

**Potential of Bamboo for farming,
environmental conservation and
poverty alleviation in South Nyanza,
Kenya**

By

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The problem

- Continued increase in acreage of land under tobacco
- Decreasing acreage of land under traditional food crops, low production hence food insecurity
- Tobacco wood cured, wood fuel from indigenous trees, forest clearance
- Deforestation contributes to food insecurity and poverty

The problem cont'

- Change of natural permanent rivers to seasonal streams, less water for livestock and domestic use
- Soil erosion
- Pollution of rivers and environment by chemicals discharged from tobacco nurseries and farms

Study Objective

- To experiment on the potential and people's attitudes of adapting Bamboo as an alternative crop and source of livelihood to tobacco farming in the region.

Aim of project

- Research to solve multiple problems;
- Food insecurity
- Socio-cultural conflicts
- Poverty
- Environmental degradation

- Tobacco farmer tending to his crop



- Tobacco farmers drying leaves



Goal of project

- Sustainability of traditional and modern household livelihood strategies of tobacco farmers and how they would be diversified through the introduction of bamboo as an alternative economically viable crop and source of livelihood in South Nyanza

Bamboo

- a perennial plant that belongs to the grass family
- >1500 species of bamboo in the world
- Over 140,000 ha in natural vegetation of *Yushania alpina* (*Arundinaria alpina*) indigenous bamboo species
- 43 species in Africa,
- Introduced five species; Giant bamboo (*Dendrocalamus giganteus*), Yellow bamboo (*Bambusa vulgaris*, *Bambusa tulda*, *Bambusa textilis* and *Oxytenanthera abyssinica*)



Why Bamboo?

- The fastest growing plant on earth
- A critical element in the balance of oxygen and carbon dioxide in the atmosphere
- A viable replacement for wood, with a growth rate three times that of eucalyptus;
- An enduring natural resource
- Versatile with a short growth cycle, It matures in just 3 years
- An essential structural material in earthquake architecture
- A renewable resource for agroforestry production.
- An ancient medicine
- Integrally involved in culture and the arts
- Bamboo's versatility in environmental conservation
- Harvests are possible every second year's for at least 4 decades.
- Provides employment & income opportunities
- Assures definitely sustainable development
- A short cut prospect to Millennium Development Goals

Uses in environment

- the fastest growing canopy for the re-greening of degraded areas
- sequestration of carbon, yielding 35% more oxygen than equivalent stand of trees and used for carbon trading (CDM)
- lowering light intensity and offering protection against ultraviolet rays,
- working as a natural environmental cleansing system
- It holds 100 tones of water per hectares.
- bamboo acts as an atmosphere and soil purifier.
- Bamboo can help avoid future shortages and hardships caused by deforestation.
- Its anti-erosion properties create an effective watershed, forming a kind of soil bundle along river banks (binds up to 6m³ of soil), deforested areas and in places prone to earthquake and land slides.



Study area

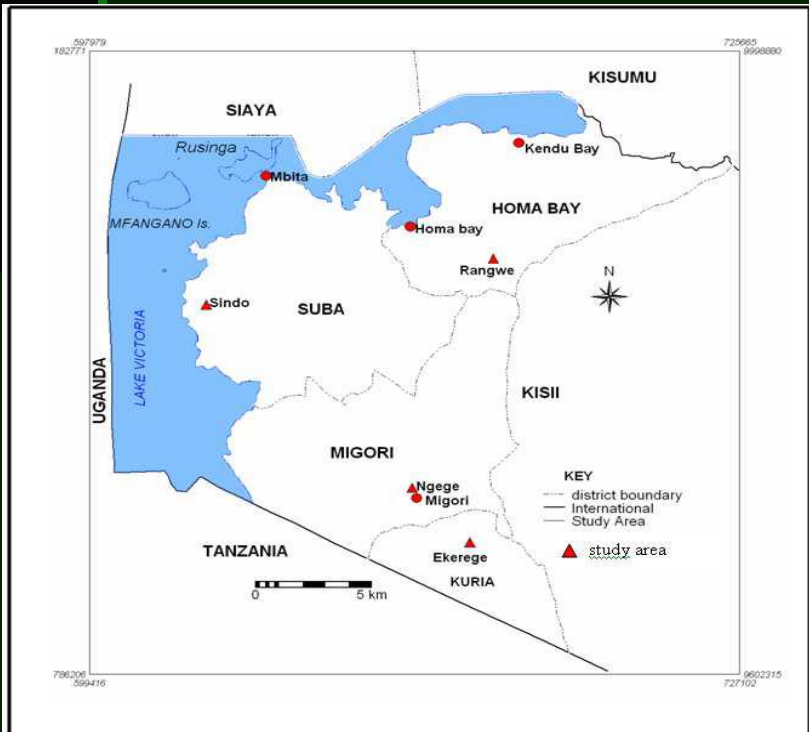
Four Districts:

Homa Bay-Rangwe

Kuria- Ikerege

Migori- Suna

Suba-Sindo



Achievements

- Established bamboo plantations
- Establishment of bamboo nurseries
- Establishment of bamboo cooperative societies
- Trained artisans in use of bamboo for making various products

Bamboo farms (Bambusa, left and Giant in Migori and Kuria respectively)



Opportunities and Prospects

- Recognizing bamboo –Policy and Act integration
- High growth rates and low cost of investment
- Potential in environmental conservation
- Investment in bamboo preservation
- Bamboo in charcoal production
- Industrial products from bamboo
- Bamboo in renewable and energy raw materials
- **Ecotourism**
- **Suitable agroecology for bamboo plantation**¹⁴

Bamboo nursery in Migori



Bamboo workshop in Sindo



Constraints

- Lack of awareness
- Lack of bamboo characterizations
- Financial constraints, eg for purchase of tools, nursery establishment etc
- Lack of knowledge, skills, designers, technology,
- Wild fire
- Lack of strategy and policy
- Low cost for bamboo producers,
- Inadequate land for bamboo plantations
- Low level or lack of processing technologies
- Lack of local tools and machineries
- Lack of integrated production systems
- Expensive lamination materials
- inadequate information
- Electricity not available in rural areas or expensive

Recommendations

- Skill oriented courses
- Provide small machineries and tools
- Training on harvesting, preservation ,processing & nursery techniques
- Prepare teaching manuals
- Research and Development
- Choosing the right marketing strategies
- Promote policy & institutional changes
- Good marketing infrastructure
- Develop reliable information system
- Organize production cooperatives & micro financing
- Support private sector initiatives

Thank You for listening,

Ahsante sana

Traditional Uses of bamboo in Kenya

- Was only limited to areas where it existed naturally
- low value addition in processing or non at all
- This gave rise to a ban on harvesting
- Some of the forms of utilization in the public domain:
 - Fencing homesteads (especially in Nairobi)
 - Fencing of barracks by the armed forces i.e. Gilgil
 - Building of houses
 - Food (bamboo shoots in Mt. Elgon)
 - Weaving tea picking baskets

Building of Houses



Residential and Farm Fencing



A trader selling dried
Bamboo shoots in Kitale
town



Tea picking baskets



Current Uses

- Bamboo Baskets
- Bamboo Chairs



Tooth picks and skewers



Packing tooth picks for sale

Handicrafts
made from
bamboo in
KAPI
factory,
Nakuru



Flowers
and bean
support in
Flower
industry
(Naivasha)



Some of the products furniture made at Karura



1. Coffee table with woven top
2. Coffee table made of laminated bamboo boards
3. Simple chair
4. Dining table
5. Flower stand
6. Out door chair

Manufacture of incense sticks in Nakuru Town for Export and Domestic market



A woman packing sticks with insecticides



Stick for export

Bamboo Charcoal Production in Thika



Charcoal Briquettes ready for packaging



Ordinary bamboo charcoal in 50kg sacks

Use of bamboo in Environmental protection

Planting of bamboo in unproductive lands in Coffee estates in Thika and also river embankment in Nyando



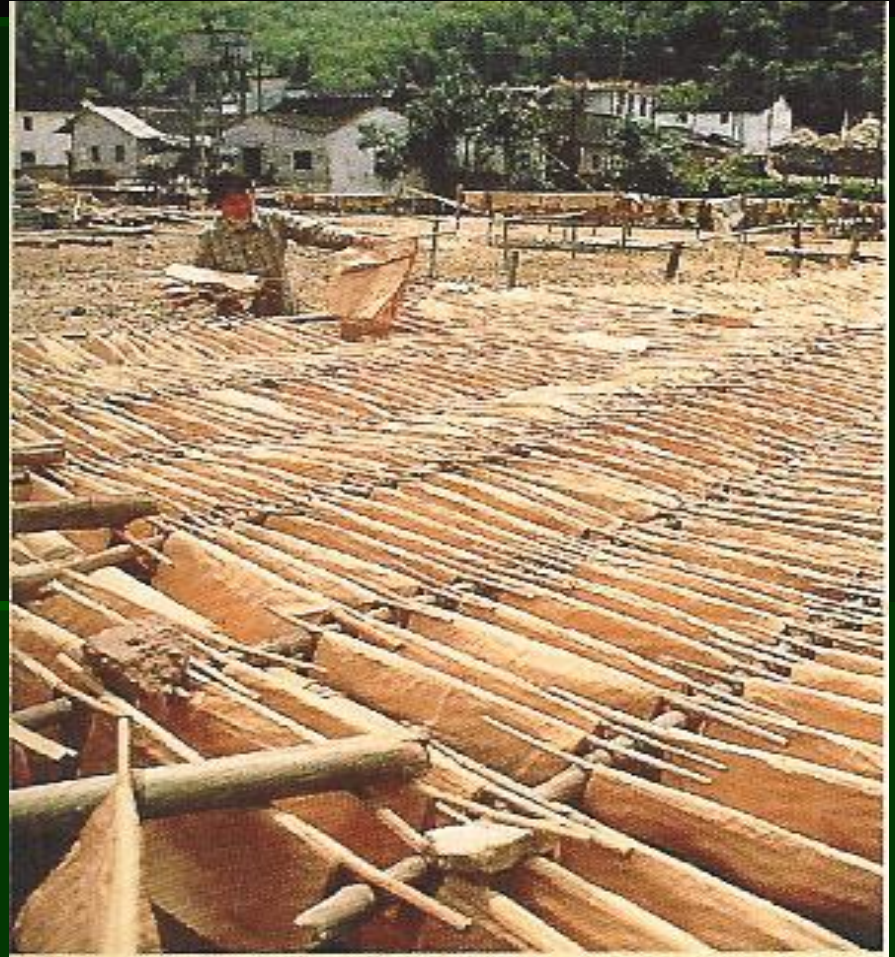
Potentials Uses Cont...

- Production of bamboo panels and mat boards



Potential Products Cont...

- Bamboo used for production of pulp and paper



Bamboo Production in Ethiopia



- Bamboo handicrafts produced at FeMSEDA workshop



- Bamboo table with chairs



- Bamboo sofa, shelf

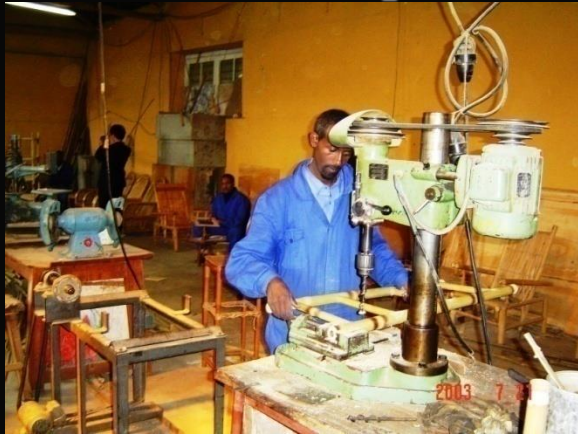
Lamp Shade, Fruit Tray produced by the trainees



Bamboo partition, table and chair produced at FeMSEDA workshop



Bamboo articles produced at FeMSEDA workshop



Bamboo House at FeMSEDA Compound



Bamboo House at ETTE

