
LILO Rocket Stove

Harold Msanya

LILO rocket stoves are simple to use, fast cooking stoves made of cheap available material (clay soils) which uses less fire woods and produces less or no smoke.

It all started when ECHO East Africa Director, Erwin Kinsey, brought one set of LILO rocket stove to ECHO from the renewable energy consultant Christopher Kellner. Then, the East Africa Appropriate Technology team adopted the stove and installed it to a farmer near the ECHO office for monitoring and data collection. The stove proved to be far better than the traditional three stoned stove that have been used traditionally.

Seeing the benefits received by the rocket stove initial users, ECHO team planned on scaling up rocket stoves to eight nearby communities. The team organized a hands-on rocket stove training. By the end of the trainings, 253 men and women were equipped with rocket stoves training and 151 rocket stoves were constructed and used by the families to date.

Gerryson, a local technician who lives in Ekenywa village, Arusha participated in a rocket stove technology training. He used to be a mason but due to age factor he's not constructing and using his life long experience anymore. After the training, he's now applying his innovative skills in constructing and installing rocket stoves to his fellow villagers where he gets paid. Gerryson commented:

Few days after receiving the training, I constructed two rocket stoves in my kitchen. My neighbors and friends saw the stoves and asked me to install it for them, since then I have installed stoves in people's kitchens for 10 thousand shillings. I love the technology and I have been disseminating this information to others.

Rocket stove trainings have been life changing. It has provided a safe cooking environment, has shortened cooking time, and has created a source of income for local innovators, house wives, older people, and the community at large.



Gerryson's rocket stoves he has constructed in his kitchen

Testimonies from the field



Mr. Julius Ndoyai, a participant of the rocket stove training in his kitchen using the rocket stove he made

The LILO rocket stoves were highly accepted and adopted in the communities after the hands-on training conducted by ECHO Appropriate technology team. This is because of its fuel efficiency, affordability, simplicity in making, operating and maintenance and little/no smoke production.

Julius Ndoyai, both a farmer and an entrepreneur from Embibia village used to cook in a stove that looks like rocket stove. He pointed out the challenges he faced including smoke produced from the stove, time consuming, and fuel inefficacy. And that the rocket stove changed his life

completely:

After the trainings I have replaced my old three stoned stove with four rocket stove two in my home kitchen and the other two in my restaurant" cooking is more comfortable and cleaner than before.

As the saying goes, "Nothing interesting is ever completely one sided". Despite the benefits that were brought about by this life changing rocket stove, there were few challenges pointed out by the users:

- It was Initially raised by the users that the stoves are labor intensive compared to the traditional stoves. i.e., Requires one to frequently push firewood sticks into the stove to keep the flame on.
- Took a long time to light up the stove

ECHO East Africa Appropriate Technology team, decided to construct the rocket stove in ECHO offices so as to practically work on the issues raised. They came up with several resolutions while using the LILO rocket stove:

- Healthy fire needs oxygen, good burning materials and adequate temperature. Hence a wet stove cannot produce healthy fire. Blocks should be dry before constructing the stove and the stove should be readily dry before using it.
- Dry firewood should be placed in such a way that the window is not fully filled. Push firewood in only a few centimeters to allow enough burning room



ECHO East Africa Interns appreciate how a rocket stove works

All these solutions were included in the training guide developed by the ECHO team and excellent performance was attained.

Overall, the project was successful due to high level of adoption over time. ECHO East Africa Appropriate Technology team continued to monitor the numbers through calling of key informants. The team also plans to reach more communities due to high demand of these training to the nearby villages.

For more information about LILO rocket stove technology and to learn more about this research project please reach out to Harold Msanya, ECHO East Africa Innovation Coordinator through e-mail: hmsanya@echonet.org (<mailto:hmsanya@echonet.org?subject=LILO%20Rocket%20Stove>).