



National Charcoal Survey of Kenya: Exploring potential for sustainable charcoal industry in East Africa



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Presentation structure

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About Us



- ESDA has been working in Kenya for 12 years.
- We are a joint venture partner of the UK-based ESD
- We have Expertise on clean and renewable energy solutions.
- Our clients include government, private sector, and international agencies - UN, WB, Devt partners.
- Staff have project design and implementation expertise across range of technologies, including biomass.

Introduction: Charcoal in East Africa (1)

- **TANZANIA**
- It is estimated that 15000 to 20000 bags of charcoal enter Dar es Salaam every day, that adds up to nearly 1 million tonnes of charcoal per year, (Nor-consult May 2002)
- A bag of charcoal (35kg) is Tsh.8000, a tone of charcoal is Tsh. 200,000.00 that means charcoal that is consumed in Dar alone is worth Tsh. 200 billion worth (USD 180 million) annually.
- We need to find out how much charcoal is produced and what it is worth to the national economy

Introduction: Charcoal in East Africa (2)

- UGANDA at A Glance
- There is large amount of wood-fuels, mainly charcoal entering Ugandan urban centers to satisfy the needs of households, tertiary, commercial and industrial sectors.
- With a population of about 22 million and a per capita consumption of charcoal of 88kg annually (REDC&ESDA), Uganda consumes a total of 1.94 million tones of charcoal.
- A kg of charcoal costs an average of Ush. 300.00 therefore charcoal is worth Ush. 58 billion to the economy (US \$ 290 million). Data needs verification.

Introduction: Charcoal in East Africa (2)

Kenya: Final Delivered Energy By Type, 2000 (MoE)

Energy Type	Total GJ (000)	Percentage
Firewood	251,680	36%
Wood for ChrcI	264,104	39%
Biomass waste	42,013	6%
Petroleum	124,960	20%
Electricity	9,834	1%
Total	692,863	100%



National Charcoal Surveys of Kenya

Acknowledgement

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- UoN - Statistics
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- UK Govt's Department for International Devt (DFID) for support

Goal, Rationale and Objectives

Goal: To put in place a framework for good governance of wood-fuel resources, particularly charcoal.

Rationale:

1. Minimize the negative impact on the environment
2. Enhance returns to sustainable producers.
3. Charcoal is the sole source of income for poorest households
4. Need for reliable supply to meet energy needs of poorer households.
5. Alternatives e.g. LPG inaccessible to poor people and in short supply.
6. Not streamlining industry may lead to charcoal deficits in the future,
7. Ensure there is fairness and equity along the supply chain
8. Minimize opportunities for graft in the charcoal industry.

Objectives of the project

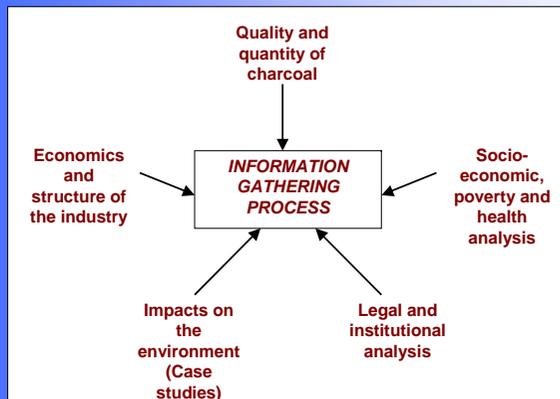
- To update and analyze information on the charcoal sector
- To heighten awareness and make public more knowledgeable on charcoal trade
- To develop and popularize a regulatory framework, national standards and certification process for sustainable charcoal production and trade in Kenya.

Research Methodology and Instruments

Study carried out in 24 randomly selected districts of Kenya, it involved:

1. Pre-survey appraisal to estimate the number of charcoal producers through informal interviews with community leaders, government officers, prominent charcoal producers, teachers
2. Structured interviews with charcoal traders - producers, transporters and vendors
3. Focused Group Discussion with traders, landowners and community leaders to firm up findings and assumptions
4. Video production and photography

Types of Information collected



Main findings (1)

- There are 200,000 producers operating in Kenya, and around half a million people (producers, transporters and vendors) involved directly in the charcoal trade (around half of these on a full time-basis) who support around 2.5 million dependents.
- The amount of charcoal produced each year in Kenya is 1.6 million tones. This is equivalent (by weight) to a third of Kenya's sugar cane production.
- The annual income from charcoal is around Kshs. 32 billion,(USD 400 million) almost equivalent to the income generated from Kenya's tea industry. This represents lost revenue of Kshs 5.1 billion (through VAT) that could be invested into making the industry sustainable

Main findings (2)

- Average incomes generated from charcoal are Kshs. 4,496 (USD 57) per month for producers, Kshs. 11,298 (USD 142) for transporters and Kshs. 7,503 (USD 95) for vendors.
- Charcoal is produced from trees obtained from a producer's own farm (44%), private land (38%), Government or County Council Land (13%) and communal land (5%).
- However, on average, more trees were removed from government forests in those districts neighbouring protected forests such as Nakuru, Kakamega, Nyeri and Trans Nzoia.





Main findings (3)

- Charcoal producers taking trees from Government forests ('Sneak and Snip' producers) tend to create charcoal in the most environmentally destructive way.
- Producers using branches from trees on their own land ('Sow and Reap' producers) tend to create charcoal in the most environmentally sensitive way.
- Producers making charcoal as a by-product of land clearance for settlement, pasture or agriculture ('Salvage' producers) are also environmentally destructive on a large scale. (Chapter 4 on types of charcoal producers)

Main findings (4)

- More than half of the producers interviewed are finding that their preferred tree (Acacia sp) for making charcoal is becoming scarce.
- Over 90% of charcoal producers are using inefficient, traditional earth kilns with recovery rates of as low as 10%
- The average cost of a mature, whole tree to a charcoal producer is Kshs. 583, as little as the price of a telephone scratch card (this is frequently obtained for 'free' in return for labour).



Economic Recommendations

- Charcoal industry is integral to the Kenyan economy. There is need to recognise the charcoal industry. A ban on production and transportation has not worked.
- Potential taxation and revenue collection from streamlined charcoal production needs to be channelled into the creation of a more sustainable industry.
- This could entail the establishment of a **Sustainable Wood Fuel Fund or Levy** that can be invested back, through tree nurseries and efficient community kilns managed by charcoal producers at the community and district level.

Environmental Recommendations

- State land needs to be allocated for sustainable charcoal production. Landowners are supportive of this model, and are ready to put aside land as well.
- 'Buffer zones', for sustainable charcoal production need to be introduced between protected forests and game reserves, and agricultural areas, to reduce escalating levels of wildlife and human conflict.
- Better regulations and guidance are needed on land-use, especially where *changes* in land-use are taking place to agriculture.
- Production of charcoal through Sow and Reap should be encouraged
- Need for efficient harvesting and conversion





There is need for provision of Efficient Community Kilns

- Efficient Charcoal kilns is a priority for all models
- Depending on community's life style, fixed or
- Mobile kilns could be made available



Social Recommendations

- Presently, the charcoal industry is organised informally, but it makes a substantial contribution to the livelihoods of the poor. Those involved in the industry want charcoal to be recognised as a legal economic activity.
- Charcoal traders can be organised into associations or cooperatives. Such associations would be self regulatory, and would encourage charcoal producers to practice sustainability, through developing standards and certification procedures.
- Organising charcoal traders into associations would enable them to negotiate with government, introduce efficient kilns, organise tree planting and institute better packaging and marketing of sustainable charcoal.

Charcoal industry will need better vending space



Policy recommendations (1)

- A regulatory framework should be put in place. Such a framework should:
- Outline standards and guidelines for the production of sustainable charcoal, as well as simple licensing procedures.
- Recognise charcoal associations

Policy recommendations (2)

- Encourage pilot projects to demonstrate that sustainable charcoal production can be practised. Pilots will demonstrate a suitable regulatory framework and practical standards. Any regulations need to be properly enforced through associations and local community leaders.
- A charcoal or wood-fuel fund or levy needs to be set up. This fund would be generated from taxation of charcoal and fines on illegal producers. Such a Fund could operate like the Road Levy or the Rural Electrification Fund, and any money collected re-invested into the charcoal industry.

The Next Steps (1)

- Get Government to recognize that the charcoal industry has to change through making a start at creating the right policy environment for it to become sustainable and properly regulated.
- Put in place pilot projects or zones of sustainable charcoal production to test what really works on the ground and to inform future legislation and functional management models that have representation at the national and district level.

The Next Steps (2)

- Work in detail on those standards, guidelines and a certification process that would be needed for sustainable charcoal production -- includes tree sp. selection, tree nurseries establishment for different eco-zones.
- Work on what form any regulation would take, how this might be practically enforced by communities and how a Levy towards a Fund might work at the community level.

Next Steps - Regional (3)

- Carry out similar studies in the East African region:
 - To update and analyze country information on the charcoal sector on a regular basis
 - To heighten awareness and make public more knowledgeable on charcoal trade
 - To develop and popularize a regulatory framework, national standards and certification process for sustainable charcoal production and trade
 - Lobby government to invest in biomass energy development
 - To monitor border leakages of woodfuel and charcoal in particular at Busia, Malaba, Namanga, Isabania, Sese islands, etc.

Making charcoal sustainable

- Packaging and labelling of sustainable charcoal to differentiate it from illegal charcoal production.
- Allocation of land for sustainable charcoal production and space for vending.
- Addressing the unchecked harvesting of trees without replacement
- Address inefficiencies during harvesting and conversion during charcoal production .
- Organize charcoal workers into associations or cooperatives.
- Training of charcoal workers to widen their skills in technical and economic issues.
- Better regulations and guidance on land-use, especially where changes in land-use are taking place

Enhancing livelihood Assets of charcoal traders

	Improvements	Vulnerability impacts
Physical	<ul style="list-style-type: none"> • Storage space • Designated selling areas • Improved infrastructure 	<ul style="list-style-type: none"> • Less frequent journeys, easy access to charcoal • Storage for times of shortage • Less scope for harassment for lack of licence • Better roads will reduce rainy season vulnerability
Social	<ul style="list-style-type: none"> • Business networks • Community groups 	<ul style="list-style-type: none"> • Collective bargaining power re: prices and quality of wood & charcoal • Improved security (collection in groups) • Shared resources, e.g. vehicles
Human	<ul style="list-style-type: none"> • Education 	<ul style="list-style-type: none"> • Training will increase opportunities to pursue alternatives in times of low supply & demand, or when modern fuels replace traditional fuels.
Natural	<ul style="list-style-type: none"> • Plantations/woodlots • Sustainable production 	<ul style="list-style-type: none"> • Increased supply, no shortage • Improved image of traditional fuel suppliers • Improved charcoal production processes

Thank You

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