers was the burning of large portions of cultivated and uncultivated lands, in order to get rid of the crop residues and to create new fields. TRAX’s field worker advised the farmers to adopt non-burning, as residues decompose, add nutrients and retain vital microorganisms in the soil. Lastly, he taught the farmers how to use compost and farmyard manure as an alternative to the costly and harmful agrochemicals that some of them use. The farmers were taught how to construct compost pits and improved animal pens, from which droppings could be collected. They were then spread on the fields so as to add nutrients to the soil.

In addition, the farmer groups, especially the women, were trained in financial resource mobilization using the Village Savings and Loan Association (VSLA) model to establish a culture of saving and to develop competence in setting up, expanding and diversifying commercial enterprises.

Outcomes

The most important feature of the orange-fleshed sweet potato for the farmers is its drought-resistance, which renders it a reliable and steady source of food. Very late onset of rains and an inconsistent rainfall pattern throughout the rainy season was experienced in Pelungu in 2012. The early millet crop, which had hitherto served to shorten the “hunger period” (up to 6 months before harvest time, during which many families have to cut down the number of meals they eat per day) failed due to these climatic changes, but orange-fleshed sweet potato cultivation flourished. The duration of the hunger period was thereby shortened significantly.

The project families also reported that the yield of the orange-fleshed sweet potato was double that of the ordinary sweet potato. They had excess produce to sell after consumption, so their incomes increased.

Upscaling

What is necessary for successful upscaling of this project are enough farmers willing to venture into orange-fleshed sweet potato cultivation. From the feedback obtained at the final workshop, a great willingness among community members in Pelungu who had not been part of the pilot was observed.

One challenge is increasing public acceptance of the orange-fleshed sweet potato. Because it is not a traditional food in Northern Ghana, its merits for farmers and consumers alike need to be publicized in ways that will win farmer and public acceptance. This needs to be done in a consistent manner at all levels including through community-to-community exchanges. Further training that could be beneficial would be cooking classes for women, in which they are taught ways on how to incorporate the orange-fleshed sweet potato into their traditional diet as well as how to process the orange-fleshed sweet potato into products for the market such as bread, juice and pastry.

Another potential challenge is ensuring the steady supply of vines. Since the orange-fleshed sweet potato is relatively new to the area, the vines cannot be as easily obtained as those of other local crops. They have to be acquired from the CIP Potato Centre in Tamale or Kumasi, a few hours’ drive away. With growing demand, however, TRAX is hopeful that vine supply will increase.

Resources

The project was jointly designed by the TRAX Ghana office and farmers’ groups at Pelungu. It was overseen by the TRAX Sustainable Livelihoods Project Coordinator and on-the-ground implementation was the responsibility of the field worker in charge of the Pelungu project zone. This pilot project with 50 farmers did not demand the full-time commitment of the staff.

The project activities as described cost GH¢ 2,750 while the cost per acre was GH¢ 18 and the cost per person was GH¢ 12 (covering training, visit to the vine multipliers, refreshments served during activities).

Food Sovereignty

The humble orange-fleshed sweet potato has improved the food sovereignty of the project communities in Pelungu mainly through satisfying their right to adequate and culturally appropriate food, right to health, and right to livelihood. In particular, the issue of Vitamin A deficiency in women and children has received considerable attention from the media and the health authorities in Ghana. However, food supplements are often seen as the answer. With this project, TRAX has produced evidence that a food-based approach towards Vitamin A deficiency is a more sustainable and cost-effective solution. The relevant government bodies should mount a campaign to increase the acceptability of the orange-fleshed sweet potato in Ghanaian dishes by educating the public about its nutritional advantages.