

**4<sup>th</sup> GHANA RENEWABLE ENERGY FAIR**

*Presentation On:*

# **Sustainable Feedstock Supply For Charcoal Production**

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# Outline of Presentation

- ❖ Introduction
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- ❖ Key Challenges Facing the Charcoal Industry in Ghana
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  - ❑ *Effective Collaboration & Stakeholder engagement*
- ▶ Conclusion

**Key Question for REFLECTION?**

**Is Charcoal Production an Environmental Crisis  
OR Development Opportunity?**

"We do not inherit the Earth from our Ancestors,  
we borrow it from our Children" - *An Ancient Proverb*

# CONTEXT OF PRESENTATION

## (Policy Statement On Woodfuel)

- ❖ The Forestry Commission is committed to facilitating and advocating for widespread adoption of policies that support sustainable fuel alternatives, clean burning technologies and energy-poverty alleviation for those who depend on biomass as their primary source of fuel.
- ❖ The Forestry Commission envisage a Woodfuel sub-sector that is *socially responsible, ecologically sustainable and economically viable*.
- ❖ Take the necessary steps to mobilize necessary resources to promote forest conservation, poverty reduction, and good governance using the “nature, wealth, and power” approach.

# Introduction

- ❖ Charcoal is a vital source of energy for millions of people around the globe and one of the most commercialized resources in sub-Saharan Africa, yet policies to effectively govern the sector are lacking in many countries. Authorities in countries around the world tend to view charcoal production and use as an environmental and health problem.
- ❖ In Ghana, charcoal production is big business. About 80% of urban households rely on charcoal for their domestic energy and the charcoal industry employs more than a million people through its value chain.
- ❖ Charcoal production and usage is said to form the bulk of Ghana's energy supply and consumption with the product contributing more than 60 per cent to the energy mix.

## Introduction - *Ctnd.*

- ❖ Charcoal is also said to be the main fuel that is used by majority of households in the urban centres.
- ❖ Producers suffer from negative health impacts of the production process and the way charcoal is produced contributes to deforestation and to GHG emissions.
- ❖ Deforestation rates in Ghana currently stands at 2% per annum.

# Introduction - *Ctnd.*

- ❑ The charcoal industry is largely informal and unregulated; plagued with inefficient production technologies leading to low quality charcoal with high wastage and high levels of pollution.
- ❑ However, if managed properly charcoal can provide a low-cost and locally available energy source that has the potential to become sustainable and contribute significantly to poverty alleviation.
- ❑ Wood charcoal production is a profitable source of income for many urban and rural communities. Ghana produces about 1.4 million tonnes of wood charcoal per year. The majority of this is produced at the household level or by micro and small enterprises (MSEs).

# Introduction - *Ctnd.*

- ❖ The popularity of charcoal among the majority of Ghanaians point to the fact that the existent informal charcoal industry, even without regulation, has grown to become a major industry.
- ❖ An estimated revenue loss of over US\$ 100 million per year that the government of Ghana incurs due to foregone taxes and licensing fees from charcoal production and utilization (particularly for domestic use).
- ❖ The charcoal industry in Ghana can only attain sustainability and reduce its environmental impact through sector-wide reforms.
- ❖ Various studies have shown that charcoal will continue to feature prominently in future energy mix, hence the need to introduce integrated policies to regulate and formalize the charcoal sector.

# Key Challenges Facing the Charcoal Industry in Ghana

- ❖ Charcoal production is recognized globally as one of the key drivers of deforestation and therefore contributes towards climate change.
- ❖ The charcoal production industry in Ghana is characterised by:
  - ❑ Unsustainable raw material base,
  - ❑ Inefficient production methods, and
  - ❑ Major negative environmental consequences of forest degradation and deforestation leading to reduction in carbon sequestration, loss of biodiversity and desertification.
- ❖ Previously, most wood supply for charcoal production was from off-reserve sources.
- ❖ Increasingly, the forest reserves are also being exploited for illegal charcoal production.

# Key Challenges of the Charcoal Industry in Ghana - Cntd.

- ❖ The charcoal industry in Ghana is also characterized by lack of: supply planning, demand management and institutional capacity development & inter-agency collaboration.
- ❖ Poor technology adaptation is also responsible for unsustainable production and environmental degradation, leading to the low carbonization efficiency, often below 20%
- ❖ Poor perception and in some cases the negative image associated with charcoal production.
- ❖ Lack of investments in efficient technologies and marketing.

# Strategies to Promote Sustainable Charcoal Production

- ❖ To address the above-listed challenges and to achieve feedstock sustainability, there is the need to take a closer look at all aspects of the charcoal value chain including:
  - i. **Sustainable development of feedstock**
  - ii. **Carbonization technologies,**
  - iii. **Efficient & cost effective transportation system,**
  - iv. **Distribution and demand side management (marketing).**
- ❖ This constitute a holistic approach that considers the full production to end-user cycle along the value chain.

# Sustainable Feedstock Production Under The Ghana Forest Plantation Strategy GFPS (2016-2040),

- ❖ *The GFPS is a blueprint for landscape restoration in Ghana over the next 25 years.*
- ❑ Strategic and decisive actions to restore our deforested and degraded landscapes.
- ❑ This Strategy has been developed through a multi-stakeholder consultative process, in line with the FC's vision *“to leave future generations and their communities with richer, better and more valuable forest and wildlife endowments than we inherited”*
- ❑ The GFPS clearly outlines the strategic pathways and resources required to achieve sustainable supply of planted forest goods and services so as to deliver a range of economic, social and environmental benefits through landscape restoration.
- ❑ Landscape restoration strategies proposed include trees-on-farm (climate smart agriculture), woodlot establishment, enrichment planting interventions, watershed restoration, etc., which together with commercial forest plantation development will significantly contribute to achieving Ghana's commitments both under the Bonn Challenge - a global landscape restoration initiative, as well as the Paris Agreement on Climate Change.

# Recommended Species for Forest Plantation Dev't.

- ❖ The GFPS recommends the following species for planting as feedstock for charcoal production because of their relatively short rotation periods:
  1. Cassia (*Senna siamia*)
  2. Eucalyptus spp. (*Eucalyptus deglupta*)
  3. Neem (*Azadirachta indica*)
- ❖ Yorke (*Broussonetia papyrifera*) - Very invasive and has huge potential for sustainable charcoal production.

# Other Interventions by FC to Promote Sustainable Charcoal Production:

## 1. Strengthen Law Enforcement.

To encourage investments in forest plantation development and efficient technology for sustainable charcoal production, the Forestry Commission has put in place necessary mechanisms for effective enforcement of all laws and regulations related to charcoal production and marketing in order to reduce illegal wood harvesting and charcoal production and to create a market for sustainable wood and charcoal production.

# Other Interventions - *Cntd.*

## 2. Regulate Sustainable Charcoal Production.

Put in place stringent measures to regulate charcoal export in order to *establish a professional and regulated charcoal value chain that promotes sustainable and efficient production of charcoal as a business model. the big question is: **To ban or not to ban charcoal export?***

## 3. Enhance Livelihoods.

The Forestry Commission recognizes the role that livelihoods and income generation play in charcoal production and marketing and, with this recognition, will strive to secure livelihoods for legal producers and find alternative livelihoods such as afforestation and tree planting programmes for displaced illegal operators.

## **Other Interventions - *Cntd.***

### **4. Promote Information Dissemination, Awareness Creation and Behaviour-Change through Effective Communications.**

The FC will collaborate with partner organizations to develop and disseminate information and raise awareness in order to transform the behaviours of industry players and other key stakeholders needed to achieve policy objectives and goals, and to sustain other activities stated above.

### **5. Charcoal Briquettes Production from alternative feedstock**

Facilitate the development of commercially viable briquette/ pellet production plants, with market linkages to proximate industrial and institutional buyers (e.g., fruit juice processing plants, hospitals, schools, textile factories etc.).

## Other Interventions - *Cntd.*

- ❑ Facilitate access to land acquisition for the establishment of woodlots; specifically for charcoal production.
- ❑ Plans far advanced to introduce a permit system for harvesting of wood for charcoal production (Chain of Custody).
- ❑ Link issuance of charcoal conveyance certificates to permit system (Tracking System).
- ❑ Monitoring production and distribution of charcoal along the charcoal value chain.

# THRUST OF APPROACH

**TOWARDS SUSTAINABLE FEEDSTOCK  
PRODUCTION**

# Approaches

- ❖ Sector-Wide policy Reforms,
- ❖ Formalization and modernization of the sector,
- ❖ Facilitate the establishment of private woodlots specifically for charcoal production,
- ❖ Restructure the granting of tree felling permit system from outside forest reserves through broad consultations with key stakeholders (bottom-up),
- ❖ Emphasis on cross-sectoral linkages (collaboration with all relevant state and no-state actors),
- ❖ collaboration with relevant stakeholders to overcome investment barriers and effective coordination at all levels including governmental agencies, NGO's, Regional & MMD Coordinating Councils, Traditional Authorities etc. etc.

# Picture Galleries

▶ **Pilot project on Sustainable  
Charcoal Production Using Cassia**

## 9 Years old Cassia plantation at Bosomkese FR - Yamfo







# Metal Carbonization Kilns







# Conclusions

- ❖ Charcoal production and trade constitute an important source of rural livelihood and if well developed could create a major viable rural base enterprise without adversely affecting the forest resource base of the country.
- ▶ Sustainable feedstock production requires an in-depth understanding of the full production-to-use cycle, and investments in improvement should be based on this understanding.
- ▶ Actively promote the adoption of appropriate technology that strikes a balance between efficient production and reduced emission of greenhouse gases.
- ▶ Sustainable charcoal production should aim at **promoting forest conservation, poverty reduction, and good governance using the “nature, wealth, and power” approach.**