

Title of Project: S.H.I.N.E. On The Gambia: *Solar Harnessing for Income, Nutrition, and Empowerment*
Project Location: Kololi, The Gambia
Sponsoring College: Tufts University
Student: Whitney Ceesay (United States), Tufts University

In The Gambia, fruit and vegetable harvests are abundant in sustenance farming villages, but often result in excess food waste due to lack of food preservation. Affected by annual food shortages, some of the farmers that I met with over the past year (all women), expressed interest in learning to preserve their harvest. With overabundance (that would otherwise waste), sun (which is free and accessible to all), and a solar dehydrator I have developed over three years (\$200 to build, \$0 recurring cost of operation), sustenance farmers can increase food security, decrease food waste, generate income, and empower themselves with the skills needed to extend the benefits of their cultivation efforts through the lean season.

S.H.I.N.E. On The Gambia offered training for fifteen women from three different villages to learn to operate and maintain a proof of concept solar dehydrator developed to preserve overabundant fruits and vegetables for personal use and sale in the local market. Dehydration maintains the nutrients in foods and allows shelf life up to one year. Additionally, this method of processing removes moisture, eliminating bacteria, yeast, and mold which can occur more favorably in other forms of preservation. Additional components of the curriculum included basic nutrition, solar cooking, entrepreneurialism, and charcoal briquette making from yard waste. This 100 Projects for Peace grant, and several in kind donations of supplies, as well as local partnerships, made this project financially possible and successful.

The project extended through August, and the curriculum was redesigned, to accommodate an early onset of the rainy season. The participating women were trained in fruit drying by three other Gambian women who completed training earlier this year, in the previous phase of this project. The women trained in small groups in their own villages due to impassable access to the main road during the rainy season.

Everyone met together as a large group at the beginning of the project for three days to train on charcoal briquette making using dried mango leaves and coconut shells--eliminating the need for firewood and decreasing deforestation using yard waste. This was added to the curriculum because climate conditions did not allow for training in solar cooking, which the women will complete as a large group in October with a local partnering organization. The women who led the trainings in this phase received a solar oven and parabolic cooker for their community organization, complementing the training they received on the equipment earlier in the year.

Attaining and transporting materials to the training sites was not possible after the first several days of heavy rain. Because of this, proof of concept solar dehydrators were built by a youth empowerment group of eight boys, trained in cabinetry, and delivered upon completion for the second half of the women's training which included using the new dryers, marketing, selling products in the local market, and savings systems. The boys received training on the construction of the dryers and worked on them throughout the first half of the project while the women trained on drying as a means of food preservation with table style dehydrators. Communities received contact information for the leader of the boys' group in order to contact him in the event of needed repairs in the future.

Immediately, fifteen women, all with families of their own, eight boys from the youth group, and the three trainers, along with their community organization, benefitted from the project. Other members of the villages have expressed interest in project participation and have joined public meetings to learn how to gain involvement. Some of the women trained earlier in the year have gone on to independently

train up to ten other women in their villages. In these cases, the women created a schedule which allows everyone access to the community dryer that was provided in the previous phase of the project. This group will be provided with two solar dryers after the rainy season in order to continue their efforts more efficiently. By preserving their overabundance, these women decrease their food waste and provide their families with nutritious snacks of dried mangoes, papaya, coconut, bananas, and cashew (including the fruit!) while generating income from the sale of the dried fruits, especially when they are no longer in season.

This project was useful for the women involved over the past year in terms of increased skills, decreased food waste, money saved, and income generated. I am staying in The Gambia to continue working with the women on building this solution, but hope to one day share it in other countries facing similar problems. I plan to start a nonprofit, S.H.I.N.E. On, focused on training sustenance farmers in solar food preservation and preparation to increase nutrition and income, and to protect the environment—using empowerment strategies based on the use of an unregulated, renewable, and free natural resource: the sun. I will partner with universities to train innovative student trainers who are seeking solar food processing solutions to address the same problem in other agrarian communities.

Peace is freedom from oppression—of the environment, each other, and ourselves—and the agency to seek such freedom through action. This training introduced solar solutions to rural farmers that will increase their families' nutrition and income, add nutritious products to the local market at an affordable price, spread awareness about the possibilities of solar solutions, and protect the environment from waste, deforestation, and hazardous air pollution. Furthermore, it started a conversation mindful of the future of the environment, the community, and the individual participants.

Extreme poverty is widespread, instability is increasing, and 90% of the youth have fled the country via “the backway” over the last couple of years, but the sun will continue to shine on The Gambia. Solar energy means access to energy for so many who live in darkness--solar drying and cooking just sows a seed of possibility. This project introduced new skills, started new conversations, and provided peace of mind for the women that they will be able to nourish their families, and gain income, year-round from their tireless cultivation--instead of seeing the overabundance of their efforts wasted.

This project taught me that, with a peaceful heart and mind, there are always solutions, modifications, and adaptations to solve any problem--we are bigger than our problems. Seeking peace, not perfection, from yourself first allows you to follow your heart and trust your instincts in a way that builds your self-confidence and deepens your ability to identify, and connect with, others who are also seeking peace. This has been a humbling, enlightening, and enriching experience that has changed how I view myself, my connection with others, and my place in the world.

“This project showed me that true peace lives inside, separate from what is happening outside. When there is peace inside, it follows you, emanates from you, and shines on all those in your path. I have been lucky to befriend many of these peace carriers over the past year and I am grateful for their light as we navigated through this journey together--I am proud of all we accomplished, inside and out.” – Whitney Ceessay

