



step by step



MANUAL FOR CONSTRUCTION AND OPERATION OF **MODIFIED COOKING STOVE**

INTRODUCTION



Wasting fire in traditional stoves

Inefficient use of wood and dung for cooking fuel have led to deforestation and serious erosion problems in Tajikistan. Overuse of fuel has also negatively affected agricultural lands. When dung that is normally left to fertilize fields is instead used for fuel, crop yields are significantly smaller.

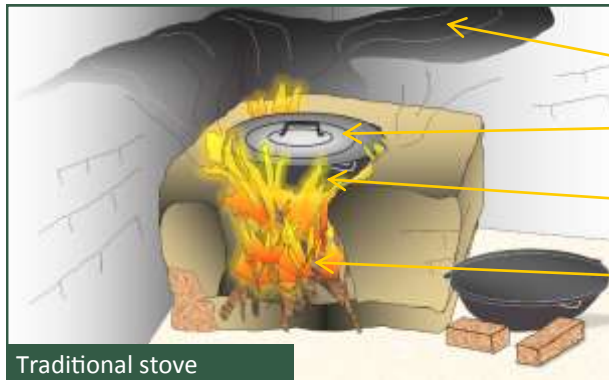
The authors of this manual propose a solution to these risks: the Modified Cooking Stove, greatly reduces the amount of fuel required to cook, thus mitigating the risk of erosion, deforestation, and low-crop yields. The stove presented in this manual is easy to use and requires around 25% less fuel.

1. WHY CHOOSE THE MCS?

This stove can cook meals in an outdoor kitchen and in the backyard.

There are several advantages of using the Modified stove as opposed to a traditional stove:

The stoves traditionally used by the rural population are not efficient and burn excessive amounts of fuel when used for cooking or baking.

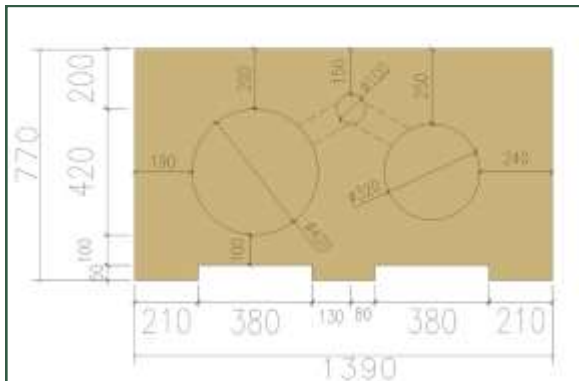


(a) Smoke escapes everywhere (b) Cooks only one pot at a time; (c) Inefficient use of fuel; (d) Most of the heat is wasted and not focused on heating the meal.

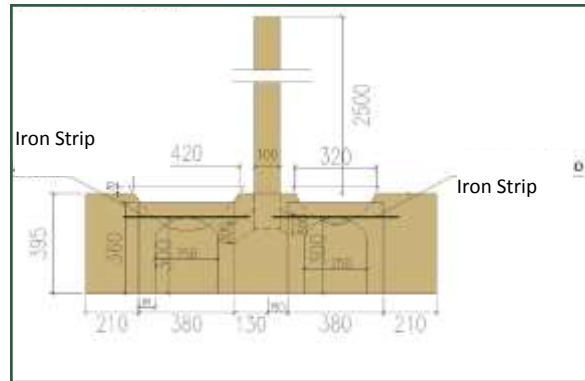


(a) Smoke escapes through the pipe; (b) two pots can cook at the same time; (c) Efficient use of fuel; (d) iron combustion chamber door prevents loss of heat.

2. MEASUREMENT AND DESIGN OF THE MODIFIED COOKING STOVE



***Design of Modified Cooking Stove:
view from above***

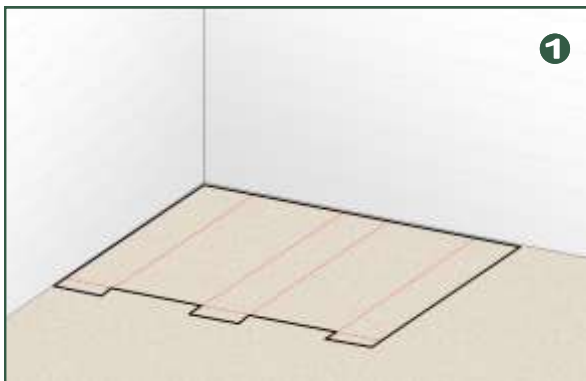


***Design of Modified Cooking Stove:
view from the front***

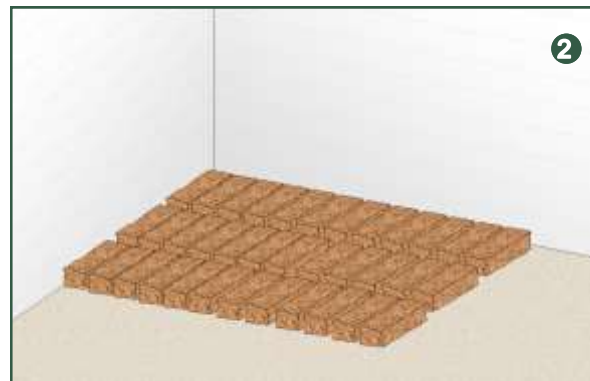
3. STEPS FOR CONSTRUCTION OF MODIFIED COOKING STOVE

The modified stove is constructed using the following steps:

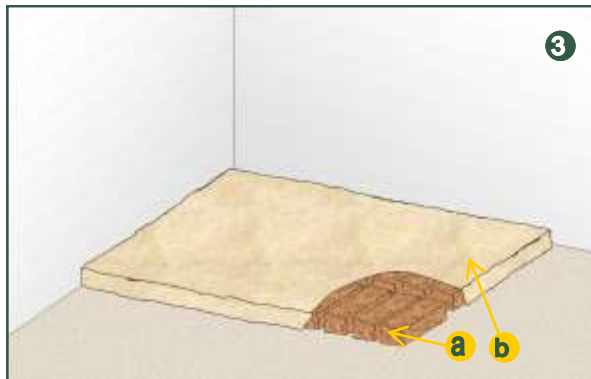
Begin constructing a foundation for the stove. The foundation is especially required in areas with high humidity.



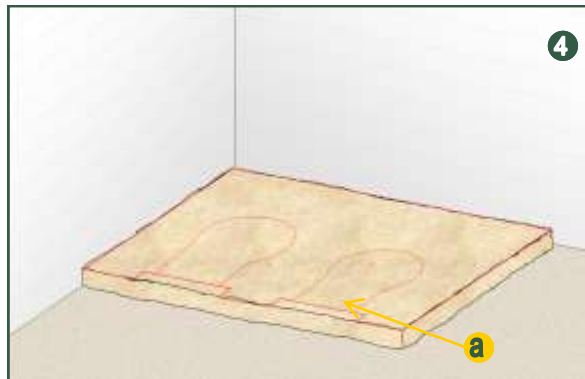
Choose the place in your kitchen where the stove will be installed. Draw an outline of the stove foundation on the ground and take all measurements from that outline.



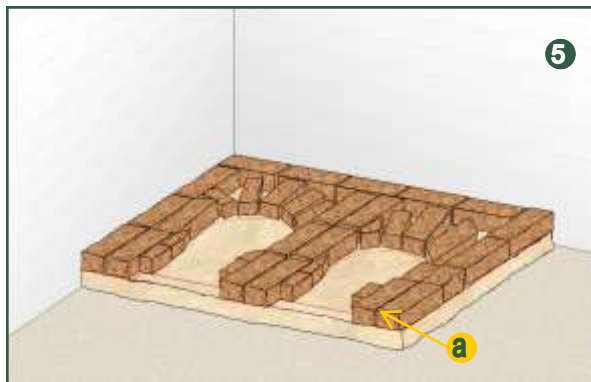
Now, lay the mud bricks on the ground where the foundation outline was drawn, as shown above. Mud bricks are used for this stove.



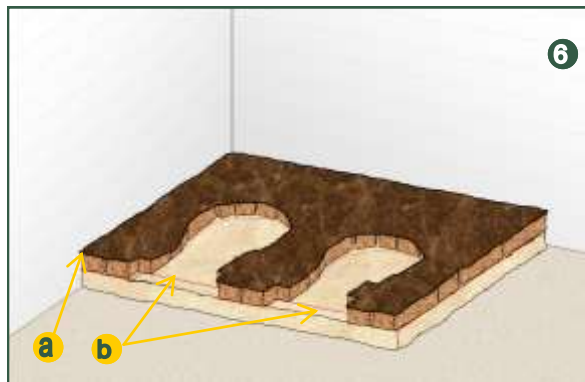
3
Cover the bricks laid on the ground (shown in (a)), with a plaster mixture made of mud and hay (shown in (b)).



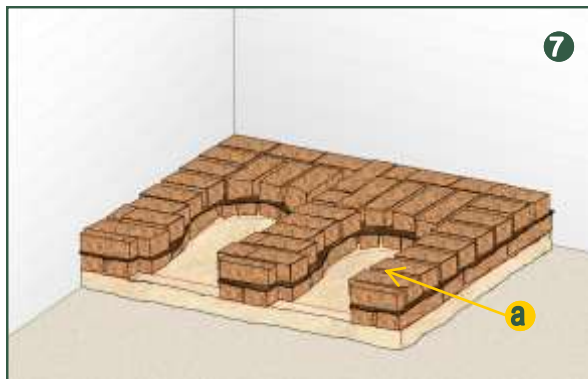
4
On top of the plaster, draw the outline for (a) the stove sides. Then lay the bricks following the outline.



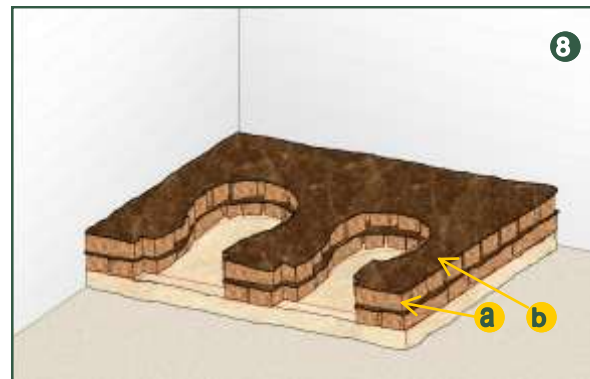
5
Start building the sides of the stove. The first row of bricks should be laid as shown in the above picture(a). You can use mud bricks.



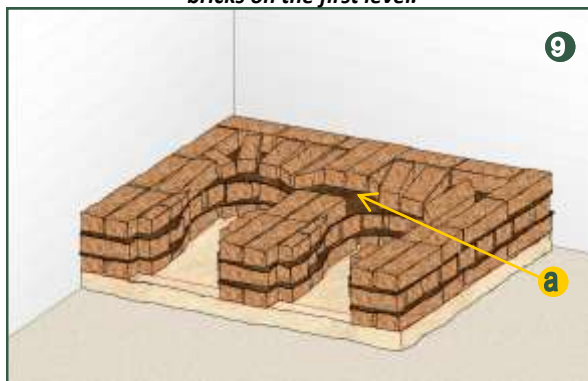
6
Plaster the first row of bricks with clay (a). Before building the walls, leave a place for the stove combustion chamber door (b).



The second row of bricks (a), is laid perpendicular to the first row of bricks. Pay close attention to how the bricks on the second level are laid, making sure that they overlap the bricks on the first level.



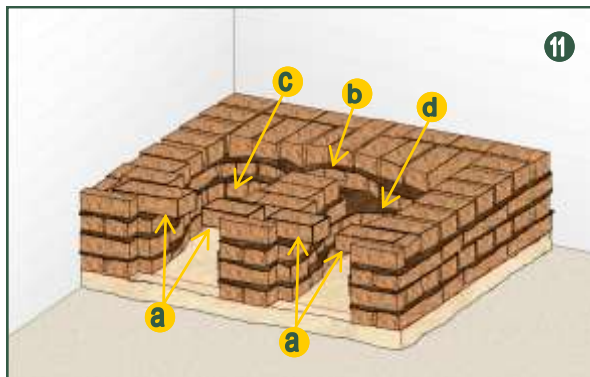
The second row of bricks (a) must also be covered with a mud/hay plaster mix (b), so that the next row of bricks can be glued onto it.



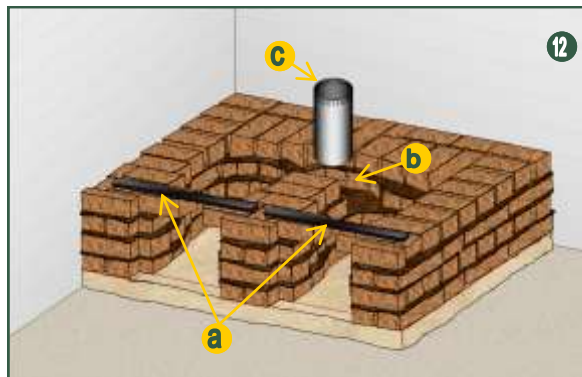
When laying the third row of bricks, leave space for the stovepipe (a).



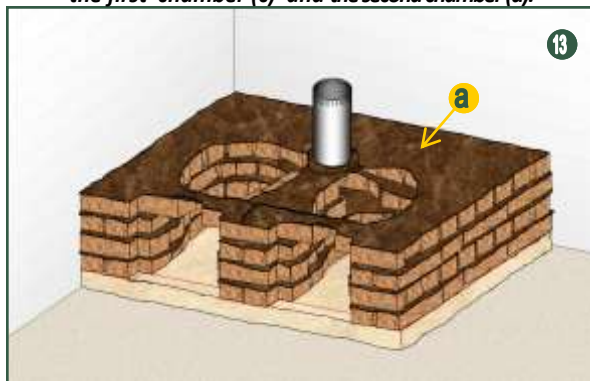
The third row of bricks must also be covered with a mud/clay plaster mix.



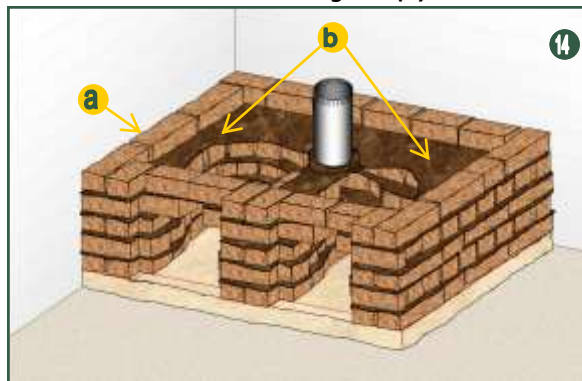
The fourth row of bricks is laid differently. (a) Bricks above the door should be positioned to jut out from the wall. (b) Leave space for the stovepipe. The stovepipe is attached to the first chamber (c) and the second chamber (d).



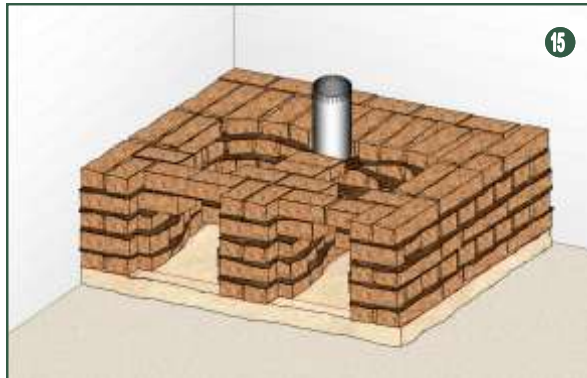
Lay 2 pieces of iron above the combustion chamber doors, (a). Position the stove pipe (b) and cover it with a smoke grate (b)



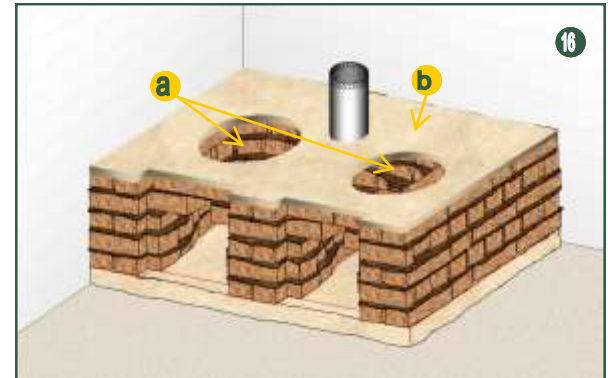
Cover the fourth row of bricks with a mud/hay plaster mix (a). Also, cover the iron strips above the combustion chamber door with plaster.



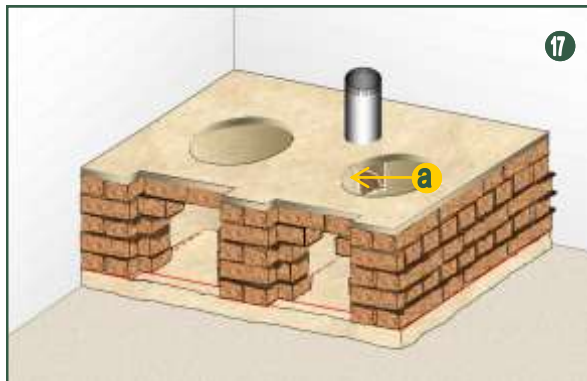
Lay the final row of bricks around the stove perimeter as shown in (a). In this final row, spaces are left for (b) covering the top the stove.



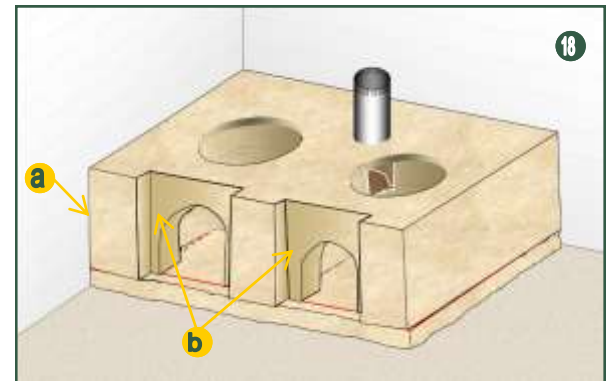
Fill in the spaces with bricks and cover the top of the stove.



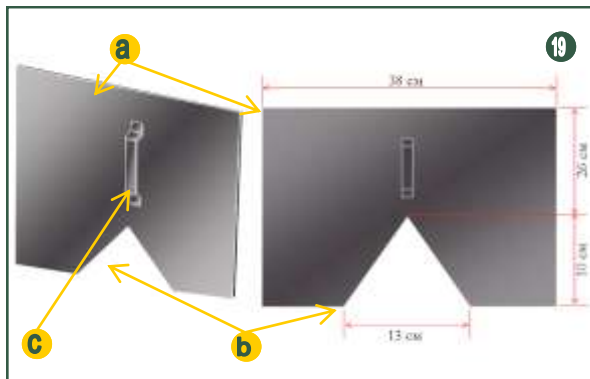
Plaster the stovetop in such a way so that one burner is bigger than the other (for different-sized cooking pots) (a). Use the plaster mix of mud and hay (b).



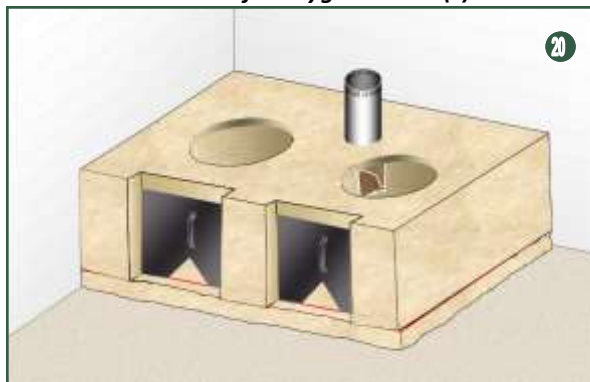
Plaster the inside walls of the stove with a mixture of mud and hay. While plastering, leave holes (a) leading from the combustion chamber to the stovepipe for smoke to escape.



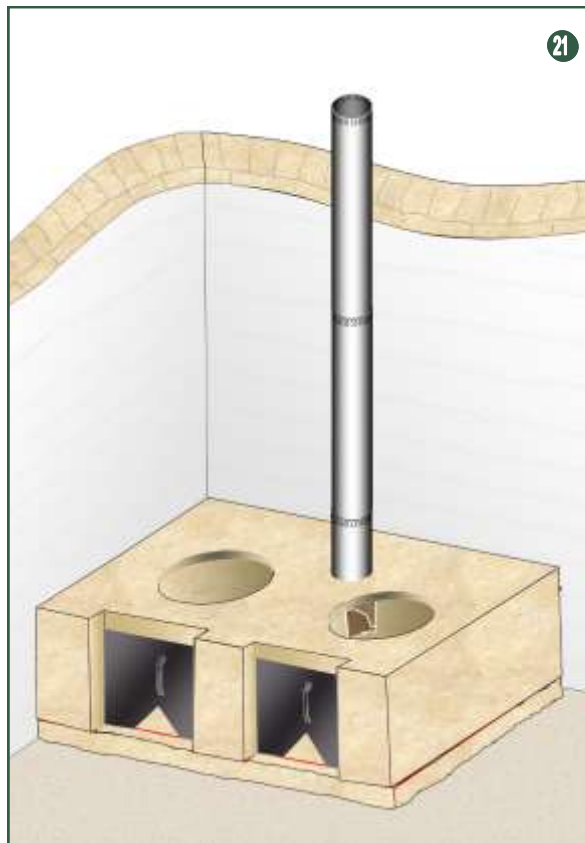
Now, plaster the outside walls of the stove. (a) While plastering around the combustion chamber door, you can plaster in the shape of an arch (b).



The modified cooking stove has two metal doors (a) with knobs (b) which can be made from iron sheet with halls for oxygen intake (c).



Install the metal doors onto the combustion chambers.



For the final step, you may attach an additional length of pipe to the smoke hole of the stove upward though the kitchen roof.

4. OPERATION OF MODIFIED COOKING STOVE

There are no special rules for operating the stove. However, it is important to meet the following requirements:



**(a) Clean the stove from ashes.
(b) Light the fuel.**



**After getting big fire going, (a) close the
stove door**



**Open the doors only when you need to
add more wood.**

5. CONTACT INFORMATION FOR MASTERS AND PROMOTERS

	Ayni district	Ash district
To order the Modified Cooking Stove, please contact:	Mirova Karomat. Address: Rabot village, jamoat Anzob Phone: 92 759 95 72	Jumanov Jigitali. Address: Marhamat village, jamoat Oshoba Phone.: 92 803 48 01
For construction materials, please go to:	Sarvoda Construction Store Address: Sarvoda town, near the hospital.	Uppon village market Address: Upponi Bolo village, ja- moat Oshoba
For more information and consultation, please contact:	Sirojiddinov Asliddin jamoat Fondaryo, Ayni District Phone: 92-764-20-52.	Abdulloev Faizullo, jamoat Oshoba, Asht district Phone: 92-727-06-51.

For notes:



European Union



French Development Agency



Women in Europe for a Common Future



German cooperation



Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ) GmbH



UKAID



Abbé Pierre Foundation



Groupe Energies Renouvelables, Environnement et Solidarités



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