

## Diversity and Resilience in Tradition

HKI's CHANGE project supported nutritional needs, household resilience, and conservation of underused crops by encouraging the cultivation of traditional African vegetables



CHANGE participants water TAVs and other vegetables at the village garden

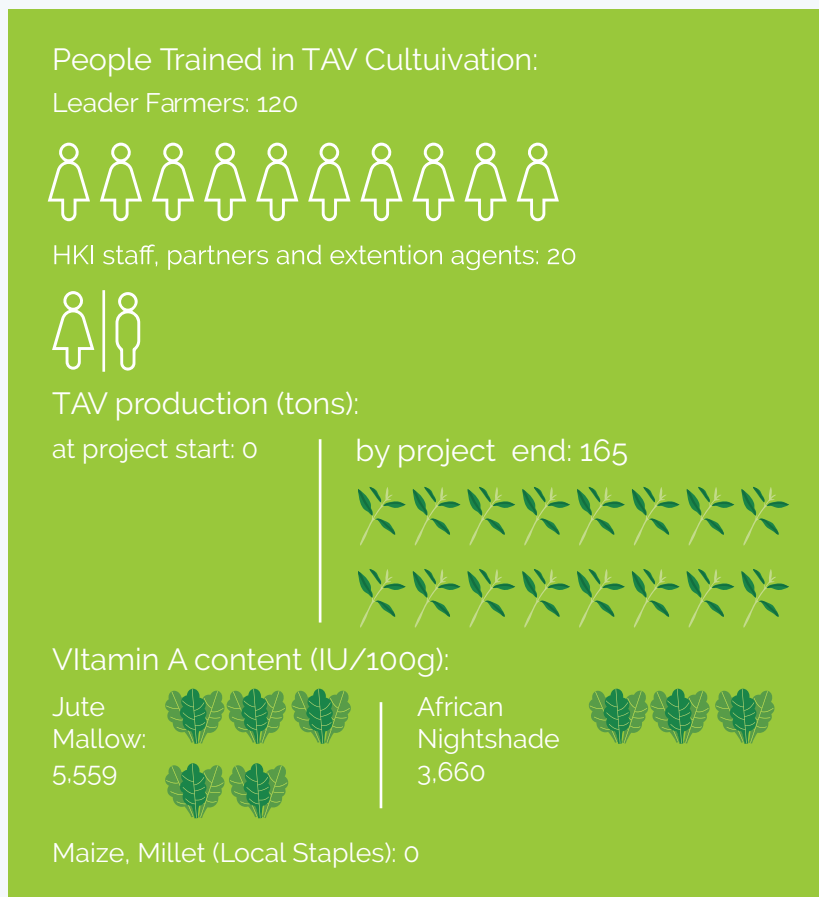
When Fatie Sore first sowed the seeds of the alluringly named vegetable African nightshade in the reddish soils of Abaza village in eastern Burkina Faso, it was with curiosity – and a bit of trepidation. She had never grown this vegetable before – indeed, never even heard of it until Helen Keller International (HKI) provided her with its seeds, plus those of African aubergine and jute mallow, as part of the 2013 – 2016 CHANGE project, funded by Global Affairs Canada. Though CHANGE also connected participants with sources of seeds of conventional vegetables and legumes, like tomato, peppers, spinach, and cowpea, a partnership with the World Vegetable Center (AVRDC) allowed participants like Fatie to experiment with high-performing varieties of traditional African vegetables (TAVs) like African nightshade.

The descriptor “traditional” can be somewhat confusing: while these vegetables are commonly used elsewhere in Africa, or were in the past, they are not necessarily known throughout the continent's diverse cultures and agronomic zones. Indeed, agriculture worldwide is currently reliant on a small number of crop varieties, with three cereals (wheat, maize, and rice) providing over half of plant-derived calories, according to the Food and Agriculture Organization. In places like Abaza, crop diversity can be quite low. However, farmers in Africa have historically made use of a wide range of plants, including indigenous or “traditional” vegetables. This crop diversity can be an invaluable resource for farmers in marginal environments, helping them meet multiple objectives, such as food security and market sale, amid unpredictable climate conditions. It can also

help farmers manage risks and be more resilient to stresses, like pest infestations. Additionally, higher crop diversity can lead to more diverse and nutritious diets: dark leaves like African nightshade are rich in vitamins and minerals that cannot be found in starchy staple crops like millet and maize but are essential for healthy growth. Besides nutritional benefits, these crops help add flavor to a sometimes monotonous diet. The continued cultivation of diverse crops can also help ensure their conservation and continued adaptation to new environments, sustaining a global reserve of crop diversity and increasing the resilience of global agriculture.

Fatie wasn't thinking of all this, however, as she watched the young plants sprout: she was wondering what the African nightshade would look like as a mature crop. She was excited to discover its taste and wondered how to prepare this unknown vegetable for her family. She was taking a risk: she could suffer losses by planting an unknown crop while her husband's two other wives cultivated well-known local crops, like roselle, bean, and spinach, which were already known and appreciated in local dishes.

Such barriers to adoption of new crops are common: in marginal environments like Abaza, there is little scope for replanting if a crop fails, so many farmers are averse to such risks. Cultivation in small-scale home gardens helps lessen this threat, as do demonstrations on communal plots, like the CHANGE "model farms." These fenced plots of land, designated for women's collective use by the community, constitute teaching platforms at which novel techniques can be tested while reducing and sharing risk of failure. In addition to experimenting with TAVs, CHANGE participants learned to grow vitamin-A-rich orange-fleshed sweet potato and to integrate fruit trees into gardens. HKI helped establish these plots and delivered regular trainings using them,



working in close collaboration with the government's agricultural extension service. This partnership helped to build capacity and sustainability by sharing the newfound knowledge more widely.

The CHANGE project also reached out to women who were leaders and agricultural innovators in their communities, supporting them to become "leader farmers" who could train others in new techniques. Through this approach, Fatie (and 119 others) received additional training and was encouraged to experiment with novel crops like TAVs. She was thus confident when, four weeks after planting, her plot was growing greener every day with burgeoning African nightshade plants. Visiting

HKI technicians showed her how to prune the plants to generate more leaves, and they developed magnificently. When her neighbors came to see, she teased them about the delicious leaves they would soon be enjoying.

At the first harvest, Fatie took a few leaves of the nightshade to share with others in her neighborhood. But none of her friends wanted to try cooking them: not knowing the taste of nightshade or how to prepare it, they feared failure in the kitchen and an uneaten family meal! Such a response is also not uncommon—indeed, any household chef can relate to the apprehension of bringing a new dish to the family table, perhaps only to be rejected by unadventurous family members' palates.



Farmers gather at a demonstration plot to learn to grow TAVs



Now when we harvest our plots of African nightshade or jute mallow, women from neighboring villages come not only to buy the leaves but also to learn how to cook the delicious nightshade sauce." - Fatie Sore, farmer in Abaza, Burkina Faso.

Fatie was disappointed as she walked home with the shiny dark nightshade leaves in her hands, but her head was soon turned by an eager shout: "But that's loudo! Where did you get that!?" She turned to see a young woman who had recently returned from visiting relatives in neighboring Cote d'Ivoire and was pointing excitedly at the leaves. Though African nightshade might be unknown in Abaza, 700 km southwest it was a popular and well-loved addition to the cooking pot, and the neighbor was sure that "ludo" would also be appreciated in Abaza once people had tasted it.

Indeed, a week later the African nightshade at the model farm was also ready to be picked, and CHANGE facilitators organized a cooking demonstration to show how the leaves could be prepared and allow people to taste them in various dishes. As everyone munched on the resulting tasty sauce, the facilitator discussed the importance of consuming dark leafy greens like nightshade, noting how vitamin-A-rich foods

can lessen the risk of childhood and maternal malnutrition. She connected this to other ways to prevent malnutrition, such as sleeping under insecticide-treated bed nets and following good hygiene practices. HKI's nutrition-sensitive agriculture work centers on this close integration between agriculture and nutrition, and such public cooking demonstrations are often used to defray the hesitation to plant a new crop, such as showing how to transform soybean into enriched baby porridge or orange-fleshed sweet potatoes into locally popular couscous.

Fatie's young neighbor was right: tasting was believing. Fatie's once-skeptical friends were now eager to buy her nightshade leaves and begin cultivating their own to cook at home and sell to neighboring villages. This is another potential benefit of the promotion of lesser-known varieties: they can allow early adopters to occupy market niches and stand out when everyone tends to sell the same crops. Because TAVs are open-pollinated varieties, their seed can

generally be saved by farmers themselves; farmers are thus not dependent on buying outside seed, as is often the case for commercial crops like tomato, sweet peppers, and cotton.

Through CHANGE, 12 TAV varieties were introduced through seed producers, and trainings reached 2,500 people. Over the three years, over 165 tons of TAVs were produced. To encourage sustainability, farmers were also trained in seed production, producing a total of 15.6 kg of TAV seeds. It remains to be seen whether African nightshade will become an indispensable ingredient in the kitchens and markets of eastern Burkina Faso. However, if the experimentation of farmers such as Fatie, the enthusiastic reception of the CHANGE project trainings, and the glowing reception of the dishes prepared at cooking demonstrations are any indication, the crop's future is much sunnier than its name would suggest.



African nightshade berries

## 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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