

# One-Pot Rocket Mud Stove



## Type

Household rocket mud stove with one saucepan cavity (pot-hole), without chimney.

Built-in or portable

## Names

Shielded Fire (Uganda)

One-pot rocket mud stove (Kenya)

## Fuel

Fuelwood

## Country of origin / dissemination area

Uganda, launched November 2004. Around 291,900 stoves disseminated by 2008 in 14 districts.

Kenya, launched May 2006, with 35,000 one pot rocket mud stoves built by October 2008.

## Users

Rural and peri-urban households.

The stove is often used to complement a 2-Pot Rocket Lorena stove, as a stand alone stove for cooking small portions, or in combination with the 2-Pot Lorena for bigger events.

## General Description

Medium-weight mud stove with

- One pot hole, no chimney
- Single fuel feed and combustion chamber.
- Built to rocket stove principles, with a shelf for firewood and tall combustion chamber; the pot sits within stove body

The latest version has a separate air inlet instead of the shelf illustrated (at the entrance to the fuel feed).

The pot-hole is customised to fit the pot diameter snugly, so that gases pass close to the pot sides as they leave the stove. The diameter is thus related to the saucepan capacity.

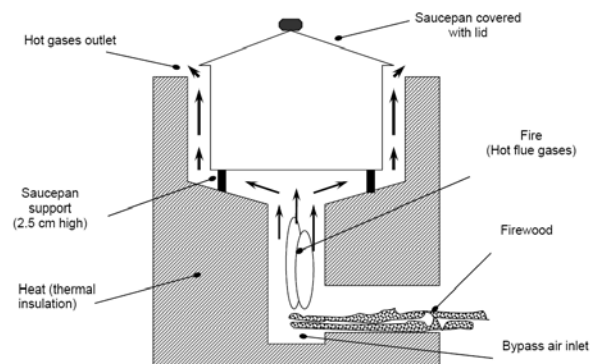
The stove has a circular cross-section, with overall size dependent on pot diameter.

## Stove dimensions

For average size saucepan (5 - 10 litres)

- Diameter: 50 cm
- Height 60 cm

**Lifespan:** Average 2 years



Sectioned view of the Shielded fire rocket stove

## Materials used

Built of an insulating clay mixture comprising mud bound together with organic material such as chopped grass, sawdust or chopped dry banana leaves to form a homogenous block.

## Efficiency

Saves 50% – 60% of the firewood that would be consumed using a well-operated three-stone fire.

## Production / Supply

The stove is produced by trained local artisans who are supervised by local, more senior, colleagues.

The stove builders live in local villages and are directly contracted and paid by the users.

The stoves can be built at the homes of those buying the stoves, or they can be fabricated in a small workshop. Transporting these heavy stoves is a delicate task.

No sophisticated tools are necessary, but a binding clay soil is needed.

A quick and simple guide is available, providing suitable dimensions for the stove (see last paragraph).

One stove builder can produce an average of 300 stoves per year.

## Price:

In Kenya, average price ranges Ksh. 200 – 600 construction fee (3-9 US\$) in 2008.

In Uganda, it is 1.5 – 3 US\$.



## Strengths and weaknesses

### Positive

- + Efficient, cheap stove.
- + Rapid level of adoption by large numbers of people
- + Income generation in the villages through use of locally available materials and the employment of local stove builders.

### Negative

- Only applicable where the appropriate clay soil and organic material is available.
- Considerable wear and tear, especially in the fire chamber, and around the pot-rest due to energetic stirring required in making *ugali* (maize porridge).
- Regular maintenance needed.
- The dissemination system, involving trained local stove builders, needs a quality monitoring system maintained for quite some time.

### Available documents:

- Ministry of Energy and Mineral Development (Uganda), Energy Advisory project: Construction Manual for Household Rocket Stoves, June 2008. <http://www.energyandminerals.go.ug/DOC/S/>

Source of pictures:

Energy Advisory Project, GTZ Uganda

