

The Ceramic Jiko Stove

In Kenya, many households, especially in urban areas, use a metal charcoal stove for cooking which is called a jiko stove. Recently researchers at KENGO (Kenya Energy and Environment Organizations) developed a new ceramic model of the jiko stove that uses less fuel and therefore helps to reduce deforestation.

The new stove, called the ceramic jiko, uses half the fuel that the older jiko stove uses. It is lightweight - it only weighs 3.6 kilograms - and it is easy to carry around. It reduces the cost of fuel and decreases cooking time so it is ideal for families that don't have much money and are busy with other activities. Water boils faster and longer using the improved jiko. Because of its shape, the stove's heat is directed right under the cooking pot.

The ceramic jiko lasts about 30 months with lots of use, longer than the metal jiko. The outside casing is made of metal and is produced by local craftspeople. The ceramic inner lining is produced by large and small enterprises, including several women's groups.

Since the new stove costs slightly more than the old one, there is a need to educate people about the savings in fuel costs. The cost of the jiko can be recovered in two to three months because of the savings in fuel costs. With 70,000 of these new improved jikos in active use it is estimated that 206,000 tonnes of wood and 570,000 hectares of forests are saved every year in Kenya.

Because the ceramic jiko was so successful in homes, researchers developed an improved institutional stove for rural hospitals, clinics, schools, and prisons. These institutions traditionally use fuelwood and charcoal for cooking, adding to the country's fuelwood crisis.

The institutional ceramic jiko is similar to the domestic jiko, with a metal outer shell and a ceramic or vermiculite inner lining. It measures 30 to 50 cm in diameter and can last for up to five years. Fuelwood savings can reach fifty per cent. The stove reduces cooking time and releases fewer gases than other types of institutional stoves. As well, a water jacket can be added to the stove to heat the water and prevent heat loss from the metal sides of the stove so it can be handled even while in use.

Potential users

The domestic ceramic jiko can be used by rural and urban low income families. The institutional ceramic jiko can be used in hospitals, schools, prisons, and any institutions that use fuelwood or charcoal for cooking.

Cost and availability

The trade name of the new domestic jiko is Kimathi Jiko, and it sells for 55 to 75 Kenyan shillings, or U.S. \$2 to \$3. The institutional stove sells for 25,000 to 30,000 Kenyan shillings, or close to U.S. \$1,000. The institutional stove is designed to cook for at least 100 people, using 50 litre or larger cooking pans.

Suppliers of the household jiko stoves include:

Program Officer, Wambugu (Central Highlands)
P.O. Box 5069,
Nyere, Kenya
Jerri International,
P.O. Box 52747,
Nairobi, Kenya

Suppliers of the institutional jiko stoves include:

Bellerive Foundation
Ngog Road, P.O. Box 42994, Nairobi, Kenya
Tel. : 25.2.720 274; Fax: 254.2.726 547
Charles Gitundu, Rural Technology Enterprises,
P.O. Box 28201, Nairobi, Kenya
Tel.: 796352

Further information

- Kenya Energy and Environment Organisations (KENGO) P.O. Box 48197, Nairobi, Kenya
- *Wood Energy in Kenyan Institutions*, A Summary of Research Findings, 1988, 14 pages, KENGO Wood Energy Series, KENGO.

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In Kenya, 80% of urban and 10% of rural families use the traditional metal "jiko" charcoal stove for cooking. The remaining rural households use firewood on a three-stone fireplace. Wood is the main **energy** source for cooking, light, and heat in many East African countries (80% in Kenya, 96% in Tanzania, 90% in Uganda). To help address the deepening deforestation crisis, researchers at KENGO (Kenya **Energy** and Environment Organisations) have developed a more **energy** efficient jiko.

The new stove uses up to 50% less fuel and is light (3-6 kg) and portable. Ideal for low-income families, it reduces the cost of fuel while decreasing cooking time. For example, water can be brought to a boil faster and for a longer period using the improved jiko. Because of its shape, the stove's heat is directed only to the desired location, right under the cooking pot.

The ceramic jiko lasts approximately 30 months with intensive use, longer than the traditional jiko. The outside casing is made of metal and produced by local crafts-people. The ceramic inner lining is produced by large and small enterprises, including several women's groups.

Since the new stove costs slightly more than the traditional version, there is a need for educating people on the savings in fuel costs. The cost of the jiko can be recovered in fuel savings in 2-3 months. Savings to the country's forests have been estimated at 206 000 tonnes of wood or 570.000 hectares of trees per year, with some 70 000 improved jikos in active use.

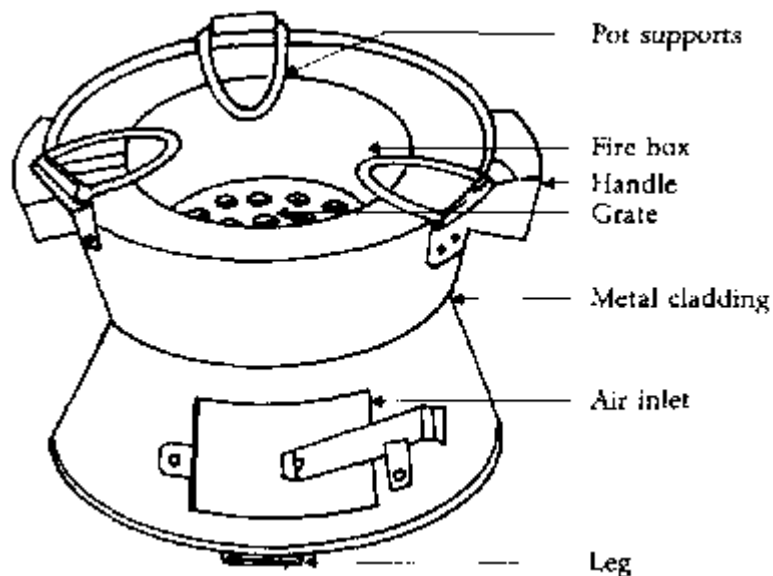
Aside from KENGO, several NGOs, including CARE (Kenya), have worked with women's and community groups on the production, demonstration and dissemination of the stoves.

With the success of the domestic ceramic jiko, researchers have developed an improved institutional stove for rural hospitals, clinics, schools, and prisons. These institutions traditionally use fuelwood and charcoal as their main **energy** sources, and thus contribute to the country's fuelwood crisis. Increased costs of fuel put a major strain on their resources.

The institutional ceramic jiko is based on the same model as the domestic jiko, with a metal outer shell and a ceramic or vermiculite inner lining. It measures 30 to 50 cm in diameter and can last for up to 5 years. Fuelwood savings can reach 50%. Cooking time is reduced and there is less gas emission than with other types of institutional stoves. As well, a water jacket can be added to the stove to warm water and prevent heat loss from the metal sides of the stove, allowing it to be handled even while in use.

Prerequisites

The use of the stove requires access to fuelwood or charcoal. Production of the stoves requires ceramic material and scrap metal. Training has been provided by KENGO to other regional NGOs in the manufacture of the new jiko. Quality control is an important factor in maintaining the improved efficiency of the stove.



Stoves requires ceramic material and scrap metal

Potential users

Domestic ceramic jiko: rural and urban low-income families.

Institutional ceramic jiko: hospitals, schools, prisons, and any institutions that use fuelwood or charcoal as their main **energy** source.

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Suppliers of the stoves include:

Domestic jiko:

- Program Officer, Wambugu (Central Highlands), PO Box 5069, Nyere, Kenya
- Mr Richard Kimani, Jerri International, PO Box 52747, Nairobi, Kenya

Institutional stoves:

- Mr C.J. Davey, Bellerive Foundation, Ngong Road, PO Box 42994, Nairobi, Kenya Tel.: 254.2.720 274; Fax: 254.2.726 547
- Charles Gitundu, Rural Technology Enterprises, PO Box 28201, Nairobi, Kenya, Tel.: 796352

Contact Kenya **Energy** and Environment Organisations PO Box 48197, Nairobi, Kenya

Resources and publications

- Wood **Energy** in Kenyan Institutions, A Summary of Research Findings, KENGO Wood **Energy** Series, 1988, 14 pp.