Solar Box Oven (ULOG)



Why to choose this solution?
On sunny days, a solar box cooker reduces the use of firewood and the time collecting firewood, as well as saves money to buy firewood or charcoal. There is no smoke. The box cooker is an insulated box, with a reflector using the greenhouse principle. You can cook in multiple pots, and no need of steering the food. The ULOG solar ovens can be bought or made from local materials, according to a manual.

Savings per day or production:
The solar box cooker saves the use of fuel wood or charcoal on sunny days.

Cost in money and in own time to construct:
It costs as low as USD 60 to contruct depending on materials used. They can also be built by yourself according to instruction in a couple of days. There is a Do-It-Yourself manual, which is open source. The cooker consists of an insulated box with a transparent top allowing light in, and reflectors to collect more light into the box.

Lifetime:
Around 10-15 years.

Maintenance needed:
Regularly clean the reflectors, window, and interior of the box after use.

Resources needed in use:
No need of fuel.

Problems and limits:
It is not ideal to prepare meat and frying since it does not reach high temperatures enough. You cannot cook in cloudy and rainy days. Cooking takes longer time than cooking on fire.

Where and how can you get it or make it?

Skills needed to produce, install. maintenance, use:

How to use it:
Place black pots of food in the oven, close the oven and align the oven with the direction to the sun (shadow behind the cooker). Cooking usually take 1-3 hours. Optimizing it, turn the cooker to follow the sun every 20-60 minutes. It cooks well rice, stews, eggs, vegetables and East African foods as ugali, githeri, sukuma wiki.

How to maintain it:

Climate effect (if any):
Using solar cookers ovens on sunny days lessen the demand for firewood or charcoal, thus reduce CO2 emissions from cooking, and reduce deforestation.

Where it is used and how many users are there?

Why is it successful?
It is a strong box, which manages well for long time.

If you can make it, a short description, typical problems, materials needed:
You can build it from local material such as Wood plate, glass, reflecting material (aluminium folie).

How to make it (if possible):
You can build it yourself. Do it Yourself Manual is available. See at the more info underneath.

How is it delivered and by whom?
You can buy it or you can build it yourself.

Successful financial model
You can buy it or you can build it yourself. Local production ensures good quality, keeps costs lower and supports the local economy. Ecomandate produces it in Kenya, by Kenyans, using materials available in Kenya, and for use in Kenya. The double sized model (see photo) is also produced and used in Kakuma refugee camp since 2018. This approach of local production building solar cooking capacity in Kenya is leading to increased accessibility and affordability of solar box ovens in Kenya.

What policies and strategies helped the success?
Advocating partners for solar cooking like Solar Cookers International are urging national governments to prioritize solar cooking in their national policies and in refugee camps.

More info:
https://ecomandate.com/ , https://solarcooking.fandom.com/wiki/ULOG_1.0 , https://solarcooking.fandom.com/wiki/Category:Solar_box_cooker_designs . DIY Manual: http://www.med.uni-magdeburg.de/~maercker/SolCook/slcot-en.html

Sources:
Solar Cookers International (SCI), Ecomandate Foundation, Mbagathi Road, Nairobi, Kenya. T: +254 729 001702, ecomandatefoundation@gmail.com

When was the case uploaded?
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Case from Catalogue of Local Sustainable Solutions in East Africa. Read more and see partners at localsolutions.inforse.org