



WOODY BIOMASS ENERGY DEVELOPMENT IN KENYA

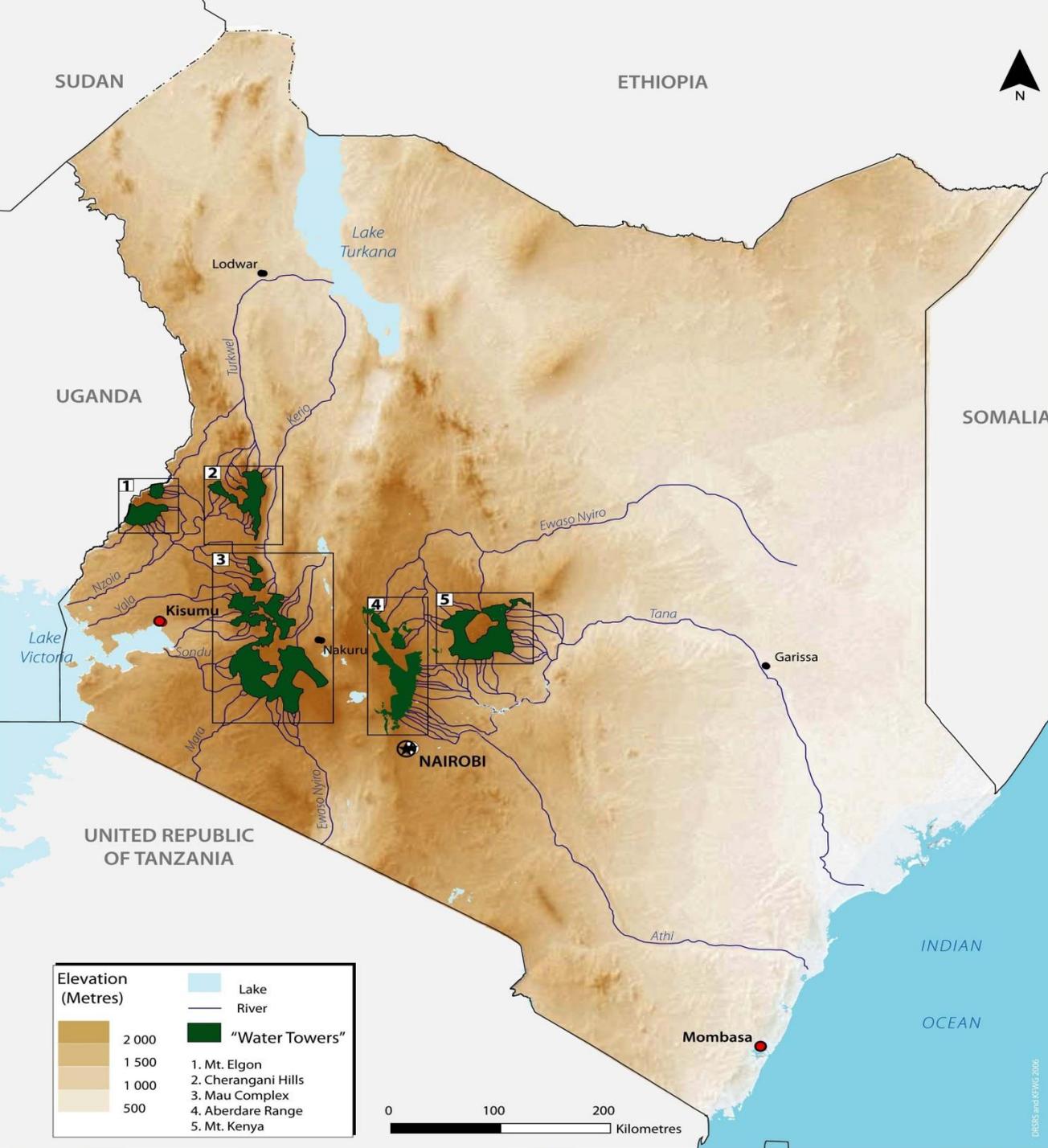
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General outline of the presentation

- 1) Introduction
- 2) Sources of Biomass Energy
- 3) Legal frame work
- 4) Woodfuel Development Strategy
- 5) Charcoal rules and regulations
- 6) Strategy for bioenergy development
- 7) Ongoing projects

Introduction

- Arid and Semi-Arid Areas (ASALs) constitutes about 80 per cent of the land mass in Kenya
- Biomass energy contributes up to 69% of Kenya's national energy requirements
- Includes firewood, charcoal and agricultural wastes



Sources of Biomass Energy

- Closed forests, woodlands, bush lands and wooded grasslands, farmlands,
- Farm residue is used in areas where energy demand exceeds supply and in certain seasons when wood supply is limited
- Industrial wood waste: Logging sites where branches and tops remain after felling; sawmilling sites where sawdust, bark and small off-cuts are available for fuel wood

Accessibility

Depends on the following:

- legal issues
- environmental issues
- ownership determines control and access
- objectives of management
- distance
- and infrastructure

Legal frame work

- Kenya has formulated
 - ✓ an energy policy and legislation,
 - ✓ forest policy and legislation
 - ✓ charcoal rules and regulations
 - ✓ *Wood fuel development strategy*
 - ✓ *biomass energy strategy*

Woodfuel Development Strategy

aims at:

- ✓ harnessing the wood energy supply potential;
- ✓ address the woodfuel shortage;
- ✓ prevent further degradation of the fragile watersheds and rangelands
- ✓ to accelerate reforestation

Structure of the strategy

It is structured into five thematic strategy areas, namely :

- (i) Woodfuel supply,
- (ii) Woodfuel demand side management,
- (iii) Woodfuel Research and Development
- (iv) Woodfuel substitution and
- (v) Woodfuel sub-sector regulation

Structure of the strategy cont.,

1) Woodfuel supply : key strategies to achieve this:

- (i) Promoting the use of fast maturing trees for energy production
- (ii) establishment of Commercial woodlots and peri-urban plantations
- (iii) promoting international co-operations on programmes focusing on renewable energy sources
- (iv) on-farm woodlot development
- (v) Develop and implement short and long term plans for massive tree plantings
- (vi) Commercialize tree seed/seedling production

Structure of the strategy cont.,

2) Woodfuel demand side management:

- (i) Large scale investment in the manufacture and marketing of energy efficient stoves
- (ii) Promote wider use of efficient kilns,
- (iii) Increase the rate of adoption of efficient fuel wood stoves
- (iv) Promote private sector participation in improved woodstove production and distribution

Structure of the strategy cont.,

3) Wood fuel substitution

- (i) Promote woodfuel substitutes such as LPG and biogas
- (ii) Adoption of other energy conservation measures such as the use of fireless cookers

The two main types of biogas digesters :

- ▣ the floating drum



the fixed dome plants

Structure of the strategy cont.,

4) Woodfuel Research and Development:

- (i) To ensure continuous supply of information for decision making

Challenges to Woodfuel Development

- competing land uses,
- technical
- socio-cultural barriers
- low priority in terms of resource allocation
- large initial investment requirements for woodfuel plantations
- long gestation period between planting and harvesting
- conversion and transportation costs.

Charcoal rules and regulations (revised in 2018;

- provide for the sustainable management of the charcoal industry in Kenya;
- address issues related to charcoal production, transportation, marketing and trade.
- Guidelines on formation of charcoal producer associations

Charcoal production

Traditional kiln



Charcoal ready for the market



Transportation



Strategy and action plan for bioenergy development in Kenya

- The objectives of the bioenergy and LPG strategy is to improve the sustainability of bioenergy production and utilization and to promote alternative forms of energy

Strategy for bioenergy development

- Promote LPG use in households and institutions
- Promote sustainability in biomass energy production
- Promote alternative and cleaner forms of biomass energy such as biogas, liquid biofuels (biodiesel and bioethanol), briquettes and pellets
- Promote efficient biomass technologies such as gasification
- Develop appropriate financing models

Ongoing projects

- *Promotion of efficiency in the conversion and utilization of biomass energy*
 - wood to charcoal conversion technologies (more efficient kilns)
 - Fuel briquetting,
 - Promote product quality testing and assurances
 - Promoting R&D by public/private sectors to develop compatible technologies

Ongoing projects cont.,

- *Promotion of LPG use by households and institutions*
 - transition of households from firewood and charcoal to LPG.
 - Inland LPG storage and distribution infrastructure.
 - Modification of firewood stoves in large and medium government institutions to uptake LPG or biogas

Ongoing projects cont.,

- *Promotion of Biogas technology for households and institutions*
 - Capacity Development of service providers to increase the pool
 - train and guide farmers and Institutions investing in biogas Technology
 - Research and Development

Ongoing projects cont.,

- *Development and promotion of efficient biomass conversion and end-use devices*
 - ▣ To increase access of clean stoves by building capacities of local artisans to enhance, accessibility , adoption and use of the technology

Ongoing projects cont.,

Sustainable Biomass Energy Production

- Integrated Bamboo Biomass and Entrepreneurship Project for rural households in priority watersheds,
- Promote establishment of woodlots for wood fuel (firewood and charcoal)

Privately owned plantation



Conclusion

- With policy and legal framework in place, the huge demand for charcoal and the emerging and growing market for fire wood, sustainable growing of woody biomass energy should be encouraged.
- This can also lead to job creation, increased relieve for women as they search for household energy, increased food security as a result of available biomass for cooking.

THANK YOU

