Charcoal Production from Prosopis Using Improved Earth Mound Kiln: Charcoal Producers' Perspective in Baringo County, Kenya.

Presentation by

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Sustainable woodfuel value chains in Africa: Governance, social, economic and ecological dimensions

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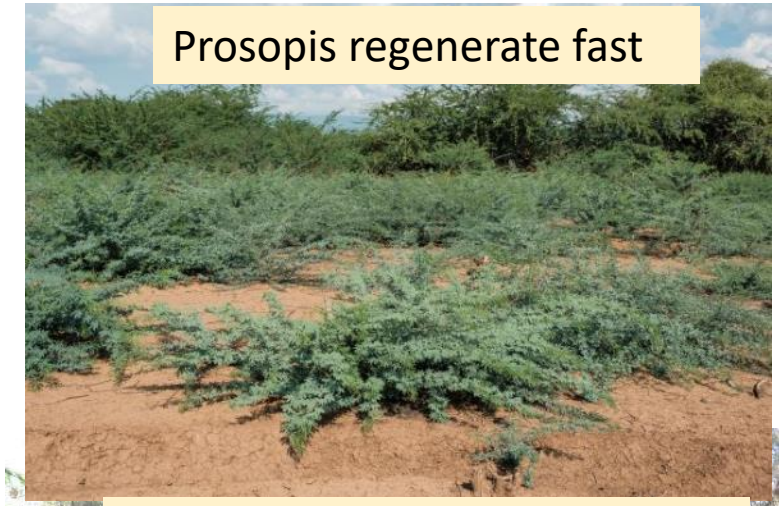
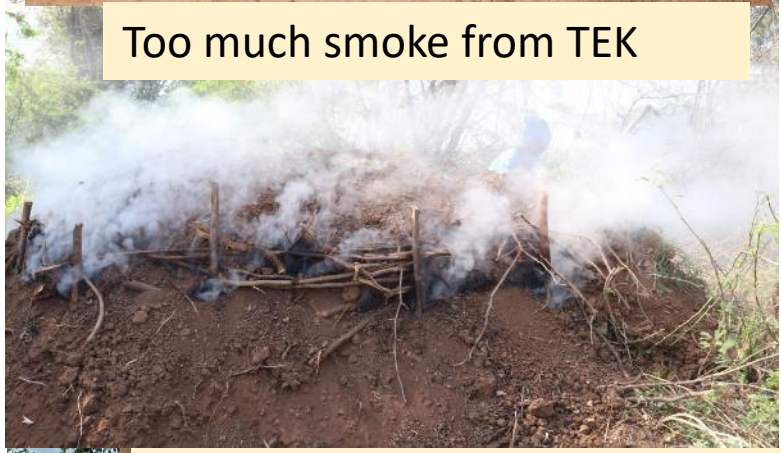
Background Information

- Readily available Prosopis wood for charcoal- Regenerates fast and naturally.
- About 100% of producers in Marigat sub-county uses traditional earth mound kiln (TEK)
- ICRAF through GML project trained 25 of us as community ToTs **on** improved kilns (improved earth mound kiln (IEK) and drum kiln).
- IEK is a simple modification of TEK by fitting 2 chimneys and 4-6 breathers to regulate air in/out the kiln.
- As community ToTs, we sensitised and trained other producers through **Practical demos.**
- Over 359 producers reached in the process in Loboi, Ilchamus and Ngambo Locations.


Prosopis regenerate fast


Too much smoke from TEK


Community sensitization meeting

Setting up improved earth mound Kiln

- ❑Amount of wood needed is variable but must be adequate
- ❑Dry the wood well under the sun for 7-14 days
- ❑Kiln size should be 1-3 metres wide and 2-5 metres long

1. Cut wood to 1 m sizes and closely stack

2. Cover the stacked kiln with grass/organic matter & set chimneys and breathers- leave lighting area open

3. Add a layer of soil

4. Light the kiln

5. Cover the lighting point as soon as smoke emerge from the opposite chimney

Monitoring and harvesting charcoal from the kiln

6. Frequently monitor the kiln & remove chimneys and breathers upon complete carbonization

7. Once ready all air inlets are closed to let charcoal cool down for about 1 day. Then it is collected.

9. Sell to available buyers- e.g. motorcyclist, truck (wholesale buyers), domestic users

8. Sort and pack charcoal ready for sale

- About 4 bags of charcoal from one kiln equivalent to 164kg from 750 kg of wood.
- Improved my production by at least 50%.

Lessons from community learning activities

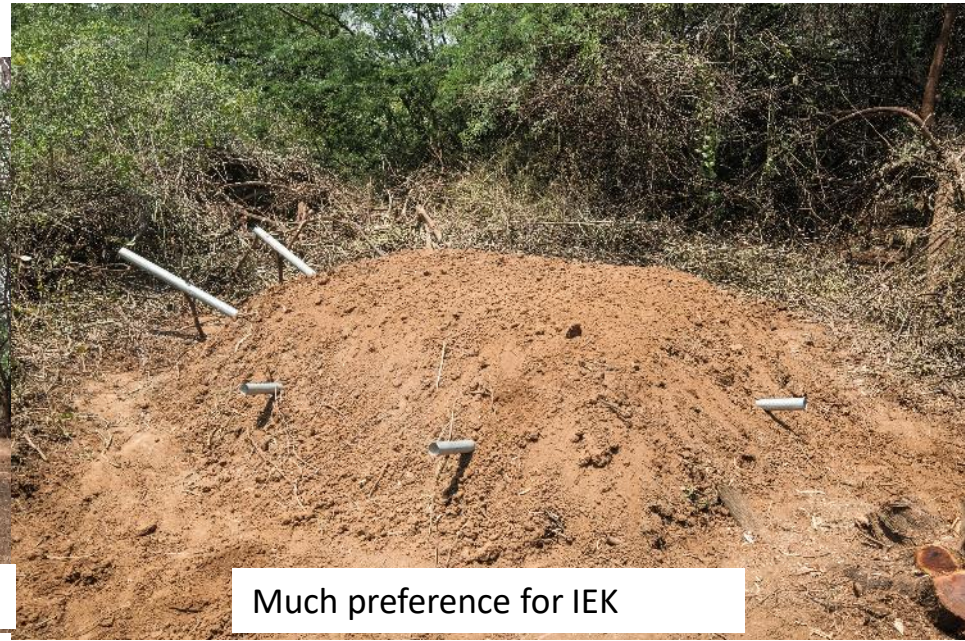
- A few community members have started managing invasive prosopis thickets individually or as a group.
- Preference for improved earth mound kiln (IEK) over drum kiln by producers

- Drum kiln preferred for home use and particularly by women and children
- Producers prefer a shorter drying period (not 7-14 days) due to pressing income needs.

- Monitoring kiln has been made easier through IEK- minimal visits compared to TEK.
- Some producers without IEK are creating a few holes on both sides of TEK for better carbonization- preference for IEK
- Many producers demoralised due to the current ban by the national government

Invasive Prosopis Management- in group

Invasive Prosopis Management-individual



Much preference for IEK

Benefits of invasive Prosopis management

- Growth of big stems
- Controlled prosopis thickets
- Good shade and recreation areas
- Farm boundary demarcation /fencing
- Freed cropping and grazing land

Growth of big stems

Good shade and recreational places

Benefits of improved earth kiln

- Less smoke produced
- Shorter production run (3-4 days)
- Minimal monitoring
- Strong and heavier charcoal
- Low charcoal dust produced
- More charcoal produced than in TEK

Quality charcoal- from IEK

Poor quality charcoal- from TEK

Recommendations

- Stakeholders' support to sustain community learning and uptake of sustainable practices
- Stakeholders to build artisan skills within CPAs to fabricate own chimneys/breathers
- GOK be persuaded to lift ban on Prosopis charcoal

Challenges

- Charcoal ban affected production frequency, volume, uptake of IEK and trade
- IEK equipment destroyed easily by heat
- Covid-19 pandemic slowed down community learning

Thank you !

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