

Rocket Stoves and other technologies – state of the art in Malawi

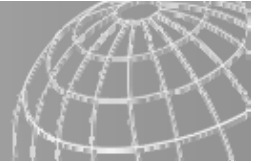


ETHOS CONFERENCE 2006

**GTZ – ProBEC
Programme for Biomass
Energy Conservation**

Andi Michel

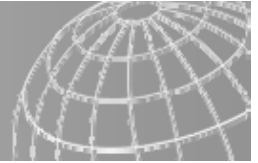




Schedule

- Introduction
 - GTZ – ProBEC
 - Andi Michel
- Status quo in Malawi
- Challenges with Rocket Stoves
- Challenges other technologies
- Way forward (HERA)





GTZ – Deutsche Gesellschaft fuer technische Zusammenarbeit mbH

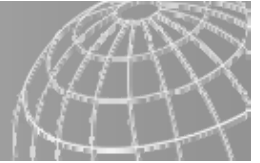
- international cooperation enterprise for sustainable development
- provides viable, forward-looking solutions for political, economic, ecological and social development in a globalised world
- worldwide operations with over 10.000 employees
- annual turnover of about 900 Mio Euro
- head office in Eschborn / Germany



- **20 years experience** of stove projects (promotion production and marketing of at least **750.000 stove** in 10 countries)
- **up-scaling** of more than **1.100.000 stoves** is planned

- www.gtz.de





SADC - ProBEC

Programme for Biomass Energy Conservation in Southern Africa

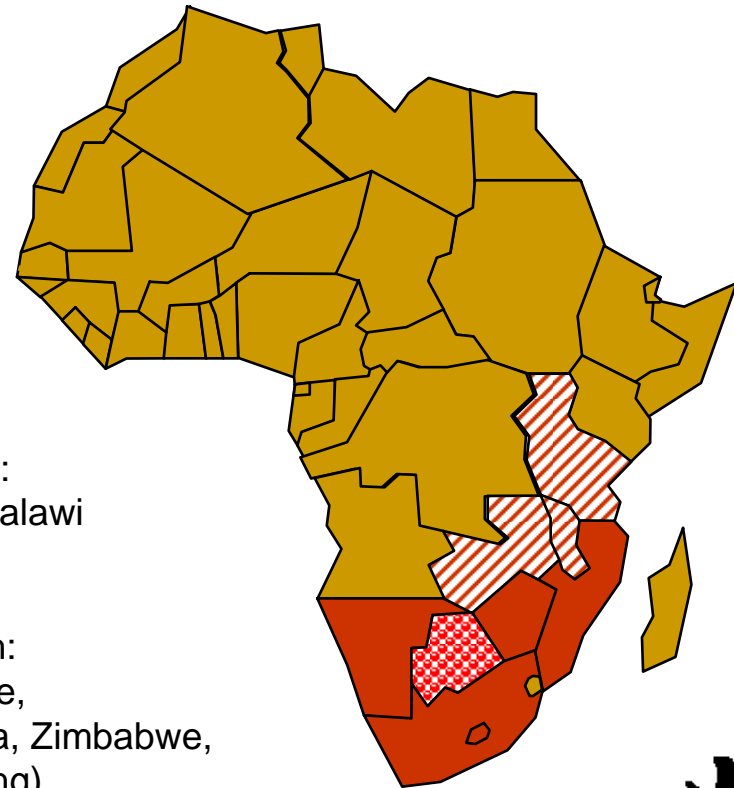
Vision

All population should be able to satisfy their energy needs in an affordable and sustainable manner

Partner countries as from July 2004:

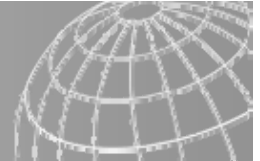
ProBEC SADC North:
Zambia, Tanzania, Malawi

ProBEC SADC South:
Lesotho, Mozambique,
Namibia, South Africa, Zimbabwe,
Botswana (forthcoming)



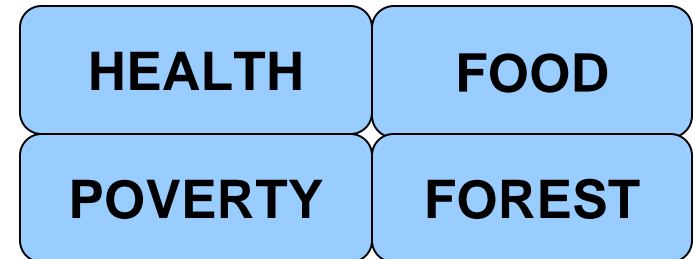
*Funding from BMZ
Co funding from DGIS*





Mainstreaming in ProBEC Structure

Purpose

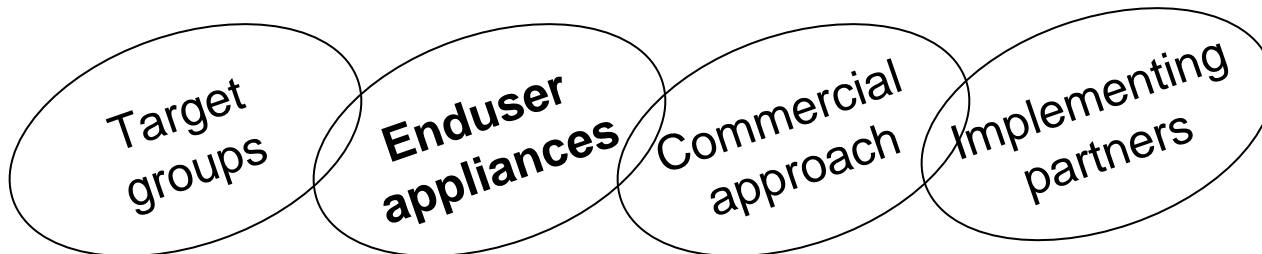


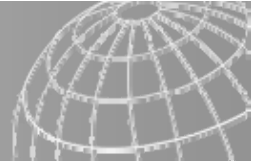
Biomass energy related public institutions,
civil society and the private sector

are successfully promoting and commercialising

the use of **affordable energy-efficient technologies** and **techniques**

for **low-income households, institutions and small-scale businesses**





Andi Michel

- german, 28 years old
- Dipl. Ing. Mechanical Engineering, MSc Renewable Energies
- Stove experience: 2004 Lesotho: Baseline Study and field tests with Rocket Stoves



Malawi: International Stove Workshop

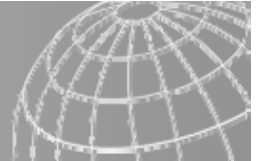
Germany: Master Thesis: Dissemination of energy efficient stoves in developing countries

2005 Malawi / Zambia:

Training and support of Rocket Stove producers

andreas.michel@gtz.de





Status quo in Malawi

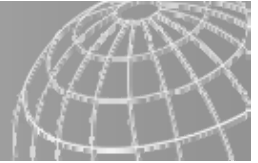
- Rocket Technology introduced to Malawi March 2004 by Peter Scott
- App. 800 Rocket Stoves sold
- 4 certified producers
- research on insulative material with commercial pottery
- research on further RS-application (tobacco curing, baking, hot water geyser, chip frying)



- research on “cheap” Household Rocket Stove
- HHRS in two designs: rectangular and round
- Quality control system and certification of producers
- Award winning presentations of BEC technologies and BEC techniques at international Trade Fairs

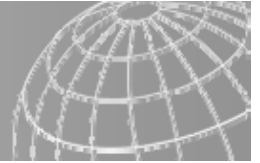
- Since 01/06 in malawian government: Task force Biomass Energy





Status quo in Malawi - examples





Challenges

ROCKET STOVES:

- Insulative Bricks do not 'survive' in prison stoves
→ Trying to put tiles
- Rocket Stove Geometry (Gaps) difficult for producers
- production **costs** for Household Rocket Stove versus stability versus efficiency

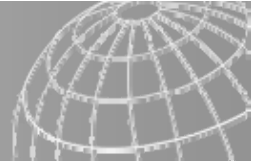


- production by untrained producers → **design drift**
- efficiency tests of institutional stoves (protocol, equipment)
- quality control
- efficiency → only one pot – user friendliness

OTHER TECHNOLOGIES:

- Water Boiling test: - no lid → water doesn't boil
- areas without clay → Insulative material ?





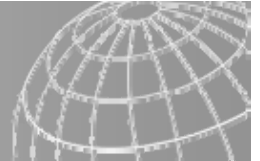
GTZ – further stove experience

- **e.g. Ethiopia:**
 - promotion of MIRT STOVE
 - over 50.000 stoves sold
 - Shell-Foundation co-funds scaling up
 - DGIS to come in for up-scaling to 220.000 stove

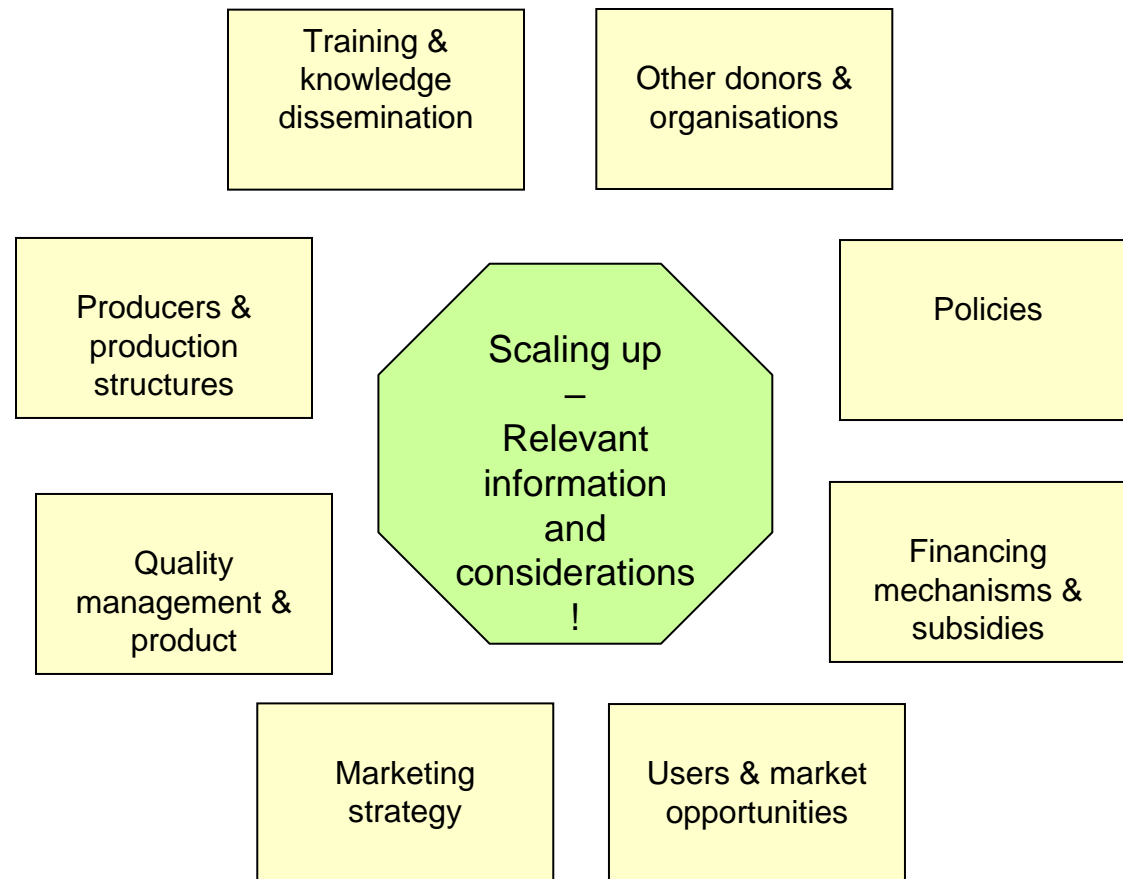


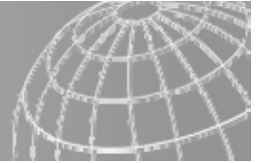
- **e.g. Uganda:**
 - promotion of Rocket Stove (lorena type)
 - over 30.000 stove build
 - DGIS co-funding for up-scaling for another 60.000 stoves is scheduled





HERA – gtz household energy programme

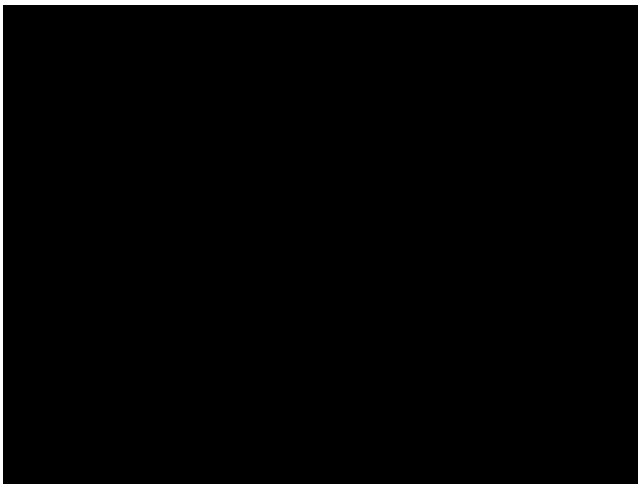




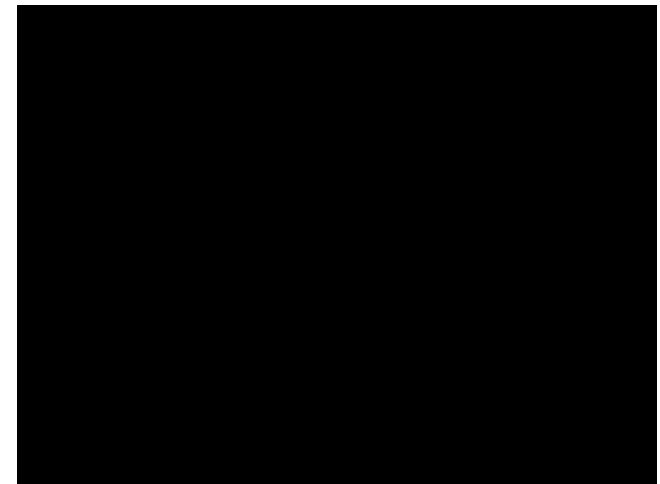
THANK YOU FOR YOUR ATTENTION !!!

VIDEOS:

ROCKET STOVE USE IN LESOTHO



Wood “cutting” in Lesotho



www.gtz.de

www.probec.org

andreas.michel@gtz.de