Scaling CoolVeg's Clay Pot Cooler Training Program:
Reducing Food Loss and Improving Nutrition in Arid Regions

Food security in the Sahel and other arid regions in Africa is an ongoing challenge that will only be exacerbated by climate change. It is estimated that 30% to 50% of fruits and vegetables harvested in Sub-Saharan Africa are lost before being consumed. Insufficient access to effective storage solutions leads many households to make frequent and lengthy market trips, contributes to significant food losses, and limits regular consumption of nutritious fruits and vegetables.

Clay pot coolers are simple, affordable, and effective devices that can solve these challenges for many families. By providing a cool and humid storage environment, clay pot coolers can improve the shelf life of many common fruits and vegetables in hot and dry regions. For instance, using a clay pot cooler can increase the shelf life of leafy greens from 1 day to 6 days, African eggplants from 3 days to 15 days, and carrots from 3 days to 18 days. These devices can be quickly and easily assembled using locally available materials and typically cost between $2 and $10, depending on their size and local materials costs.

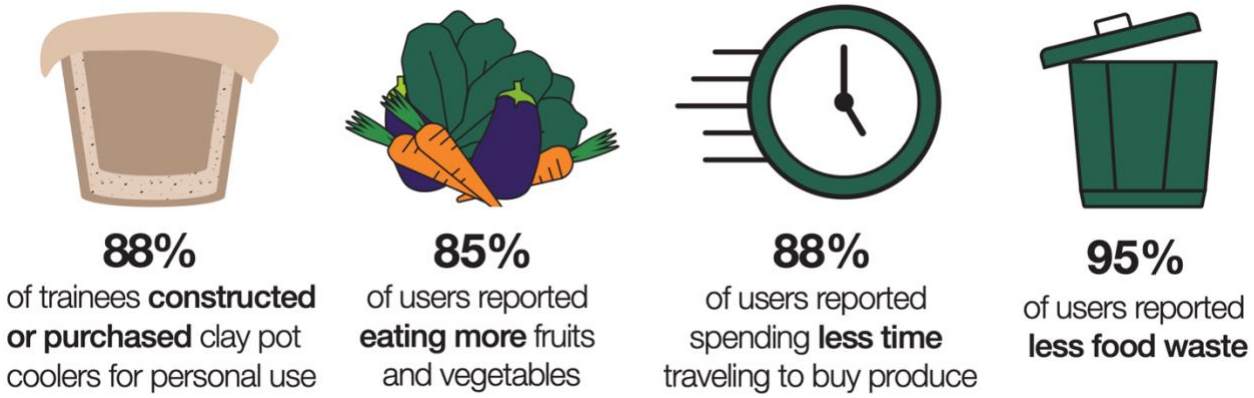
Open basket after 3 days

Clay pot cooler after 3 days

While using a clay pot to store and keep water cool in the hot and dry regions of Africa is extremely common, few households use clay pot coolers for fruit and vegetable storage. In both cases, cooling occurs from the evaporation of water from the outer surface of a clay pot and other wetted surfaces.

CoolVeg's clay pot cooler training program was developed in collaboration with MIT D-Lab, World Vegetable Center (WVC) and the Institut d'Economie Rurale (IER) in Mali to address this knowledge gap. Our training program builds on indigenous knowledge, adapting the "Zeer pot" concept by using materials that are less expensive and more widely available, while delivering comparable performance. The content of the training program is designed to be simple and rely heavily on images, videos, and hands-on activities. This approach has been proven effective in

stimulating clay pot cooler usage, with very high adoption rates. The implementation of this training program in Mali and Niger has allowed households to save time and money while avoiding food spoilage and having greater access to nutritious fruits and vegetables. These outcomes are made possible by the improved storage environment provided by clay pot coolers.



While these results are impressive, what strongly positions this program for success is its potential for cost-effective scaling by leveraging existing information networks in communities. Our cascade training program starts with intensive three-day Training of Trainers (ToT) workshops led by the CoolVeg team, covering fruit and vegetable storage principles, clay pot cooler assembly, and teaching methods. These ToT participants—such as extension agents, cooperative members, health workers, and teachers—then lead local sessions in the communities where they live and work, making this approach both cost-effective and community-centered. By including clay pot makers and sellers along with vegetable farmers, vendors, and consumers in the training sessions, the program creates both supply and demand for clay pot coolers. Information continues to circulate after the training sessions; in Mali and Niger, each trainee shared knowledge about how to make and use clay pot coolers with an average of 10 people, and 80% of trainees observed adoption among those they taught.

To date, more than 320 training sessions have taken place in Mali and Niger, with an estimated 200,000 people benefiting from clay pot coolers as a result of CoolVeg's training program. When implemented at scale, this program is extremely cost-effective with an average cost of less than $1 per person impacted. The cost includes ToT workshops, community-level training sessions, CoolVeg and local implementer project management, and general awareness and promotion activities.

Instead of building a sales and distribution network for physical products, CoolVeg's knowledge dissemination program leverages the simplicity and local availability of the technology. This lowers the cost of clay pot coolers for users and ensures that widespread usage of clay pot coolers can be sustained without the input of external resources.

Left: Mariame Sogoba (World Vegetable Center) explaining how clay pot coolers function and their best practices for use during a ToT workshop in Maradi, Niger. Right: Zabeirou Harouna and Ado Habou placing jute sacks on top of a recently assembled clay pot cooler during the first day of the ToT workshop.

CoolVeg is actively pursuing funding and strategic partnerships to expand its clay pot cooler training program throughout the West African Sahel and other arid regions where improved fruit and vegetable storage is urgently needed. The Sahel region, home to roughly 180 million individuals living in off-grid, rural communities, is among the poorest, most food-insecure, and climate-vulnerable regions in the world.

By enabling widespread use of clay pot coolers for fruit and vegetable storage, CoolVeg's training program is positioned to benefit tens of millions of households through access to clay pot coolers. Households using clay pot coolers will be more resilient to climate change, have less food loss, save time and money, and – most importantly – be able to regularly eat healthy fruits and vegetables. To accomplish these objectives, CoolVeg seeks to inform key institutional stakeholders—including national and local governments, UN agencies, foundations, and philanthropists—about the training program's scalability, sustainability, cost-effectiveness, as well as its nutritional and economic impacts.

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