

## The Improved Firewood Stoves

The improved firewood stoves have been designed in order to burn firewood more effectively. This has been achieved by use of a rocket elbow combustion chamber fitted with a firewood shelf. Thermal insulation has been built around the combustion chamber and hot flue gas passage.

### ADVANTAGES

- ❖ Firewood fuel savings
- ❖ Almost smokeless operation
- ❖ Easy to operate
- ❖ Affordable
- ❖ Safe to use
- ❖ Environmentally friendly

#### 1 Firewood Fuel Savings

The stoves have been tested and proven to be economical in firewood consumption, with the efficiency averaging 30% compared to the traditional (open) 3-stone fireplace at 15%.

#### 2 Almost Smokeless Operation

The stoves hardly produce smoke during their operation. A bit of smoke is produced only when lighting the fire.

#### 3 Easy to Operate

Once lit, the stove fire does *not* stop unless firewood feed into the stove is stopped. There is *no need* of straining one's lungs to blow air into the stove to fan the flame as it is with the Traditional (open) 3-stone fire. This is done by the air chamber below the feeding shelf.

#### 4 Affordable

The stoves are constructed using locally available materials including anthill soil and sand for the body whereas vermiculite, sawdust, pumice, etc are used for thermal insulation.

#### 5 Safe to Use

The stoves are safe-to-use domestic appliances. Firewood is neither toxic nor highly inflammable. The shielded fire is screened (out of reach) and therefore less likely to cause burns to children and the user.

#### 6 Environmentally Friendly

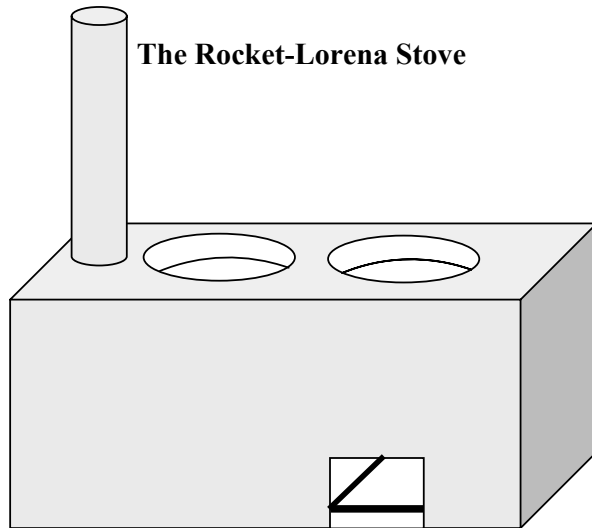
The stoves use less firewood leading to reduction of the deforestation rate. The stoves are less pollutant because of their nearly smokeless operation, attributed to the

shelf-fitted rocket elbow combustion chamber, which improves the air:fuel ratio.

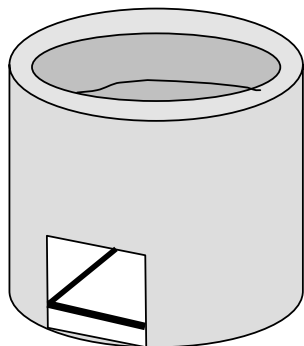
### EFFICIENT COOKING PRACTICES

- ❑ Always use dry firewood split into thin pieces. Wet firewood loses its heat value in driving off excess water. It also produces a lot of polluting smoke.
- ❑ Always use a saucepan lid to cover food when cooking. This creates cooking pressure leading to faster softening of food and saving fuel.
- ❑ Cut the food into smaller pieces. The technique reduces the amount of energy required to cook.
- ❑ Soak the dry-preserved foods (beans, peas, etc) for at least 5 hours, before starting to cook. This cuts down the amount of energy to cook such kind of food.
- ❑ Avoid filling too much water in the saucepan. It takes a lot of energy to boil it, hence fuel wastage.
- ❑ Light the fire after preparing the food for cooking.

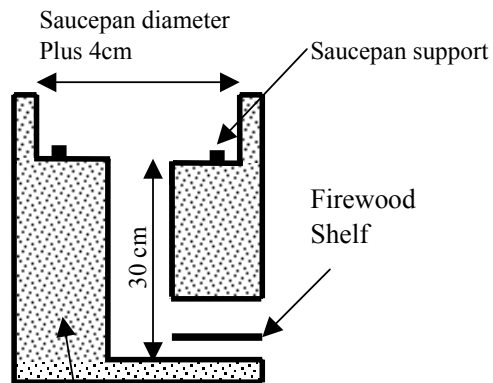
## Improved Firewood Stoves



**Shielded 3-Stone Stove**



Both stoves use the rocket elbow combustion chamber illustrated below, for improved combustion efficiency, which results into an almost smokeless operation. The thermal insulation minimizes heat losses.



Thermal Insulation  
(E.g. Vermiculite, Pumice, Sawdust etc)

## MINISTRY OF ENERGY AND MINERAL DEVELOPMENT



The Republic of Uganda

## ENERGY ADVISORY PROJECT



## USE AN IMPROVED STOVE TO SAVE ENERGY AND THE ENVIRONMENT

November 2003

With the Support of the German Technical Cooperation



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