

# Biomass energy at household level: opportunities and challenges.



By. Ruchathi Mwaniki, PhD  
NETFUND

# Biomass energy in Kenya

Biomass based energy caters for 68% of Kenya energy requirements

## Rural

- ❑ 89% wood fuels
- ❑ 34% charcoal
- ❑ 94% Kerosene

## Urban

- ❑ 7% wood fuels
- ❑ 82% charcoal
- ❑ 89% Kerosene



# Biomass use in Kenya

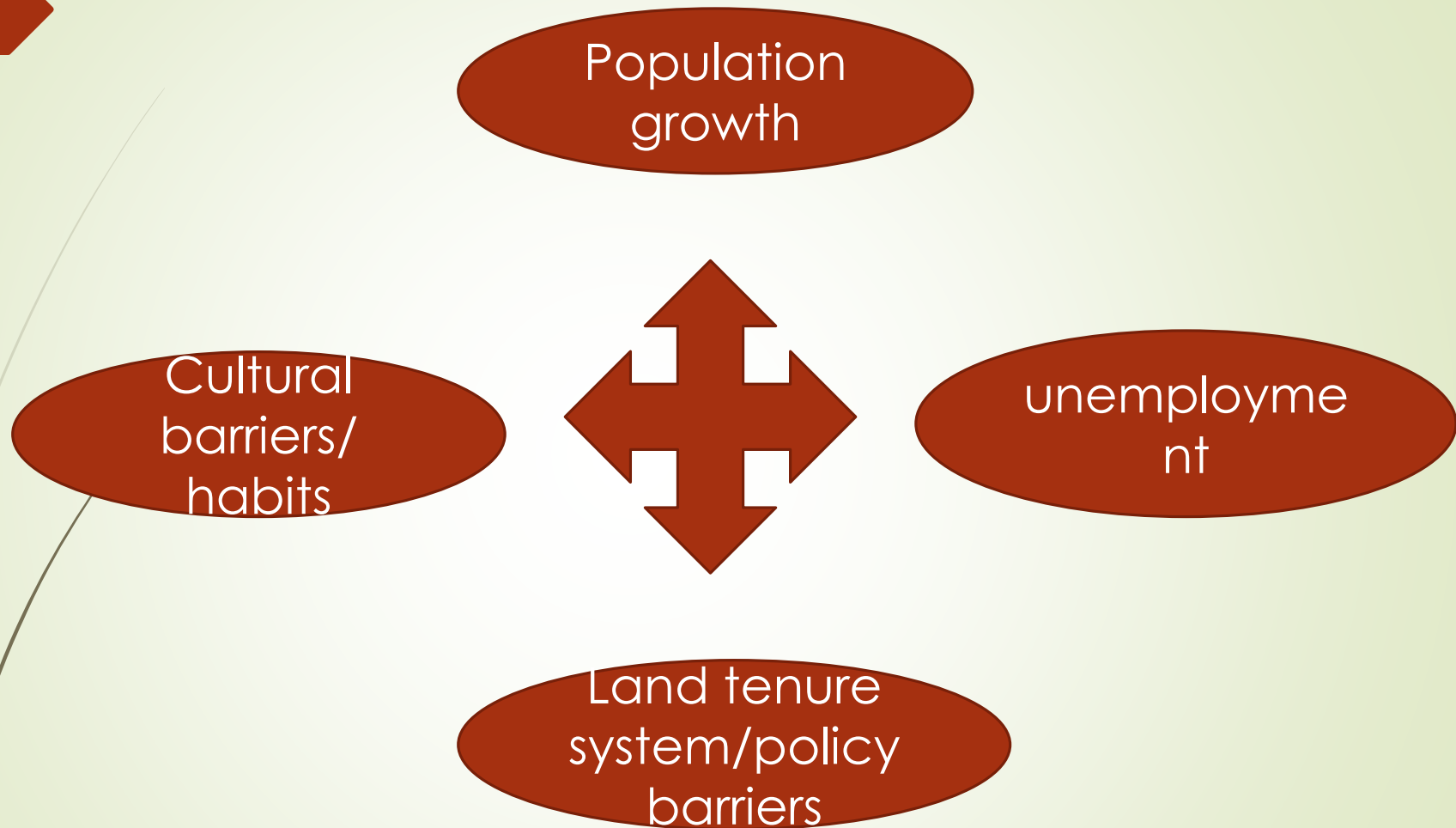
In 2000

- ❑ Biomass use stood at 34.3 million tons
- ❑ 15.1 million tons for fuel wood
- ❑ 16.5 million tons for charcoal production (mainly from traditional inefficient kilns)
- ❑ 43% from sustainable supplies
- ❑ 57% from unsustainable supplies

Current status

- ❑ 6% forest cover (3.45 million hectares, counting even private forests)
- ❑ Degreasing by 0.09% pa (52,000 hectares)

# Challenges associated with biomass energy





# Major changes within the biomass energy sector

- ❑ Policy environment has improved
  - ❖ Charcoal rule
  - ❖ Draft forest policy
- ❑ Huge demand for charcoal and fuelwood
  - ❖ Domestic
  - ❖ Industrial (tea Industry)
- ❑ Commercial growing of wood still under utilized
- ❑ Manufacture of efficient cookstoves is still not fully exploited
- ❑ Technologies exist to reduce biomass consumption by almost 80%
- ❑ The innovation atmosphere is ripe and people are taking advantage (example)

# The future of Biomass energy



“the appearance of the animal before Nairobi judges in July 2014 was a sign of how desperate some Kenyans have become in their battle against the invasive "mathenge“”  
*from local media*

Prosopis is no longer viewed  
and a problem but rather as an  
opportunity



Muhammad



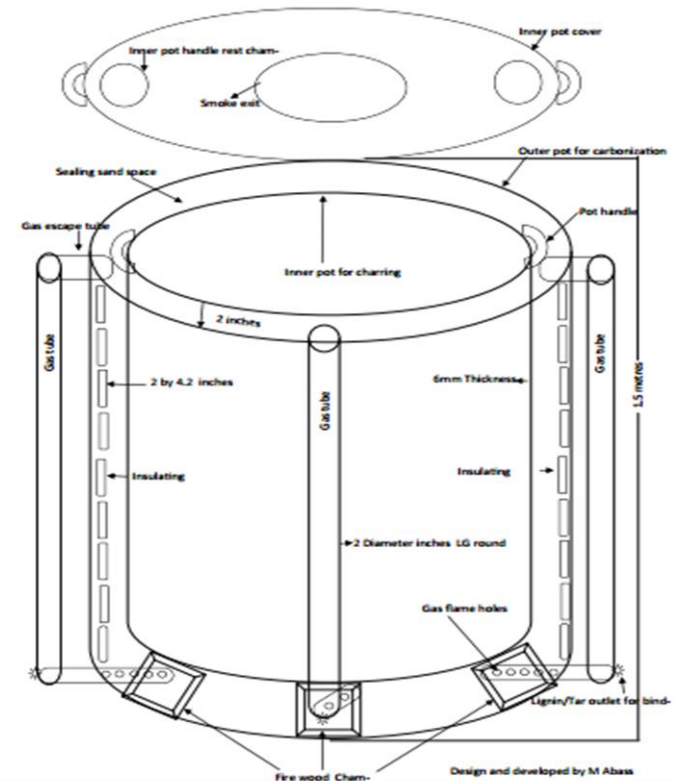


## Traditional kilns

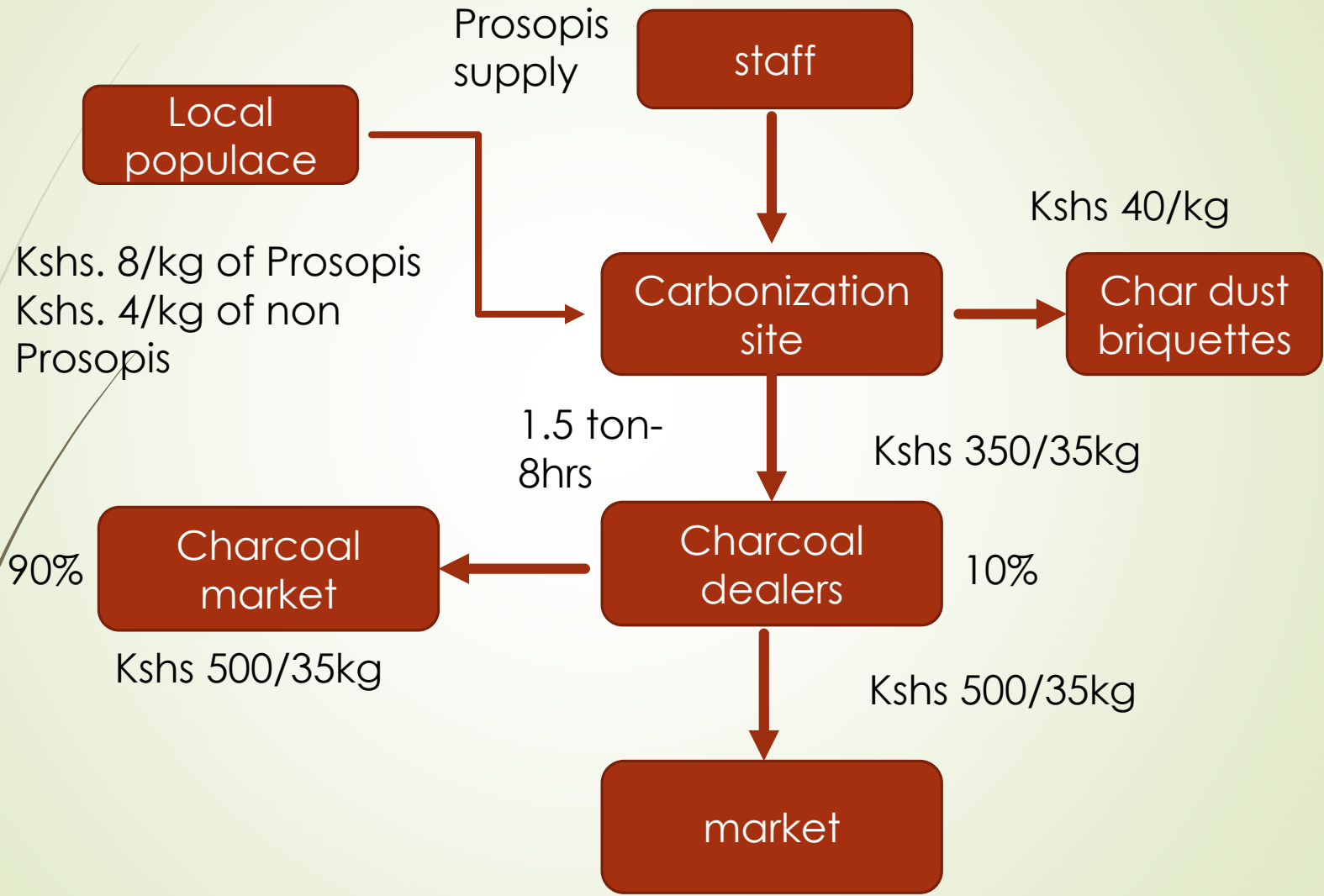
- Quite inefficient (recovery rate of 10%)
- Takes up to 10days
- Labour intensive
- Air pollution

## Carbonization kiln

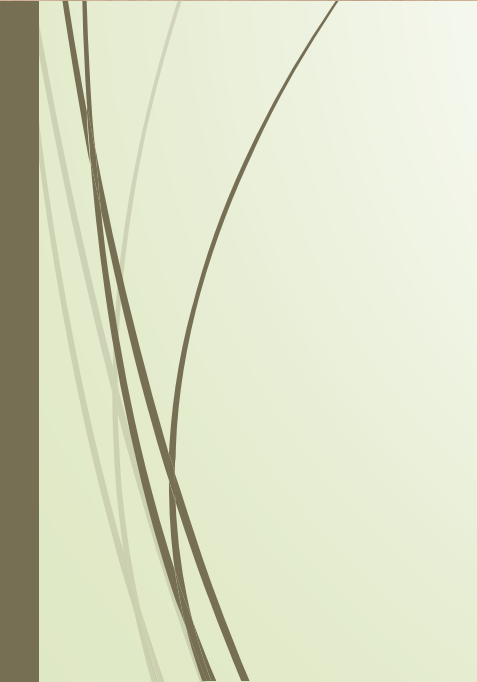
- Takes 8hours
- Quite efficient (recovery rate of 40%)
- Relatively easy to run
- Reduces product cost significantly
- Reduced air pollution



# Biomass energy future







# Predictions on biomass energy in Kenya

- ❑ Biomass energy will continue being a dominant source of energy in Kenya.
- ❑ More efficient technologies will emerge that will make biomass energy sustainable.
- ❑ New innovative business models will dominate the supply side of the business (raw materials and markets).
- ❑ Carbonization of wastes (agricultural) will possibly be the next big thing (investments in briquetting).
- ❑ Private forests will be a dominant sources of biomass energy.
- ❑ The gap between policy and practice is closing and will continue to close.... The new forest act
- ❑ Biomass energy sector will create a lot of green jobs for the BOP
- ❑ In 10 years there will be at least 5 SMEs on biomass energy in the top 100 SMEs in Kenya.