PRIVATE SECTOR INVESTMENT INCENTIVES FOR BIOMASS PRODUCTION: CASE OF NFA

PRESENTED BY

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During the National dissemination and policy engagement workshop on identification of practical incentives for advancing sustainable Biomass Energy Production within Central Forest Reserves and Forest Landscapes in Uganda.

Organized by Environmental Alert in partnership with financial support from Norad within the framework of the project titled, ‘Increasing access to sustainable and renewable energy alternatives in the AlbertineGraben’ that is implemented by WWF-Uganda Country Office.”
OUTLINE OF THE PRESENTATION

- Introduction
  - About NFA and Uganda
  - Biomass production and demand
- Incentives for biomass production
- Challenges and bottlenecks
- Recommendations
ABOUT NFA

Established under Section 52 of NFTPA 2003:

- Develop and manage all CFRs;
- Promote innovative approaches for local community participation;
- Establish procedures for the sustainable utilisation of Uganda’s forest resources by and for the benefit of the people of Uganda.

Vision: A world-class, leader in sustainable forestry management.

Mission: “To sustainably manage and develop the country’s CFR resources, and provide quality forestry products and services for socio-economic development of Uganda.

Funding: Government of Uganda, Development Partners - UNHRC, USAID, INBAR, Corporate bodies including Banks and NGOs.
UGANDA (UN DATA 2020)

- Population (2020) – 46 million
- Pop. growth - 3.2%
- Real GDP growth (2017) – 5.5%
- Forest cover 1900 – 53%
- Forest cover 2015 – 15%
- Forest cover 2020 – 12.4%.
- Wood fuel >80% domestic energy
- Population density - 229 per Km² (593 people per mi²).
- Land area 199,810Km²
- 25.7 % urban population (11,775,012)
- Median age 16.7 years.

Source: GoU - Uganda Government
UGANDA GDP US$ Bn

SOURCE: TRADINGECONOMICS.COM | WORLD BANK
BIOMASS PRODUCTION AND DEMAND

- Quality and sustainable biomass production is still in its infancy stage in Uganda (Nabanyumya 2016).

- Natural Forest resources are disappearing rapidly (State of the World Forests Report 2020). For Uganda loss is over 120,000/yr.

- Demand for quality biomass energy and timber products from investors in and out of CFRs remains high.
# NET LOSS OF FOREST COVER 1990-2017 (IN HECTARES)

<table>
<thead>
<tr>
<th>Forest Type</th>
<th>1990</th>
<th>2000</th>
<th>2005</th>
<th>2010</th>
<th>2015</th>
<th>2017</th>
<th>Relative forest cover change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Private</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>THF well stocked</td>
<td>174,006</td>
<td>146,211</td>
<td>80,034</td>
<td>53,325</td>
<td>34,064</td>
<td>31,475</td>
<td>-82%</td>
</tr>
<tr>
<td>THF degraded</td>
<td>176,014</td>
<td>178,097</td>
<td>153,049</td>
<td>64,542</td>
<td>39,732</td>
<td>39,270</td>
<td>-78%</td>
</tr>
<tr>
<td>Woodland</td>
<td>2,963,088</td>
<td>2,025,737</td>
<td>1,836,577</td>
<td>705,493</td>
<td>646,412</td>
<td>608,368</td>
<td>-79%</td>
</tr>
<tr>
<td>Plantation</td>
<td>12,738</td>
<td>7,198</td>
<td>11,727</td>
<td>18,970</td>
<td>45,443</td>
<td>88,551</td>
<td>595%</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>3,325,846</td>
<td>2,357,243</td>
<td>2,081,388</td>
<td>842,330</td>
<td>765,651</td>
<td>767,664</td>
<td>-77%</td>
</tr>
<tr>
<td><strong>Protected</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>THF well stocked</td>
<td>477,104</td>
<td>557,719</td>
<td>520,923</td>
<td>455,058</td>
<td>495,059</td>
<td>492,654</td>
<td>3%</td>
</tr>
<tr>
<td>THF degraded</td>
<td>97,048</td>
<td>48,454</td>
<td>38,645</td>
<td>42,438</td>
<td>62,132</td>
<td>62,861</td>
<td>-35%</td>
</tr>
<tr>
<td>Woodland</td>
<td>1,011,420</td>
<td>809,004</td>
<td>941,421</td>
<td>585,346</td>
<td>566,526</td>
<td>630,635</td>
<td>-38%</td>
</tr>
<tr>
<td>Plantation</td>
<td>22,328</td>
<td>14,144</td>
<td>21,799</td>
<td>30,890</td>
<td>62,280</td>
<td>71,378</td>
<td>220%</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>1,607,900</td>
<td>1,429,321</td>
<td>1,522,788</td>
<td>1,113,731</td>
<td>1,185,997</td>
<td>1,257,528</td>
<td>-22%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>4,933,746</td>
<td>3,786,564</td>
<td>3,604,176</td>
<td>1,956,061</td>
<td>1,951,648</td>
<td>2,025,192</td>
<td>-59%</td>
</tr>
<tr>
<td>% of total land area</td>
<td>24%</td>
<td>18%</td>
<td>19%</td>
<td>9%</td>
<td>9%</td>
<td>10%</td>
<td>-58%</td>
</tr>
<tr>
<td>National land area* (ha)</td>
<td>20,465,745</td>
<td>20,474,456</td>
<td>20,448,859</td>
<td>20,866,959</td>
<td>20,405,768</td>
<td>20,409,730</td>
<td>Source: NFA internal data</td>
</tr>
</tbody>
</table>
DIRECT INCENTIVES

- Land licensing and allocation through CFM agreements for biomass production below market rate (UGX 70,000 - 100,000):
  - a. 50 Km radius @ UGX 50,000;
  - b. 50 – 150Km radius UGX 22,000/ha/yr.
  - c. >150Km radius at UGX 15,000/ha/yr.

- Quality seed and seedlings (*Eucalyptus- grandis* and *camaldulensis*, bamboo, *Pinus Caribaeae*, native species like *Maesopsis* (Musizi)).
....INDIRECT INCENTIVES

Provision of extension services:

- CFR land marking;
- Construct access roads.
INDIRECT INCENTIVES

- Carbon credits in Rwoho-Bugamba CFR;
- Technical advice in the field and through published guides, data and information on site and species matching:
  - Guidelines on poles management;
  - Pest management;
  - Tending;
  - Fire management.
INCENTIVES HAVE LED TO 4594 LICENSED PRIVATE SECTOR TREE PLANTERS

<table>
<thead>
<tr>
<th>No.</th>
<th>Area</th>
<th>Category</th>
<th>No. of Licensees</th>
<th>Area planted</th>
<th>Area licensed</th>
<th>Percentage planted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1-99</td>
<td>Small</td>
<td>4,026</td>
<td>29,322</td>
<td>54,113</td>
<td>54%</td>
</tr>
<tr>
<td>2</td>
<td>100-499</td>
<td>Medium</td>
<td>503</td>
<td>34,067</td>
<td>49,891</td>
<td>68%</td>
</tr>
<tr>
<td>3</td>
<td>500 – 10,000</td>
<td>Large</td>
<td>65</td>
<td>30,782</td>
<td>89,225</td>
<td>34%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>4,594</td>
<td>94,169</td>
<td>193,229</td>
<td>49%</td>
</tr>
</tbody>
</table>
# NFA Plantation Management Areas

<table>
<thead>
<tr>
<th>Location</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lendu</td>
<td>2,083</td>
</tr>
<tr>
<td>2. Opit</td>
<td>298</td>
</tr>
<tr>
<td>3. Mafuga</td>
<td>2,258</td>
</tr>
<tr>
<td>4. Mbarara</td>
<td>2,858</td>
</tr>
<tr>
<td>5. Katuugo</td>
<td>502</td>
</tr>
<tr>
<td>6. South Busoga</td>
<td>1,657</td>
</tr>
</tbody>
</table>

**Total** 11,156

Fort Portal Seed of *Eucalyptus grandis*
## NFA Timber Plantations by Age Class & Area

<table>
<thead>
<tr>
<th>Age Class (Years)</th>
<th>Area (Ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3</td>
<td>5,000</td>
</tr>
<tr>
<td>4-7</td>
<td>300</td>
</tr>
<tr>
<td>8-11</td>
<td>100</td>
</tr>
<tr>
<td>12-15</td>
<td>5,656</td>
</tr>
<tr>
<td>16-19</td>
<td>100</td>
</tr>
<tr>
<td>20+</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11,156</strong></td>
</tr>
</tbody>
</table>
CHALLENGES AND BOTTLENECKS TO ADVANCING INCENTIVES

1. **Cost of investment is high, and yet it is required up front.** UGX 1.5 - 3 million/Ha for the 1st three years for site preparation, quality inputs (seeds, seedlings), planting, tending and protection (risks of fire, pests), technical/expert advice.

2. **Commercial biomass production (for fuel wood, charcoal etc.) is economically not viable due to the illegal trade, unsustainable timber harvesting** are a threat to long-term, sustainable business opportunities.

3. **Lack of reliable information in really time** - poor data/information dissemination/knowledge sharing and lack of local expertise: There is a lack of awareness and information on biomass production and supply value chain.

4. **Lack standards on biomass products** – harvesting young and poor/high quality logs.
FACTORS AFFECTING LONG-TERM GLOBAL DEMAND FOR BIOMASS (FOREST) PRODUCTS (source: UN FAO)

- **Demographic changes**: 7.8 billion (2020), 8.5Bn (2030) and 9.7Bn (2050). Driven by pop. growth in developing countries (UN, 2020).

- **Continued economic growth**: Projected to grow to US$100 trillion by 2030. (to grow 5.8% in 2021), *World Economic Outlook June 2020*).

- **Environmental policies and regulations**: More natural forests will be excluded from biomass wood production.

- **Energy policies**: Increased use of wood biomass increasingly encouraged.

- **Plantation forests** as the major source of biomass wood supply.

- **Technological developments**: Increased plantation productivity (through tree improvement, reduced wood requirements owing to expanded recycling, higher recovery, wider use of new composite products and production of cellulosic biofuel
WIDER USE OF NEW COMPOSITE PRODUCTS

Source: Tetris L and D-Kuru - Own work, CC BY-SA 3.0 at, https://commons.wikimedia.org/w/index.php?curid=6187400
INCREASED PLANTATION PRODUCTIVITY

Source: https://www.woodbusiness.ca/2020-global-lumber-markets-outlook/2020
RECOMMENDATIONS TO ENHANCE ACCESS TO INCENTIVES UNDER NFA

1. **Set Standards/International standards and regulate the illegal trade in biomass products, poles/fuel, wood, charcoal, etc.**

2. **Strengthening Forest Law Enforcement** and governance through professional investigation and prosecution of environmental and forestry crimes, and strengthen the policing to protect forests against illegal activities.

3. **Continue the support under Community Tree Planting Project (CTPP)** for sustainable tree planting - to increase forest cover from the current 12.4% to 18% by 2020 - 2025.

4. **Awareness-raising and expert information sharing on** the available options (inputs, timber values, legal procedure, financial returns, risks.)
FORESTRY FOR WEALTH CREATION AND PROSPERITY

PROOF THAT MONEY GROWS ON TREES

REFERENCES AND SOURCES OF INFORMATION

5. By Tetris L - Own work, CC BY 3.0, https://commons.wikimedia.org/w/index.php?curid=3929856
7. Tetris L
8. LTS International – August 2005 (P D Hardcastle and David Grundy with Cornelius Kazoora and Feddy Mwerinde). Improving the Investment Environment for Private Sector Plantation Forestry Development in Uganda;
END

QUESTIONS ?