

Bondhu Chula

Bangladesh



Type

Fixed one, two or three pot prefabricated concrete stove with chimney

Name

Bondhu Chula which means *Friendly Stove* in English.

Fuel

Fuel wood, cow-dung stick/cake, twigs, jute sticks and other agricultural residues.

Fuel size varies between few cm to 60 cm length and thickness of 0.5 to 5 cm.

Country of origin

In Bangladesh, the Bondhu Chula was developed by the Institute of Fuel Research and Development (IFRD) of the Bangladesh Council of Scientific and Industrial Research in early 1980s. In 2010, Sustainable Energy for Development (SED) developed a concrete version of cookstove.

Over 800,000 stoves have been disseminated between 2005 until 2013.

Users

The Bondhu Chula is mostly used in suburban and rural households where natural gas supply is not available. In average 4 – 5 persons are living in one household in Bangladesh.

A larger size of the Bondhu Chula is being used in institutions (e.g. restaurants, hostels, hospitals, small and medium industries).

General Description

Main structure with:

- fuel inlet
- air inlet
- round pot hole(s) and grate
- chimney holder, chimney and chimney cap
- continuous feed-in stove

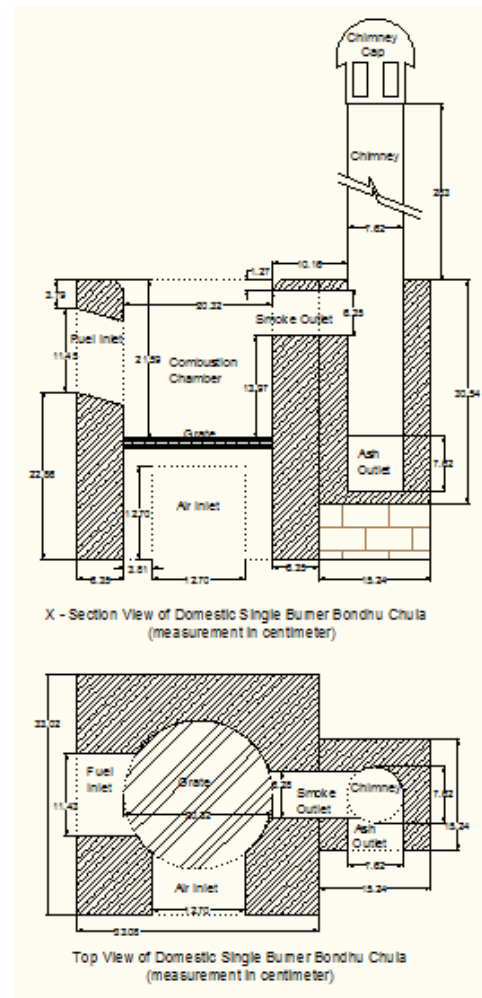


Figure 1: Technical drawing of Bondhu Chula

Stove dimension

The pot hole diameter ranges from 17.8 cm to 30.5 cm for domestic stoves and from 38 cm to 50.8 cm for institutional stoves.

Estimated lifespan

3 to 5 years

Materials used

Concrete is being used for making stoves. The ratio of brick, sand and cement (low quality but high silica content) is 3:2:1. Iron wire and wire mesh are used to ensure reinforcement. Grates are made of cast iron and chimney caps are made of burnt clay. The concrete parts are usually covered with a clay layer.

Performance

Compared to the traditional stoves, the Bondhu Chula saves up to 40-50% of fuels. Specific fuel consumption is 192 g/litre (based on WBT done in 2012 by Aprovecho Research Centre).

Production / Supply

A team of stove promoters are supporting small scale producers to manufacture and market the Bondhu Chula. These small enterprises (so-called 'sanitary shops') are manufacturing the concrete stoves and install them in the households. At present, around 500 trained stove promoters are working with Bondhu Chula program. Currently, Bondhu Chula program is implementing by GIZ with the collaboration of Ministry of Environment and Forests, Bangladesh. They have mobilised more than 4300 sanitary shops to produce prefabricated, standardized stoves and install. SED provides training in all aspects of stove production, installation and maintenance.

Price

Average price of domestic Bondhu Chula is about BDT800 - 1200 (appr. €8 to 12).

The institutional Bondhu Chula price varies between BDT 3000 to BDT 5000 (appr. €30 to 50).

Strengths and weaknesses

Positive

- Reduces indoor air pollution in the kitchen and reduces fuel consumption
- Provides comfortable cooking environment and saves time
- Durable
- Use of locally available materials and prefabricated moulds to produce stoves ensuring quality

Negative

- Fixed stove type
- Regular maintenance is required, in particular cleaning of the chimney



Available documents

- PR materials
http://www.cleancookstoves.org/resources_files/improved-cooking-stoves-save-lives.pdf
- Implementation manual and user guidelines are available in Bengali language

Source of pictures:
Sustainable Energy for Development (SED),
GIZ Bangladesh

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