

Shamsi

Solar Cooking made local

A community-driven solution towards mitigating mixed-waste burning and the excessive use of fossil-fuel and biomass while promoting food security and local production.



Capture the sun.

Shamsi is a low-cost solar oven and cooker, built from locally available, health-safe materials and applying low-tech mechanisms.

The designed solar oven uses direct solar radiation as a renewable energy source for baking and slow cooking. “Shamsi” (شمسى) is the Arabic adjective for sunny, sun-bathed, or from the sun.

By mere positioning into the sun, direct sunlight is captured within the reflective oven chamber, where the heat is retained through the insulated box walls. *Shamsi* reaches a record of 150°C compared to similarly sized solar cookers on the market. Thereby, *Shamsi* upholds local cooking and baking traditions, while making clean energy accessible in rural areas.

By replacing the regionally widespread habit of burning mixed-wastes in order to fuel traditional cookers, *Shamsi* significantly reduces carbon emissions. Households are at lower risk of severe respiratory and cancerous diseases caused by smoke and fire. One module saves a household up to 75% of energy-costs after the first year.

Create opportunity.

Shamsi was first developed and tested in close collaboration with local communities, in multiple Southern Egyptian villages. Currently, it is being applied and tested in Tanzania with additional food-drying functions in collaboration with the *Climate Action Network - Tanzania* research and innovation team. The *Shamsi-TZ Research Activity* is supported by *Schwesternschaft der Evangelischen Diakonissenanstalt - Stuttgart*.

Shamsi is built exclusively from locally available, health-safe materials and applies simple mechanisms. Therefore, it can be easily produced and assembled by locals. This secures gender-equal income opportunities in Tanzania, empowering women towards self-sufficiency, especially in low-income rural or urban districts.

In the current project stage, material tests in local wood- and clay-workshops are being carried out and documented by the *CAN-TZ* team, lead by *Shamsi*'s product-designer and founder, Mira Gayed. For example, on-site visits in multiple clay-workshops and brick-suppliers are being conducted in the Morogoro region, known for its abundant clay natural resources and building know-how. Integrating local knowledge and establishing relations to local workshops and suppliers is key to achieving a locally adapted and sustainable solution. Over this quarter, the first operation tests will be run, examining thermal performance and efficiency. Followed by an iteration phase and first user tests on *saba saba* and *nane nane*, introducing the new concept.

