



C2 REVEALING GOOD PRACTICE

Improved cooking stoves

At a glance

Fuel efficient stoves use less wood. This requires less work, saves time and money and is better for health and the environment.

- Ensure proper participation from stove users in the design and building of stoves.
- Build demonstration stoves.
- Manufacture locally.
- Explore local markets for sale.
- Ensure affordability.
- Ensure proper ventilation.
- Use clean clay.
- Use dry, high heat yielding wood.

One method for making a stove:

- Draw a line around your largest pan.
- Place three bricks within the circle edge, on clay, at equal distances.
- Build a clay base and clay walls around the bricks.
- Put a pan on top and build up around the pan, leaving a gap.
- Smooth the sides with a scraper.
- Cut a ventilation hole and leave to air dry.



Why use this tool?

Improved cooking stoves use less fuel. When wood is used for cooking, this means that fewer trees are cut down in order to cook food, which means less work, less money and less of an impact on the environment. It also means that women and children are at less risk of being attacked when searching for firewood. Improved stoves also produce less smoke than other cooking stoves. This means that people's health can improve as a result of using them. A well-designed stove will also help cook food and boil water more quickly.



A brief description

Guidance on making a small stove using clay and bricks. This is just one method of making an improved stove: many other methods exist. See, for example, the PACE Project Action Sheet 62 (see Finding out more, below).

Awareness-raising

Children & youth

Climate & environment

Conflict & peace-building

Corruption & governance

Disaster risk management

Discrimination & inclusion

Food & livelihoods

Gender & sexual violence

Health & HIV

Influencing decision-makers

Migration & trafficking

Water, sanitation & hygiene



Time taken

It normally takes a day to learn to make improved cook stoves well. Once you have learned, a stove can be made in a few hours.



You will need

- a saucepan
- three pieces of brick of a similar size
- clay
- a knife or scraper



Keys to success

- **Ensure proper participation from those you hope will use the stoves.** Early and genuine participatory decision-making is needed or people are unlikely to use the stoves. If possible, encourage the community to be involved in designing the stoves, and to try out different designs to see which ones work best for them. One method is to build demonstration stoves for people to visit and try out. It is very important that the design takes into account the needs of the people who will use them so that the design is acceptable and affordable. It is also important to ensure that the technology is appropriate for local manufacture.
- **Ensure proper ventilation.** Cook stoves need to be either permanently installed with a chimney or used in the outdoors with plenty of clear air; fumes can make people unwell or even kill.
- **Ensure the clay you use is not contaminated.** Contaminated clay is clay containing vegetation or soil from decayed plants and animals, or clay which has high amount of sand, low moisture content, trapped air pockets, or pollutants. Contaminated clay can cause the stove to crack or to release toxic pollutants into the room as it heats.
- **Use wood that will give off a lot of heat.** Some wood gives off little or no heat – particularly wood with a high moisture content. You could store the wood for a few weeks if it has been rained on, and three months or more if it's from a living tree, to ensure that it is dry and will burn well. A few species of wood give off a bad smell or even poisonous fumes when burned. Ask other people what they find burns best.

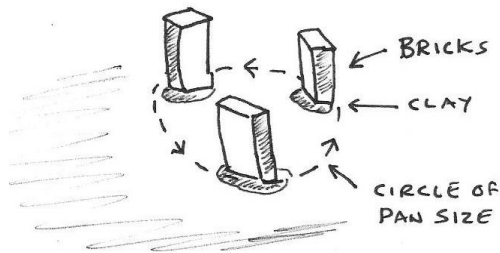
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What to do

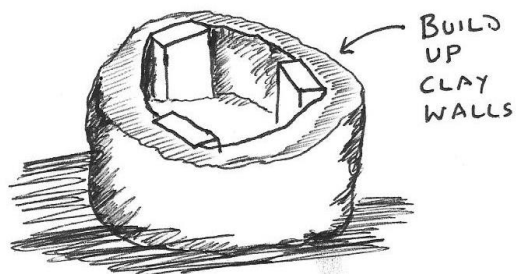
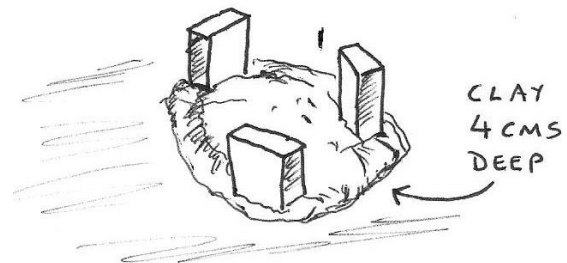
This is just one method of making an improved stove: many other methods exist.

Draw a line around the outside of the largest saucepan you will use on the stove. This will decide the size of the stove.



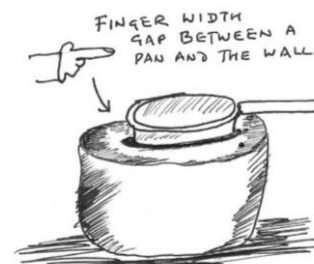
Take three bricks that are a similar size, and stick a piece of clay under each of them. These bricks will be what pots and pans rest on when the stove is used. Place the three bricks with clay stuck underneath inside the edge of the circle drawn in the sand. They should be equal distances apart.

Fill the whole circle with clay so that it is about 4cm deep. The bricks will stick out above the clay.



Use clay to build up walls outside the bricks, keeping a small part of the bricks in the wall. Make the walls about 4cm thick. Make the walls as high as the top of the bricks.

Place the pan on top of the bricks. Continue to build up the walls until they reach just below the top of the pan. Keep a finger-sized gap between the pan and the wall.

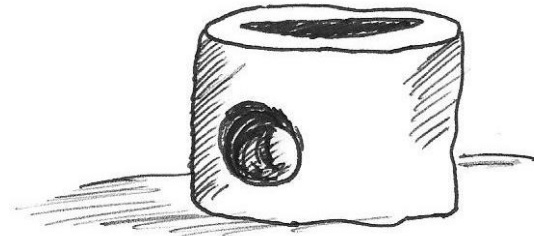


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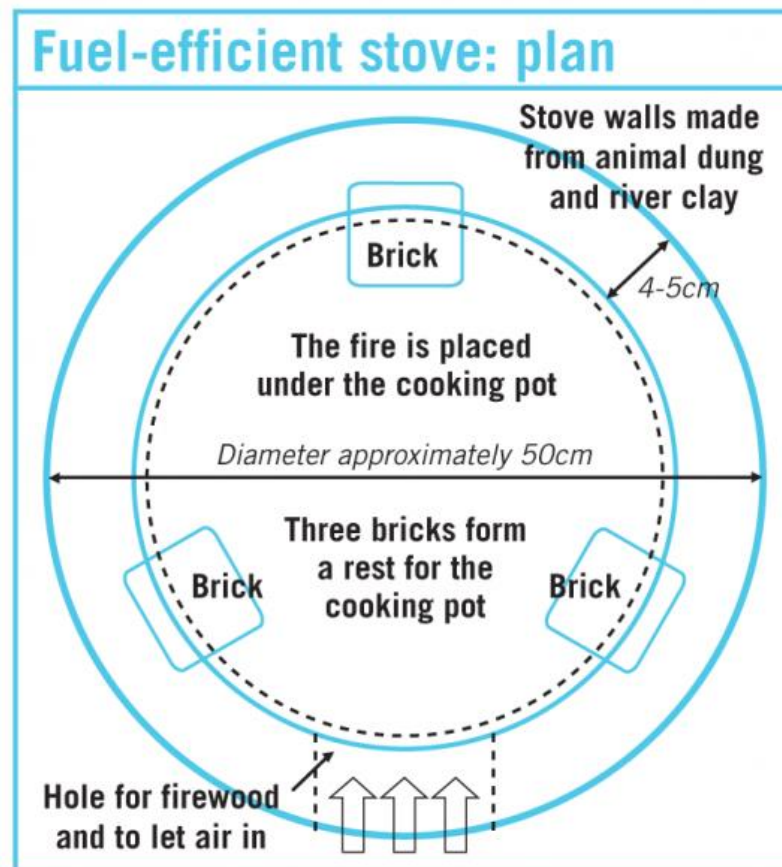
Remove the pot and use a scraper to smooth the surface of the stove.

Cut a hole in the side of the stove (about 8–10 cm diameter) so that air can flow into the stove and wood can be added without having to move the saucepan.



Leave the stove to dry naturally.

Please note: you can also reduce the amount of fuel you use by: using dry wood, pre-soaking beans and using a heavy lid.



Source: Practical Action

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Finding out more

- The Pace Project – see their web pages and resources in the ‘Energy’ section
<http://www.paceproject.net/energy>
- Tearfund (1990) Footsteps 5 – Trees, article on ‘Energy efficient cooking stoves’
http://tilz.tearfund.org/en/resources/publications/footsteps/footsteps_1-10/footsteps_5/energy_efficient_cooking_stoves/
- Tearfund (1994) Footsteps 21 – Technology, article on ‘New ideas for cooking stoves’
http://tilz.tearfund.org/en/resources/publications/footsteps/footsteps_21-30/footsteps_21/new_ideas_for_cooking_stoves/
- Practical Action web pages on improved cooking stoves
- <http://practicalaction.org/improved-cooking-stoves>

Related tools:

- A1 - Revealing environmental degradation: information for facilitators [*A1: Climate & environment-2*]
- A2 – How is our environment changing? [*A2: Climate & environment-5*]
- A2 – Mapping our past, present and future environments [*A2: Climate & environment-6*]
- B – Caring for God’s world (Bible study) [*B: Climate & environment-2*]
- B – Caring for our environment (Bible study) [*B: Climate & environment-3*]
- B – Stewardship of the land (Bible study) [*B: Climate & environment-4*]



Notes

The guidance on how to build an improved stove is based on a tool by Practical Action – <http://practicalaction.org/improved-cooking-stoves>

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