Promotion of Institutional Rocket Stoves in Malawi 2004 - 2008

with the support of GTZ - ProBEC

(SADC Programme for Basic Energy and Conservation)

Peter Scott (Stove Designer, Aprovecho Institute)
Christa Roth (Regional coordinator ProBEC up to 2008)

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Technology adaptation

Peter Scott designed portable metal Rocket Stove for 110-l half oil-drum (‚WFP'-stove)

by 2004: 1 producer
120 stoves sold

by 2008: 4 certified producers
> 5,000 stoves sold (cumulative)

Commercial supply established

Cost - Benefit - Analysis (Habermehl 2008)

Environmental Impact: **Predicted Savings in 2008**

23,000 t fuelwood = preservation of

689 ha natural forest + 447 ha eucalyptus plantation

35,000 tons CO_2 + 93 tons Methane

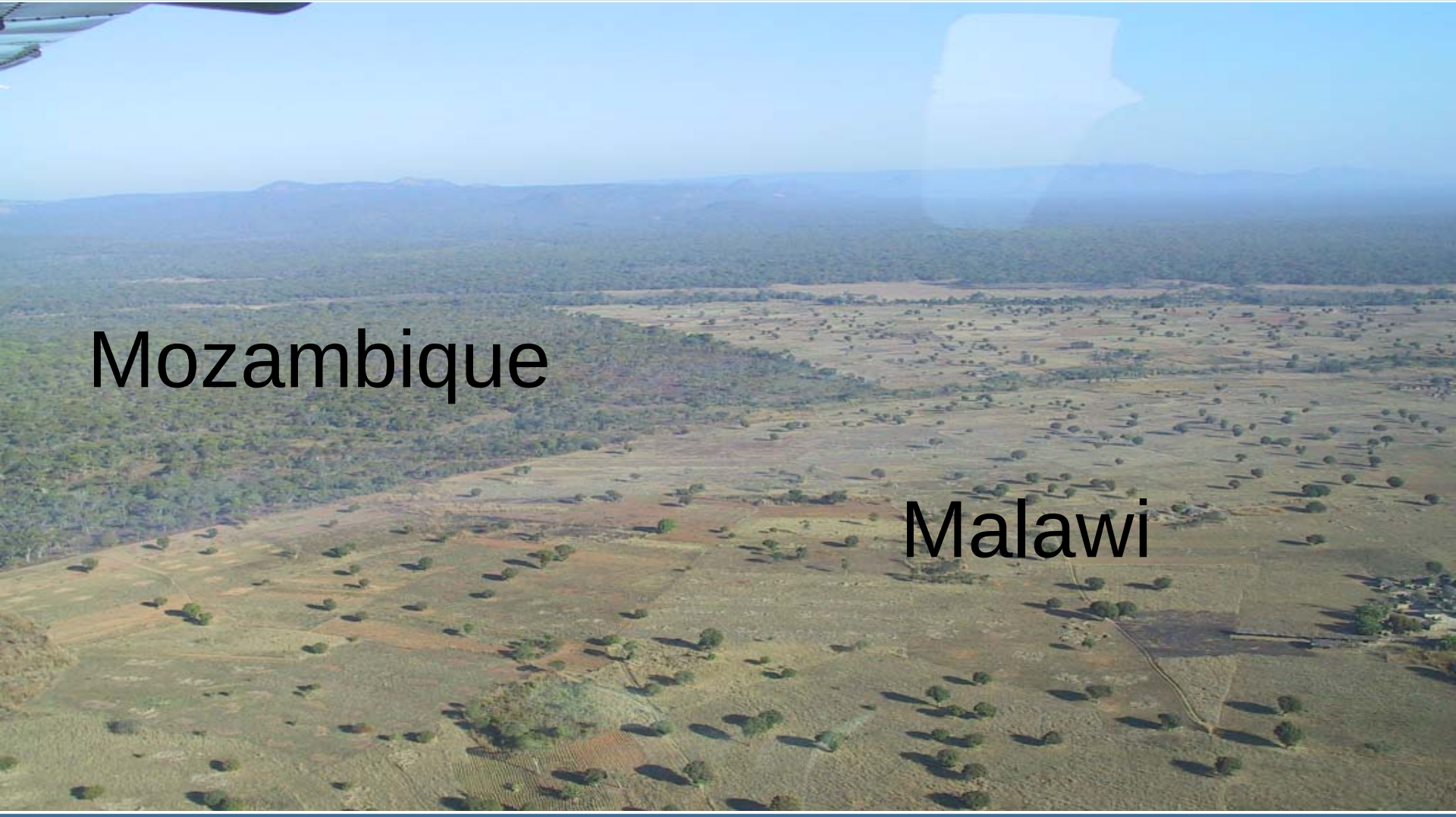
Economic benefits in 2008: 1,279,141 US$

(Avoided fuel costs, greenhouse gas reduction and preserved forest reserves)

Cost-benefit ratio: 1 $ invested = 5,16 $ return **(10 years)**

Cost effectiveness: 1 US $ => 93 kg wood saved

Firewood Scarcity in Malawi



Wasteful wood-use in institutions

Saving wood with Rocket Stoves

Firewood needed to cook 100 l of Maize nsima

170 kg on the open fire

14 kg with the new rocket stove

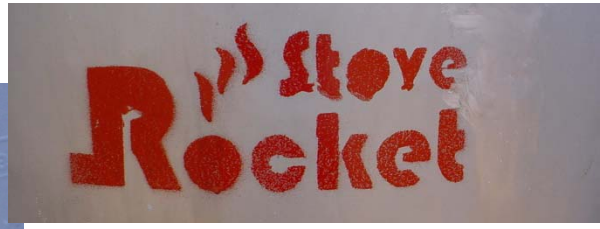
Less smoke, safer cooking, better food

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

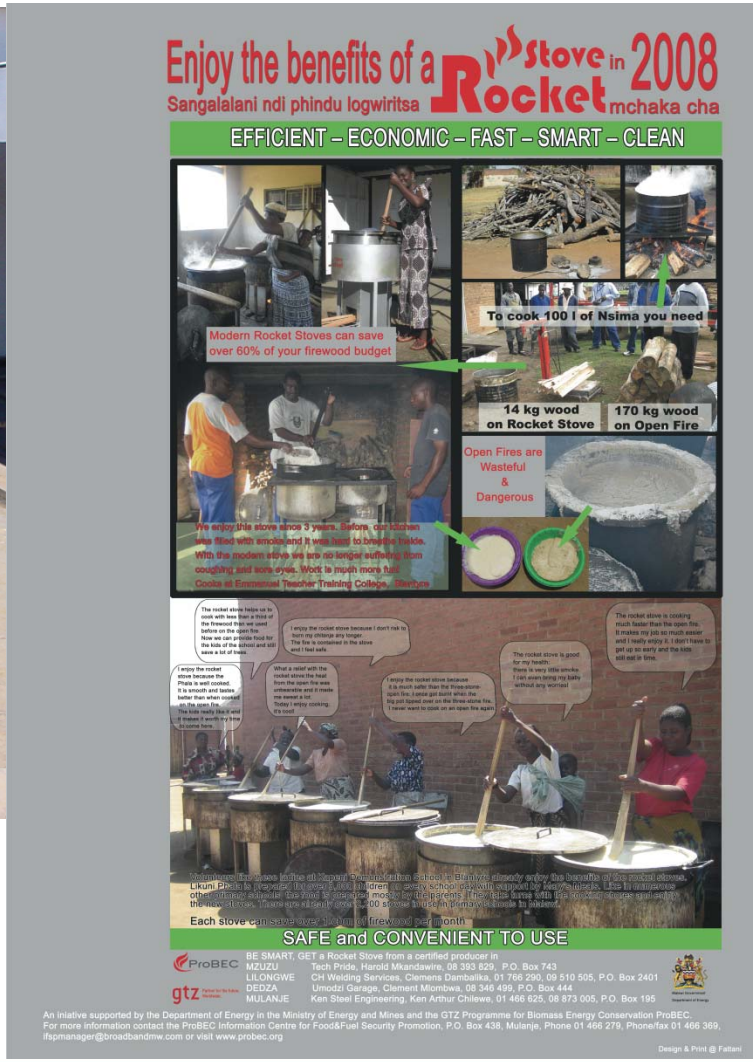
‚Nsima‘ prepared out of the same flour:

traditional fire < > new stove

Branding, certification and quality control

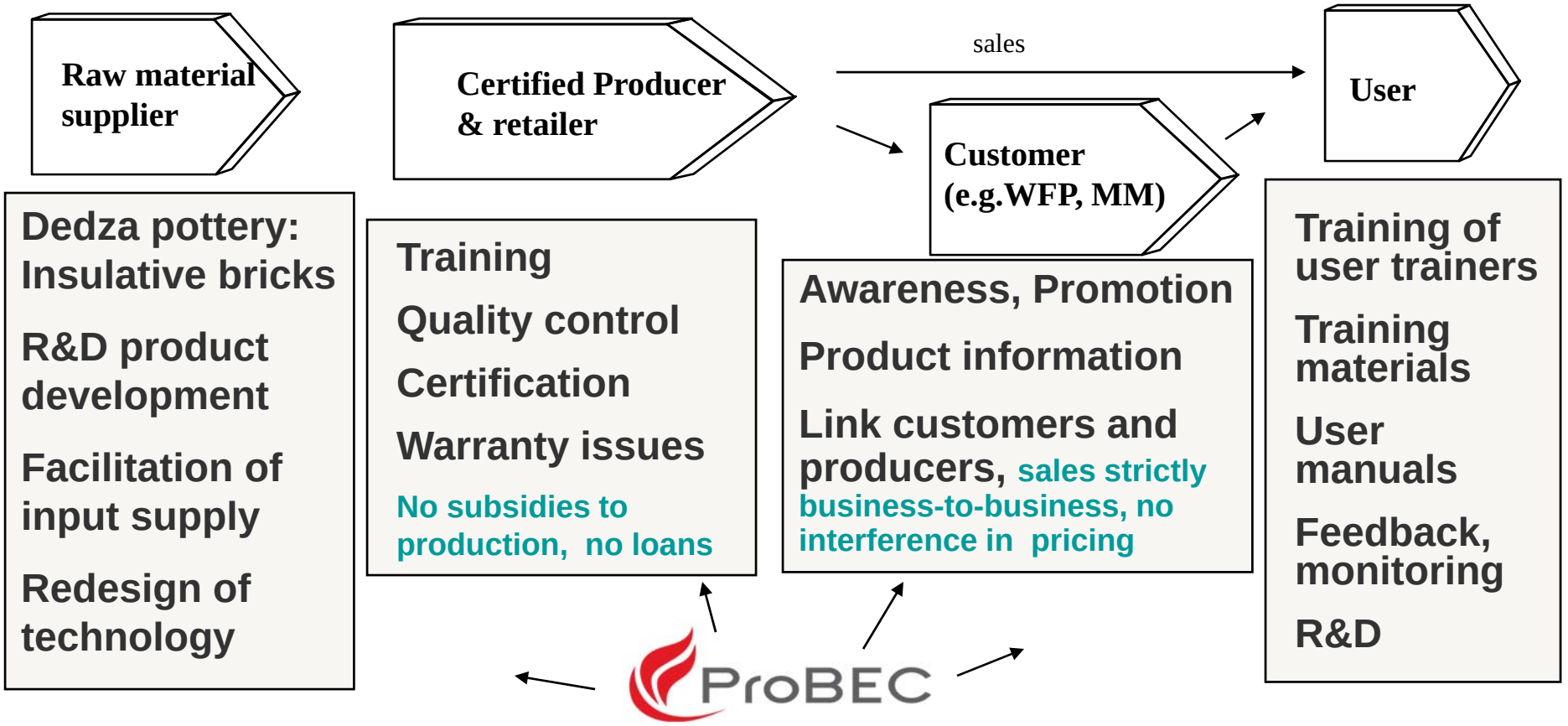


Promotion by GTZ - ProBEC



Awareness raising through calendars, exhibitions, media coverage etc.

Marketing chain portable 'WFP' - Stove



Identify bottlenecks in process from production to user and find solutions

Challenges and Solutions

- Custom-made insulative bricks only made on order (labour intensive, long leadtimes)
- Abrasion in lower firechamber reduces lifespan

⇒Redesign stove to shorten production time and increase durability of stove

- Fast drying hard firebricks in lower firechamber
- Standard size insulative brick from stock cut to size with simple moulds

Redesign of components

Cutting standard size insulative brick for 50 l -stove firechamber

Household Stoves

Bread Ovens

Restaurant Stoves

Water Heaters/ Tobacco Dryers/ Mango Dryers

Institutional Stoves

- Ideal use of Rocket Principles
- Material options for Construction of Combustion chamber
- Durable
- Commercial
- High profit margin for producers
- Work with institutions to manage wood supply and trainings
- Produced with or without a chimney

Local Adaptations