

# 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)**



# 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<sub>2</sub> + 93 tons Methane**

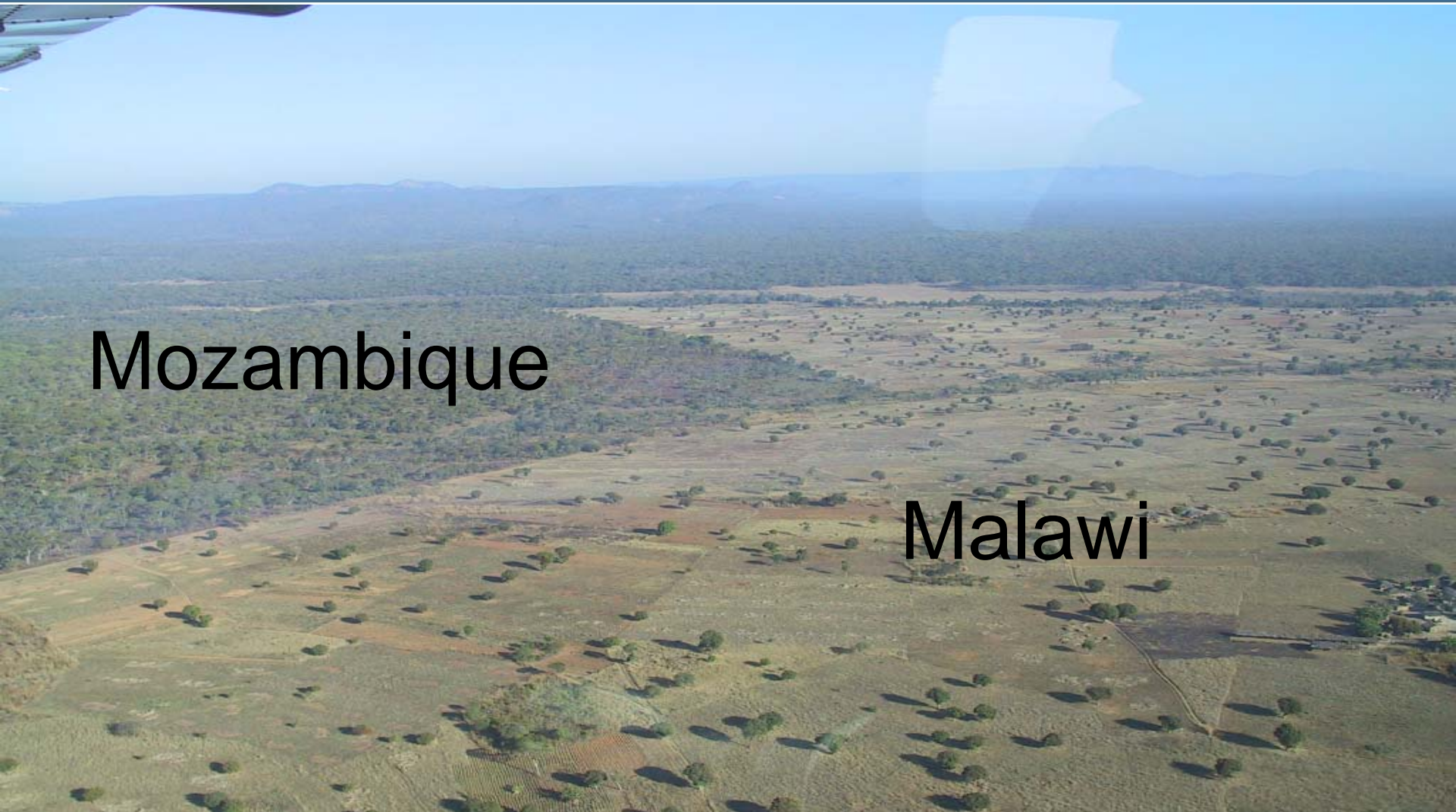
**Economic benefits in 2008: 1,279,141 US\$**

(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



Mozambique

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

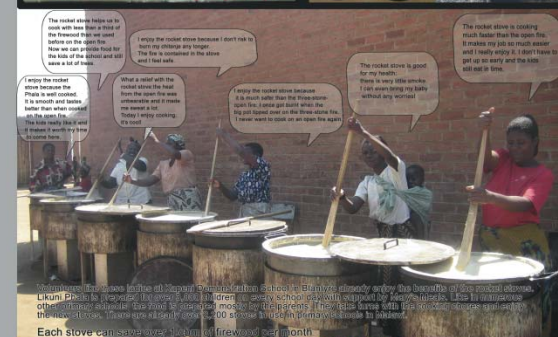


**Awareness raising through calendars, exhibitions, media coverage etc.**

Technologies & Fuels

Enjoy the benefits of a **Rocket Stove** in 2008  
Sangalalani ndi phindu logwiritsa **Rocket** mchaka cha

**EFFICIENT - ECONOMIC - FAST - SMART - CLEAN**



**SAFE and CONVENIENT to USE**

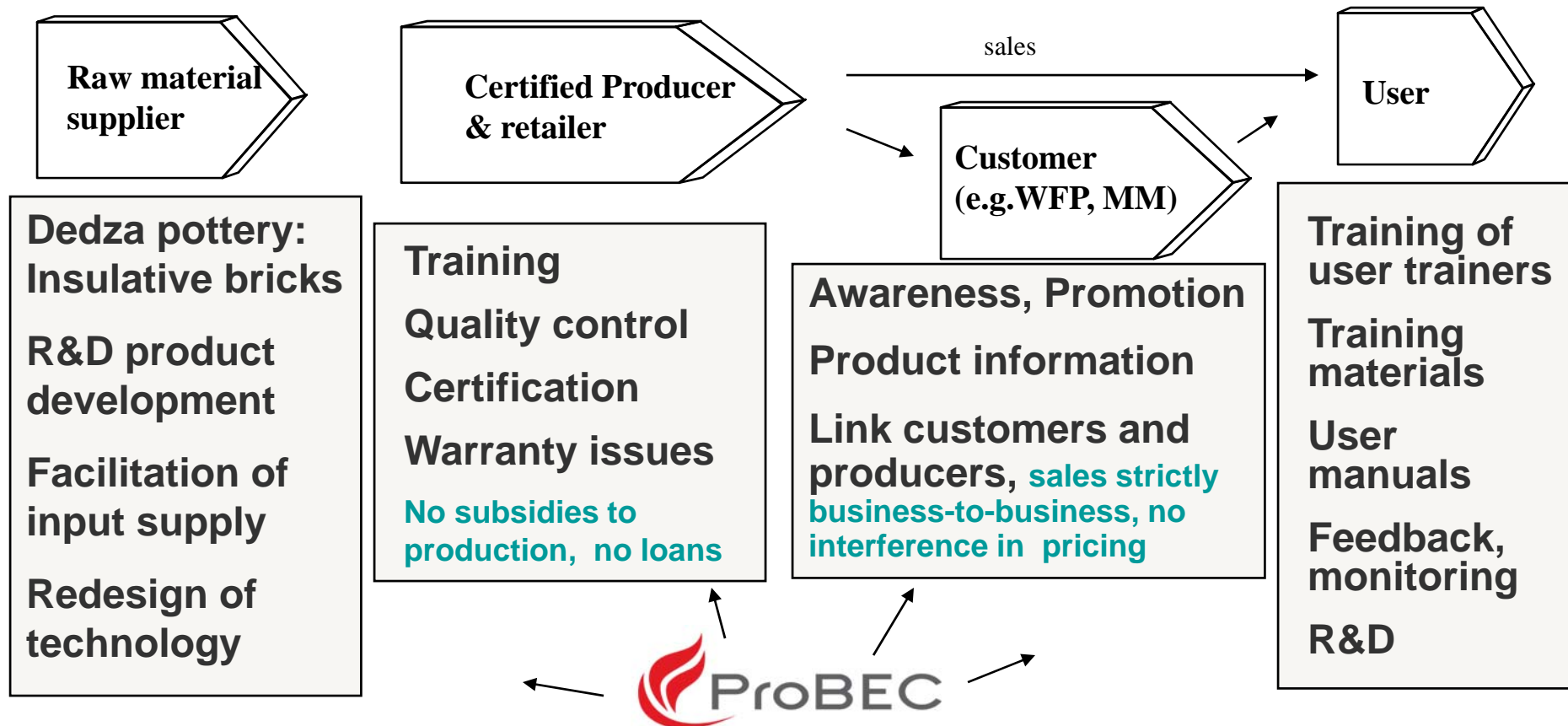
**ProBEC** BE SMART: GET A Rocket Stove from a certified producer in  
MZUZI Tech Pride, Harold Mwandawire, 08 393 629, P.O. Box 743  
LILONGWE Ch Wedding Services, Clements Dambakula, 01 746 250, 08 510 505, P.O. Box 2401  
DEDZA Umolei Garage, Clement Mbonwa, 08 345 499, P.O. Box 444  
MULANJE Ken Steel Engineering, Ken Arthur Chlewe, 01 466 625, 08 873 005, P.O. Box 195

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For more information contact the ProBEC Information Centre for Food/Fuel Security Promotion, P.O. Box 438, Mulanje, Phone 01 466 279, Phonetax 01 466 369, ifspmanager@broadbandmwe.com or visit www.probec.org

Design & Print @ Fattani

**2009 PCIA FORUM**

# 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

