SADC Programme for Biomass Energy Conservation in Southern Africa

Institutional Stoves

based on the Rocket Stove principle

Malawi experience
Programme for Biomass Energy Conservation in Southern Africa: Institutional stoves in Malawi
Baseline situation

Wasteful use of firewood in institutions in Malawi
Benefits of the Rocket stove

Firewood needed to cook 100 l of Maize Pap (nsima)

170 kg on the open fire

14 kg with the new rocket stove
Other benefits of the Rocket stove

- Less smoke: less coughing and burning eyes
- Less danger for the cook to get burnt
- Less burning and waste of food
- Better quality of food

‚Nsima‘ prepared out of the same flour:

traditional fire < > new stove
... more benefits of the Rocket stove

... compared to other improved stoves like the Bellerive stove (right):

- **For the user: Convenience**
  - No need to cut wood
  - Less time needed to prepare wood
  - No chimney to sweep, less maintenance
  - Less smoke even without a chimney
- **For the owner: Economy**
  - Less expensive to buy
  - No chimney to be passed through the wall or the roof

The draft system of the 'bellerive' type of stove is designed to work with a CLOSED door to function well.
Reality: it is used with long and uncut pieces of wood with the door open.
"Marketing chain‘ demystified means to answer these questions:

➢ Who is involved to turn raw materials into a sellable product?
➢ Who is involved to make the product reach the user?

In other words: How can we ensure that we get ...

... the right stove ...
... to the target users ...
... in the right quantity, quality and price ...
... in the right place ...
... at the right time ...
... so that everybody involved gets a fair profit
... The right stove....

1 USD  8 USD  15 USD  20 USD  30 USD

50 USD  80 USD  50-100 USD  200 USD  300 USD
... to the target users....

′WFP‘- model special design for the needs of the first big customer
- Sized for a 110-l-half-drum
- Must be mobile, as WFP distributes the stoves to the schools
- Cheaper design with a lower skirt, for one metal sheet to yield two stoves, target price ca. 200 USD

Today: average surtax free-prices, without pot
retail: 25,000 – 28,000 MK (ca. 180 - 200 USD)
wholesale: 23,000 – 25,000 MK (ca. 165 - 180 USD)

- Over 2,200 institutional stoves sold all over Malawi
  Thereof about 1,400 WFP-models bought by donors supporting school-feeding programmes (WFP, UNICEF, Mary’s Meals, GTZ Basic Education programme),
  rest to other institutions like prisons, hospitals, private schools, orphanages, restaurants, company kitchens etc.
Branding: Logo development

- The name ‘rocket stove’ was inherited and stands worldwide for the rocket design principles developed at Aprovecho Institute, there was no indigenous name yet when we developed the logo.
- In a quick survey the three flames were recognised, associated with the project and linked to high quality.
- Logo simulating the L-shape of a rocket stove fire chamber.
- First letter could stand on its own and would still be recognisable.
- Stencil font chosen for easier spray painting.
Branding, certification and quality control

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High level of project effort necessary to maintain standards and reputation: min. first 100 stoves inspected by project staff before delivery and quality control sheet filled, later on spot checks only

- Each stove goes out with a serial number, a matching certificate and a user manual
- Certificate serves as warranty proof (granted by producer)
- Register of certificates = proof of stoves sold
First entrepreneur trained in 2004 in Mulanje
In 2005, further 14 entrepreneurs selected for training (already in business, at least one successful product on the market)
Only 4 became certified rocket stove producers
They cover the 3 major regions of Malawi
All retail directly from their workshops
No middlemen (wholesaler, retailer) involved
Ken Steel Engineering has an outlet in Blantyre and employs a sales person who at time goes all over the country with a pickup full of stoves targeting private schools etc.
Delivery of bigger orders to the customer often offered as extra customer service
Market research in 2003 showed a potential market of 600 institutions.

Over 2,200 stoves sold since 2004.

New market opened = school feeding programmes, scope ca. 4,500 primary schools in Malawi.

Lifespan ca. 3 years of the stoves (with maintenance).

So far the current production capacity of 1,000 stoves per year seems sufficient, Ken Steel can respond to an order of 500 stoves within 2 months. Stoves account for ca. 70 percent of his business.

Conclusion: Sustainable supply sounds possible.
Marketing Chain for a Portable WFP - Stove

- Raw material supplier
- Fabricator & retailer
- ProBEC
- Customer (e.g., WFP)
- User
Promotion by the project

Create display platform: International Trade Fair etc.

Cost sharing
Promotion by the project

Demonstrations at schools, donors, meetings of networks like the Private Schools Association, Tea Association etc.,
Common Myths

- Producers know their costs
- Pricing is based on costs
- Producers know their yearly turnover
- Producers know the difference between turnover and profit
- Bookkeeping is done by professional people