

Firewood Jambar Stove

Senegal



Type

Portable, metal household stove with ceramic liner. Suitable for a range of three to four pots

Names

“Foyer Jambar à bois” in Senegal

Fuel

Fuelwood



Country of origin / Dissemination area

The design is based on the Thai bucket stove, launched in Thailand in 1985 and was further adapted to the Senegalese flat bottom pots.

It was launched in 2006 in Senegal within the PERACOD¹ programme.

By December 2010, over 3,700 stoves had been produced and sold in the intervention areas.

Users

Urban, peri-urban and rural households

General description

Portable metal stove with ceramic liner:

- Metal cladding
- Combustion chamber made with ceramic liner
- Three metal pot rests
- Handles

Stove dimensions

Two stove sizes are sold on the market. Dimensions for the bigger stove size (for 7 to 10 kg pots):

- Height: 23 cm
- Diameter: 40.5 cm

Estimated lifespan

At least two years

Materials used

Cladding: Scrap or new metal sheet, at least 0.6 mm thick

Ceramic liner: Fired clay

Binder: Cement and ashes

Performance

The stove saves about 45% of firewood compared to a three-stone fire.

Production / Supply

The production is semi-mechanized.



The ceramic liners are made by female potters.

Clay is prepared and moulded. After drying, the liner is fired in a pottery kiln and delivered to the local tinsmiths, who then

assemble the final product.

Standardized templates are used to outline the different stove parts on a metal sheet; then they are cut out along the indicated lines.

The use of templates allows the producers to maintain standard sizes, to fulfil quality standards and to increase the number of produced stoves per day. The cut pieces are assembled without electricity.

¹ Programme pour la Promotion de l'Électrification Rurale et de l'Approvisionnement durable en Combustibles Domestiques

The liner is fitted in the metal cladding with a mortar made from cement and ash.

An intense quality control system supported by the project, the trained artisans and the research centre ensures the quality of the stove and the customers' satisfaction.



Price (2011)

The price for the second stove size (for 7 to 10 kg pots) is about 12.00 € (8,000 FCFA).



Strengths and weaknesses

Positive

- + Efficient stove
- + Portable
- + Decentralised production
- + Moulds and standardized templates allow high quality production
- + Enhances local production and income generation, especially on the part of women producing the ceramic liners

Negative

- The pot sits on top of the stove and is not sheltered by a skirt. This leads to heat losses from the sides and to poor heat transfer into the pot
- Expensive for rural regions
- Production depends on the existence of two professions: potters and tinsmiths
- Production depends on the availability of suitable clay for the ceramic liners.

Available documents

- Guide de fabrication du foyer Jambar (PERACOD, 2008): https://energypedia.info/index.php/File:GUIDE_DE_FABRICATION_DU_FOYER_AMELIORE_JAMBAR.pdf
- Guide de spécifications sur les foyers améliorés Jambar (Agence Sénégalaise de Normalisation, 2009)

Source of pictures: GIZ Sénégal
Last update: April 2011

HERA –Poverty-oriented basic energy services

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Postfach 5180
65726 Eschborn

hera@giz.de
www.gtz.de/hera

