

# KULIMA: Empowering Communities with Improved Cookstoves in Moamba, Mozambique

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## Project Summary

The Empowering Communities project is implemented by the Organization for Integrated Socio-Economic Development (KULIMA) and others (Adel Sofala and Livaningo) in Maputo, Inhambane, Gaza, Sofala and Manica provinces in Mozambique.

- **Project period:** 2015- Feb 2021
- **Stakeholders:** Local associations, district government and municipal councils
- **Financing:** External financial support from Naturvernforbundet/NORAD to realize the activities. Households contribute for services of the local activists and use of construction materials.
- **Impact:** 9,000 improved fixed clay stoves built in Moamba

## Context

Wood fuel resource has become scarce due to the widespread deforestation. Also, cooking with traditional and inefficient cookstoves produces black smoke pollution which causes many respiratory disease and even deaths. Time and money for acquiring wood also places a heavy burden on the households. Hence, clean, efficient, and affordable cooking solutions are an imperative for local development.

Alternative fuel and improved stoves offered commercially to individuals has a limited outreach in communities where they mainly cook with wood on a three-stone stove. Hence, for this project, communities are selected based on their vulnerability to climate change, access to forest resources and interest in the community for exploring improvement possibilities. The community is involved in the entire project process such as drafting of the proposal, the establishment of the baseline, community consultation and monitoring.

## Project Description

The "Empowering communities" project addresses clean cooking at community level. Local leaders mobilize citizens, collect lists of households signing up for an improved stove, gather financial contributions from each household to cover the raw materials, and identify local masons that are willing to participate in the construction work required after training.

With collective efforts affordable fixed clay stoves with chimney are built for everybody with a roofed kitchen. Mobile stoves are promoted for those without kitchen.

KULIMA has worked for four years in Moamba with awareness raising, training local artisans on on-site production of fixed improved clay stoves with chimneys and providing technical assistance during construction and use. It has established 2 energy stores that sell mobile cookstoves. In 2022, practically all households in Moamba have converted to improved stoves, with construction of more than 9,000 stoves.

For the fixed stove with chimney, beneficiaries are households in communities who are vulnerable from climate changes and harmful cooking practices in rural districts.

Promotion of the fixed stoves with chimney in an integrated part of a community project for increased resilience that also includes natural resource management, saving and loan groups and solar systems for basic access to electricity. The community's mobilization is made in coordination with the local leader and government during the communities' meetings to explain the advantages of using these kind of stoves. Then the project staff and local activists does door-to-door advocacy to convince beneficiaries to join the project.

## Financing Options for Consumers

For the fixed stoves with chimneys, the beneficiaries pays a small amount of 100 MZN as remuneration for the mason (who builds the stove) as well as to cover the cost of the chimney sheet. KULIMA provides good quality clay and does the community mobilization work. Some families with special needs are supported with free material and services from the community or the project.

## Operation and Maintenance

The end users are trained in the correct usage of the stove when they start to use the stove and during the monitoring and follow-up activities, a refreshment is realized. For the mobile stoves, the sales points are trained in the correct usage, and they train the customers when they come to buy.

## After Sales Service (Repair, Replacement and Sustainability)

All families with a new stove are followed up by the mason who advices on use and maintenance. Clay for regular maintenance and repair is available freely in the community.

When the stove is regularly maintained, it can last for five years or even more. Masons involved in the stove construction are part of the community and always available for follow up on repair and replacement.

## Impact and Lessons learned

Moamba has around 34,000 people with more than 75 % live in poverty and depend on firewood for cooking. Kulima introduced improved stoves in 2015. Today more than 9,000 improved fixed clay stoves have been built, and practically all households in the district have converted to improved stoves, making Moamba the first smoke-free community in Mozambique.

The improved stoves are highly valued, first and foremost for fuel savings. Monitoring shows a fuel saving at around 60-70 % compared to 3-stone fire. Using an improved stove, 1-3 logs are enough to keep the fire running in the insulated chamber. Increased combustion temperature eliminates most of the smoke, and the rest escapes through the chimney. This is a substantial improvement compared to the traditional three-stone stove that needs 4-10 wood logs to burn properly and the heat and smoke also go in all direction.

Fuel saving gives substantial economic saving and/or less time spent on collection of wood. According to the interviews with families using an improved wood stove, the time saved is mostly used for income generating activities. Additional income and money saved on fuel is mostly used for improved diet, hygienic articles, and school materials. Among users that no longer use the three-stone stove, 98 percent say that they previously had experienced severe negative health impacts from the smoke. After half a year with an improved clay stove with chimney, 97 percent reported that the health impact is substantially reduced or eliminated. Improved health adds to the ability to run other income generating activities.

Some other positive changes observed are:

- The volunteers/local masons who worked on the project in Moamba are still requested by communities to build the fixed stoves due to the impacts of the project they are seeing now.
- The stoves make the kitchen cleaner, and many have used the opportunity to improve kitchen management.
- The new stove is also used for income-generating activities. The stove has space for two pots, and many use one for cooking for the family and the other for soup and food that is sold locally.

## Constraints and Recommendation

We faced the following challenges:

- For families to quit three-stone fire or other traditional and inefficient stoves, it takes time, and they need practical demonstrations. This is being solved by regular mobilizations, intervention of the local leader and government during the community's meetings, distribution of awareness material, practical demonstration of an improved stove and use of media and community radios to influence families.
- The communities are not used to have a roofed kitchens but the fixed stoves must be built in roofed kitchens so that the rain does not destroy them. For the families without roofed kitchens, they buy the mobile stoves while they wait to add a roof over their kitchen.
- During the rainy times, it is very difficult to extract the clay and hence we provide clay to the communities during the rainy season.
- The active activities ended in Moamba in February 2021 and Covid-19 was not very strong in Mozambique, but we have been doing awareness to the communities for the Covid-19 Protection.

## Further Information

- <https://drive.google.com/open?id=1qfAMf0trAtbRlp4rhhqexyXapQR7RdY7>
- <https://drive.google.com/open?id=1pRiwn-giFbJL2oHgzVDQX1yNZLBZCEGQ>
- [KULIMA's project in Boane, Mozambique](#)

## Contact

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