KASAMA KASISI REPORT 2009

Traditional charcoal kiln at work in Zambia

One ton of dry wood gives 250kg charcoal. The rest, mostly combustible gases, is lost energy and smoke.

Charcoal in Zambia

Those six 50kg bags of charcoal could be 24 bags of wood-chips.

One kg of woodchips in a Peko Pe (TLUD/ND – Top Lift Up Draft/Natural draft) will do almost the same as one kg of charcoal in a common locally made charcoal stove.

Traditional charcoal stoves “Bawula”

Another 50 – 75 % of the energy is lost in inefficient locally made charcoal-stoves.

Improved TLUD / ND biomass cooking stove

The Peko Pe operating in the burning phase. A minimum of energy is lost to the environment.

Local knowledge

Local tinsmiths have the knowledge, the tools and the materials.
Just need templates to make a suitable Peko Pe.

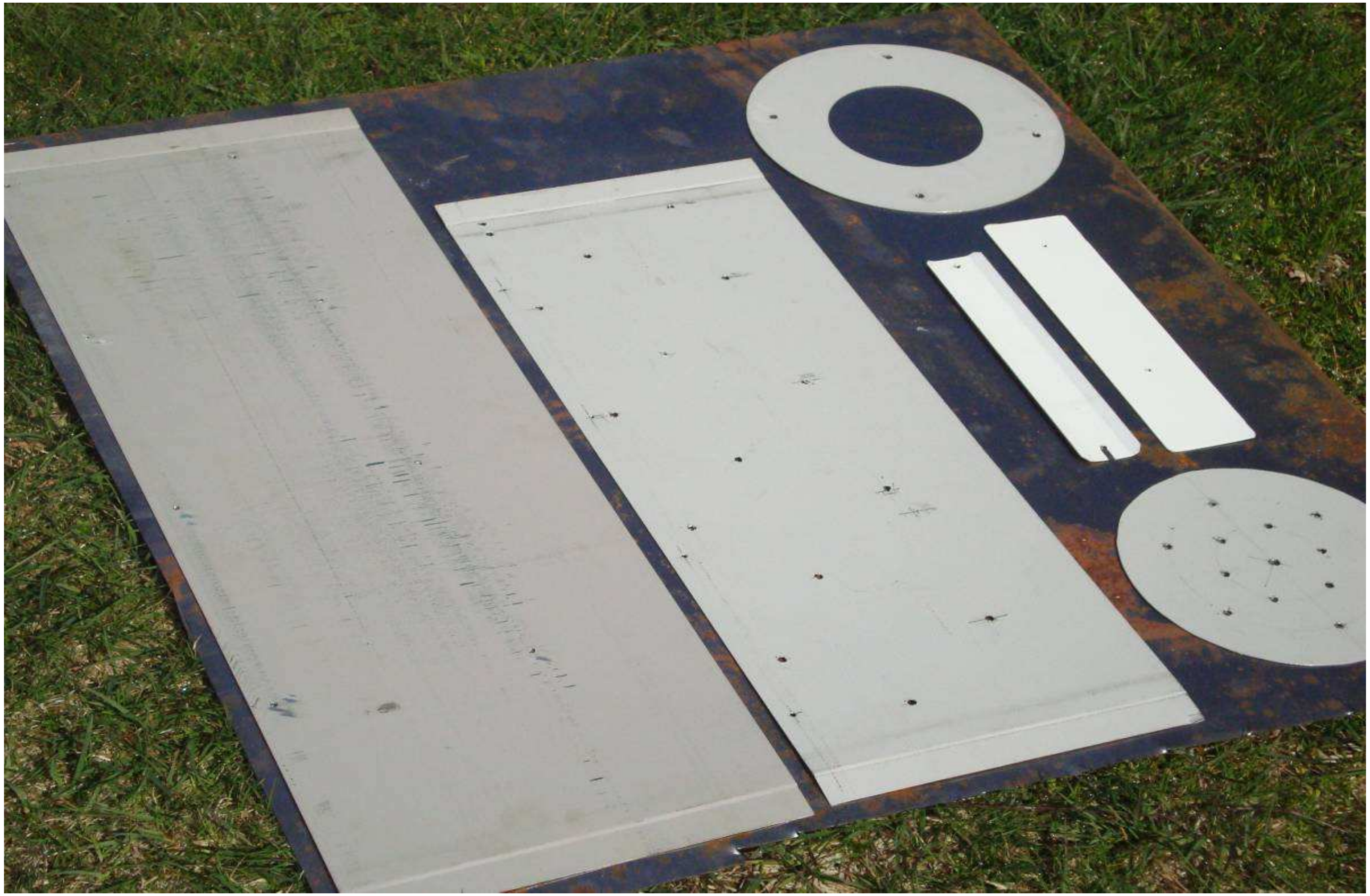
Locally made

The first Peko Pe made by local tinsmiths in Kasama, 2009

Kasisi Agriculture Training Centre, Lusaka, Zambia

The first Peko Pe made at Kasisi by local entrepenurs

Templates of the Peko Pe stove (TLUD / ND)



Templates for TLUD / ND Energy Unit or the Peko Pe stove.

Seedlings for Energy Forest

400 seedlings will after one to two years give enough fuel for a household and half of it can be sold.

Agro-Forestry / Energy Forest

Agro-Forestry trees like Sesbania Sesban will give leaves for animal fodder and branches as fuel-wood. The nitrogen-fixing roots nutriment to the soil.

Energy Forest will give 10 to 15 ton per ha / year.

Indigenous Miombo forest will give about 3 ton of wood per ha.

Traditional Three Stone Fire

Traditional three (3) stone fireplace can solve some problems, but not the health and environmental issues as soot and smoke at the kitchen stand. Like using other open stoves, energy is lost to the environment.

Permanent cooking stand

A cooking stand for two Peko Pe Units under construction.

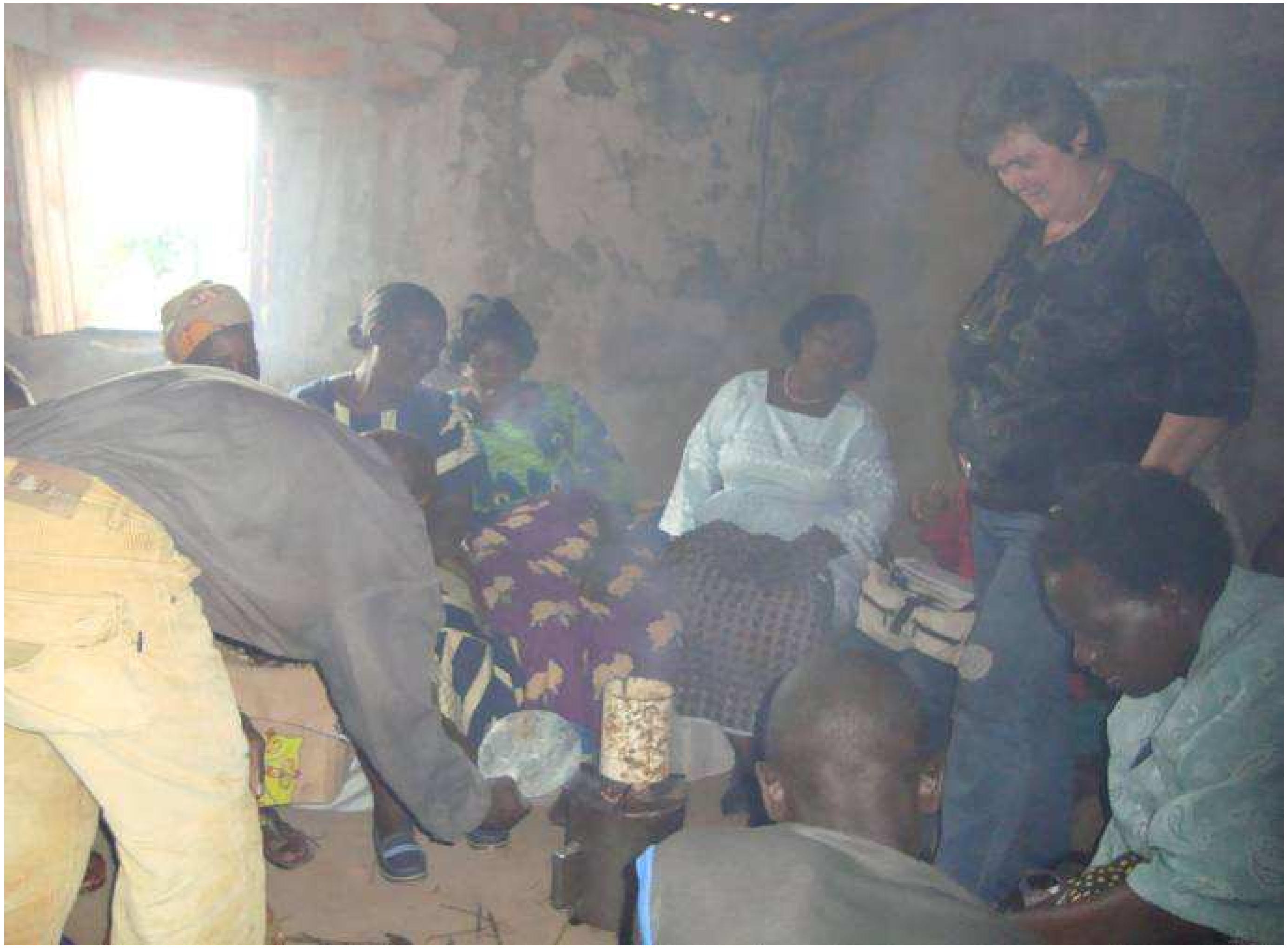
Institutional kitchen

Bakery oven and big saucepan cooker (under construction) at Kasisi 2009.

Some training needed

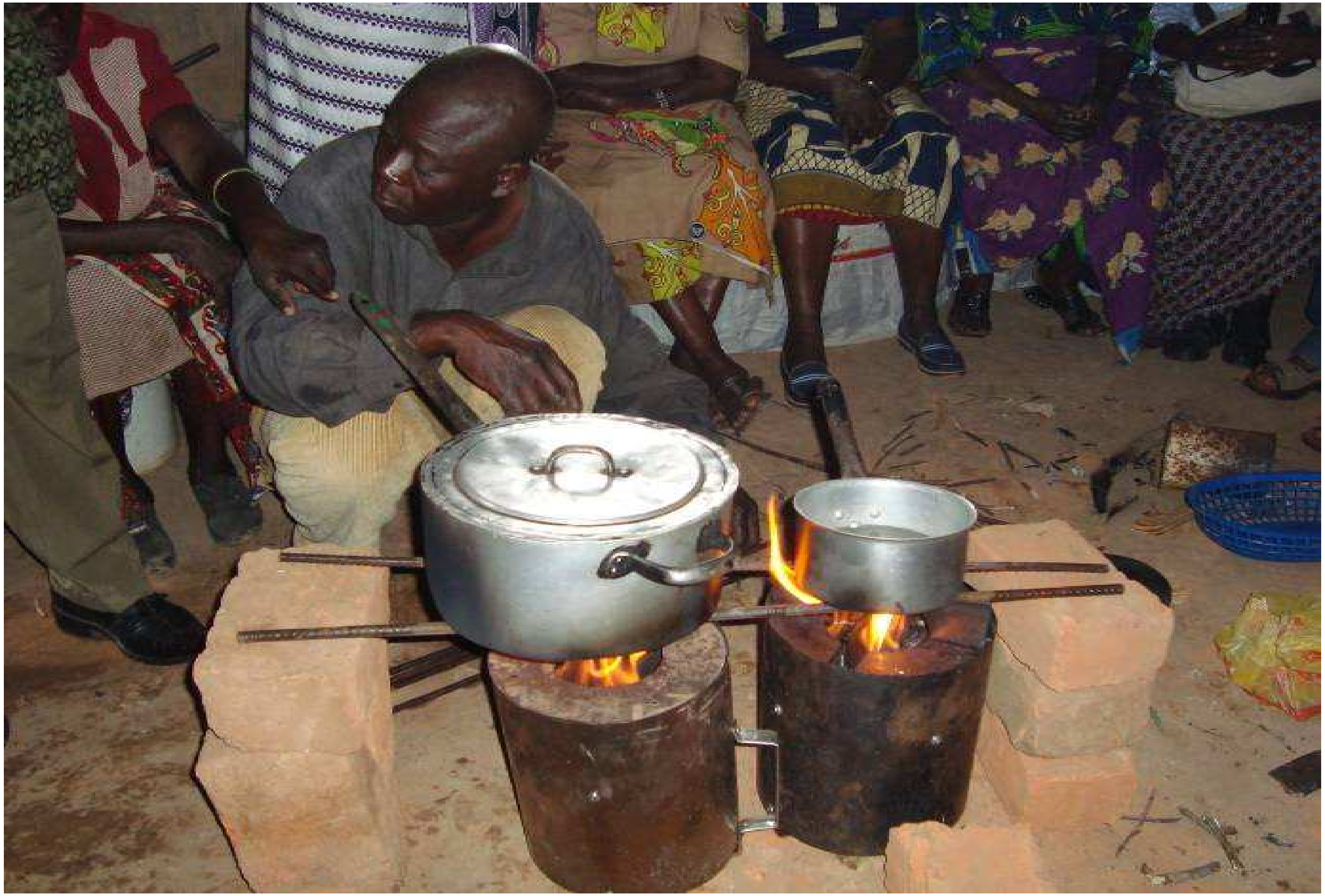
When the fuel of dry biomass is correctly arranged the Peko Pe stove will work without smoke and soot.

Demonstration and training



Somebody has to know when something goes wrong under demonstration and training.

Flexible Energy Unit



Improvised cooking stand to show the flexibility of the TLUD / ND system.

Local knowledge local produce

The future craftsmen under training by skilled tinsmiths making Peko Pe stoves, Mbala 2009.

“Mobile workshop”

No lack of interest by the demonstration at Mbala market.

Dry biomass household fuel from wood

Local resources of alternative Household Fuel, Kasama sawmill 2009.

Dry biomass household fuel from grass

Alternative Household Energy out of dry biomass. Mbala 2007

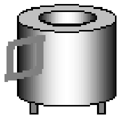
Practice and learning

“The simplest solution is always the best solution”.

Author and innovative entrepreneur:

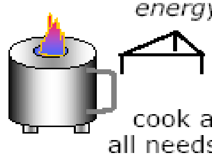
The PekoPe Stove – by Paal Wendelbo

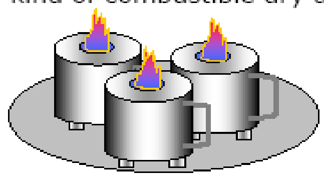
The Peko Pe stove was developed around 1990, and first utilized in Adjumani North of Uganda in a refugee camp in 1995 using bundles of straw and papyrus as fuel. There the stove was given the name Peko Pe, which means in the language of the *Acholi* tribe approach to "*no problem*". The reason, the women did not need to go into the forest to collect firewood, which was dangerous those days. With one kg of straw one could easy make a meal for a small household. There was no smoke and little soot.



Afterwards the stove was modified and is now burning with a clear blue yellow flame at about 700°C with almost all types of dry combustible biomass and with no smoke, no soot and no dangerous gases.

The stove also called *the energy unit* is the heart of the the **Multifuel Combustion System**, MFCS. With one unit you can prepare a small meal, with two units make it more convenient to cook and with three or more units you will cower all needs of energy at the household and institutional kitchens sector. It is a flexible simple system. It can be used for baking, frying, grilling, wok, smoking fish, heating air and water-heating, takeaway food business and which will cover all needs of energy at the sector. The fuel can be all kind of combustible dry adapted biomass.

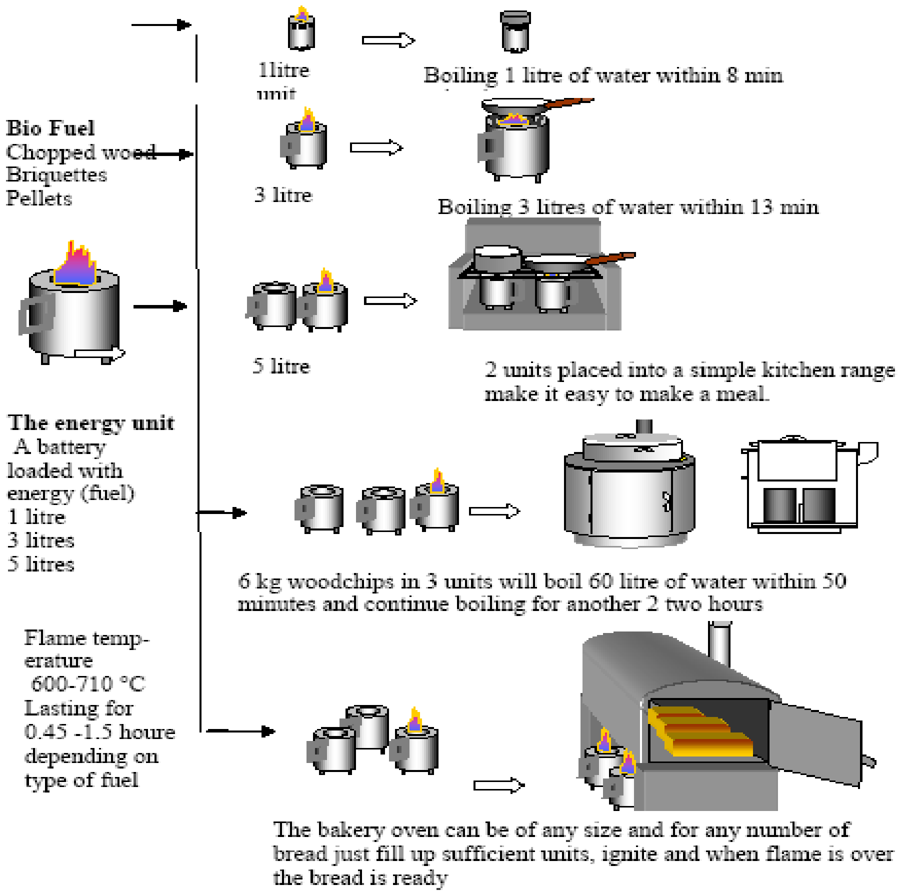




The design of the energy unit is based on simple combustion principals, which has to be followed strict to avoid smoke and soot. More or less the stove is a micro charcoal kiln, which utilize the combustible gases, which normally disappear in the process in a traditional common charcoal kiln.

"The simplest solution is always the best solution"

The TLUD/ND/Peko Pe
Multi Fuel Combustion System



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