

## ANNEX X: Description of Kenyan ICS

### Jiko Kisasa - Kuni mbili

<b>Name:</b>	Kuni mbili (Kenya)
<b>Type:</b>	Portable, metal clad liner
<b>Fuel:</b>	Fuel wood
<b>Users:</b>	Urban, rural and peri-urban households



#### General description

Ceramic liner which is metal clad with the following properties:

- one pothole
- single fuel feed door
- accommodates different pot sizes
- circular shape of 16 cm height and 25 cm top internal diameter
- metal cladding on the outside

#### Materials used:

Fired clay product clad with sheet steel. The stove is assembled using vermiculite, lime and cement as binding materials.

It has a lifespan of 3 years

#### Production:

Ceramic liners are produced in established production centres. The ceramic liners are bought by metal smiths who put a metal cladding around the liner. Sometimes this is done by ceramic liner producer. Once a client buys this stove it is not built in, and can be used directly.

#### Efficiency:

The stove has an efficiency of 40% if used properly; using dry firewood is one of the most important factors

#### Prices:

The prices vary from Ksh. 450 – 800 depending on the location and the metal used in cladding (2009).

#### Source of pictures:

GTZ – Promotion of Private Sector Development in Agriculture  
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## Jiko Kisasa - one /two pots

<b>Names:</b>	Jiko Kisasa (Kenya)
<b>Type:</b>	Inbuilt one or two fixed liners
<b>Fuel:</b>	Fuel wood
<b>Users:</b>	rural and peri-urban households

### General description

Fixed, inbuilt stove with

- one or two pots potholes
- single fuel feed for each pot
- independent firewood chamber for each pot
- accommodates different pot sizes
- circular shape of 16 cm height and 25 cm top internal diameter

### Materials used:

The Jiko kisasa is mainly a fired clay product. It has a lifespan of 3 years

### Production:

Ceramic liners are produced in established production centres. The ceramic liners are bought by marketing groups or installers. These are sold to potential clients. The ceramic liners require a trained stove installer to fix the stove in the kitchen.

### Efficiency

The stove has an efficiency of 40% if used properly. It is very important to use dry firewood.

### Prices:

The price for the ceramic liner varies between Ksh. 100 – 250. An extra Ksh. 50 – 250 is required as installation fee for each unit if it has to be fixed in the kitchen (2009).



**Jiko kisasa one pot**



**Jiko kisasa two pots**

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## Rocket stove - one /two pots

<b>Names:</b>	Rocket stove (Kenya)
<b>Type:</b>	Inbuilt one or two pot stove
<b>Fuel:</b>	Fuel wood
<b>Users :</b>	Rural and peri-urban households

### General description

Fixed, inbuilt stove with

- One or two pots potholes
- Single fuel feed for each pot
- Independent firewood chamber for each pot
- Different pot sizes can be accommodated
- Circular shape of 16 cm height and 25 cm top internal diameter

### Materials used:

The Rocket stove can be built with either good clay soil or fired clay soil bricks with a lifespan of 5 years. It could be more especially for the brick stove.

### Stove Construction:

Rocket stove construction requires a technically trained stove builder. The client acquires all the necessary construction materials and the stove is built in the kitchen on a selected site.

### Efficiency:

The stove has an efficiency of 50% - 60% if used properly. This includes using dry firewood as one of the most important factors.

### Prices:

The price for the rocket stove varies between Ksh. 300 – 10,000 depending on the type of material used and the size of the stove (big size for institutional stove) but negotiable.



**Rocket stove one pot**

### Rocket stove two pots



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## Institutional Rocket Stove

<b>Names:</b>	Institutional Rocket Stove (Kenya)
<b>Type:</b>	Inbuilt one or two pot stove
<b>Fuel:</b>	Fuel wood
<b>Users:</b>	Rural and peri-urban households

### General description

Fixed, inbuilt stove with

- one or two pot holes
- single fuel feed door for each pot
- independent firewood chamber for each pot
- the size of the stove needs to be built to take the pot sizes required

### Materials used:

Institutional rocket stoves are made using clay-fired bricks, cement, sand, and fire cement, and the shelf for feeding in firewood is made of steel. Alternatively, fired clay bricks with good clay soil as a mortar can be used, but this will require frequent maintenance. For large quantities of food, a metal ring is placed at the neck of the stove to help support the weight of the food being cooked.

### Production:

Institutional rocket stoves are constructed by trained technicians, mostly working individually.

### Efficiency:

The stove has an efficiency of 70% if used properly. It is very important to use dry firewood.

### Prices:

The price for the ceramic liner is between Ksh. 25,000 – 180,000. This depends on the size of the stove, and the materials used in its construction. It often includes provision for a suitable cooking pot and a lid (2009).



Institution Rocket Stove



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# Firewood Baking Oven

**Names:** Firewood baking oven (Kenya)

**Type:** Double chamber

**Fuel:** Fuel wood

**Users:** Rural and peri-urban households

## General description

Firewood baking oven using rocket principle in the fire chamber

- capacity for 120 loaves
- single fuel feed door
- baking period 45 minutes per batch
- the baking oven is a fixed structure, it must be built in the shade, and away from rain.

## Materials used:

The baking oven is mainly made of fired clay bricks, sand, cement, pumice, and made from stainless steel metal.

It has an estimated lifespan of 10 years, with yearly maintenance to clean the soot around the baking chamber.

## Production:

The baking ovens are constructed by trained technicians on site.

## Efficiency:

The baking oven has an efficiency of 70% if used properly. Using dry firewood is essential.

## Prices:

The price for the baking oven is between Ksh. 180,000 – 220,000 including labour, depending on the quality of the materials used (2009).



**The firewood baking oven**



**The baking chamber**



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## Soil Sterilizer

<b>Names:</b>	Soil sterilizer (Kenya)
<b>Type:</b>	Passion fruit soil sterilizer
<b>Fuel:</b>	Fuel wood
<b>Users:</b>	Rural and peri-urban households

### Prices:

The price for the construction of the sterilizer is Ksh. 25,000 per single unit, including labour (2009).

### General description

This is a fixed rocket stove, on which a 200 litre drum is placed, half full of water. The tank is connected by a galvanised iron pipe to another drum of the same size set behind it. The second drum holds the soil to be sterilized. The water boils to create water vapour. For 4.5 hours, the vapour goes through the pipe and passes through the soil to be sterilized, after which the vapour comes out at the top of the tank behind. This process helps to kill all the diseases and weeds from the soil used in the nurseries to raise passion fruits seedlings.

### Materials used:

The stove is made of fired clay bricks, sand, cement and lime, and metal drums are used for holding the water and the soil.

### Production:

The sterilizers are constructed by trained stove technicians, working on a purely commercial basis.

### Efficiency:

The sterilizer has an efficiency of 70% compared to the traditional way of sterilizing the soil where a three-stone fire is used.



**Sterilizer (multiple installation)**

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## Cooking basket

**Names:** Fireless cooker (Kenya)  
**Fuel:** No Fuel  
**Users :** rural, peri - urban and urban households

The price for the fireless cooker varies between Ksh. 600 – 2000. This price variation depends on the size of the fireless cookers. The bigger the basket, the higher the price (2009).

### General description

This is a cooking basket, which is insulated to help maintain the temperature of the food so that the cooking process can continue over time, using the heat contained in the food itself when placed in the basket.

The cooking process starts on a normal fire and once the food is boiling, it is moved to the basket in the shortest time possible, while making sure that the pot is properly covered to keep the heat inside the food.

- Temperature drops gradually over eight hours
- Can be made out of a basket or a carton or box
- Insulation material can be any sort of insulating material (eg straw, old clothes etc.)
- Can be made in different sizes

### Materials used:

The fireless cooker is made of basket (box), insulation materials, covered in polythene sheet to prevent the insulation material getting wet, then followed by a nice looking piece of cloth material which is sewn in while creating space for the pot.

### Production:

Fireless cookers are produced by trained women groups and individuals, all of them doing this as a business.

### Efficiency:

The fireless cooker has an efficiency of 40% - 90% depending on the type of food being cooked. The highest saving is gained when cooking the hard grains such as maize and beans.

### Prices:



Fireless cooker



Fireless cookers

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