PRACTICAL INCENTIVES FOR ADVANCED SUSTAINABLE BIOMASS ENERGY PRODUCTION WITHIN FOREST RESERVES AND FOREST LAND SCAPES IN UGANDA

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OUTLINE

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- Lessons and experiences from other countries
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- Policy recommendations

Background & Context

- A quadruplicate of Uganda's Challenges
  - High population growth rate (opportunity too!)
  - High influx refugees
  - High dependence on its natural resources, land and vegetation including forests
  - Lack of diversity of energy sources, lack of access to existing alternatives and thus overdependence on biomass as the main source of energy for HHs ((90%) and rural economy (78%) culminating in heavy forest cover loss.

Background & Context cont'd

- The Ugandan forest cover currently stands at 2,500,000 hectares of which 64% is woodland, 20% tropical high forest and 16% of plantations and scattered trees in farmland.
- Forest loss rate ≈50,147 ha (Annually),
- Uganda has a total of 8,079,622 ha of land available for forest landscape restoration
- Government's Commitment to restoration ≈2.5 million hectares by 2030
- Current plantation (response restoration) ≈ 10,000ha ≈ 20% of the annual loss.
- Dedicated stands for energy production in CFRs? --3200 ha !

Background & Context cont'd

- The current consumption of wood biomass for energy stands ≈57,272,101 m^3 p.a. and grows at 3.2 % in line with population growth rate.
- The capacity of sustainable supply from current forests ≈26 million tons equivalent (32.5 million m3) of raw wood per annum
- ≈ 57% of the wood biomass annual demand implying a deficit of 43%.
- Demand satiety requires ≈ 2 million ha of woodland (30m^3/ha/yr.) or about 300,000 ha (200m^3/ha/yr.) of well managed plantation.

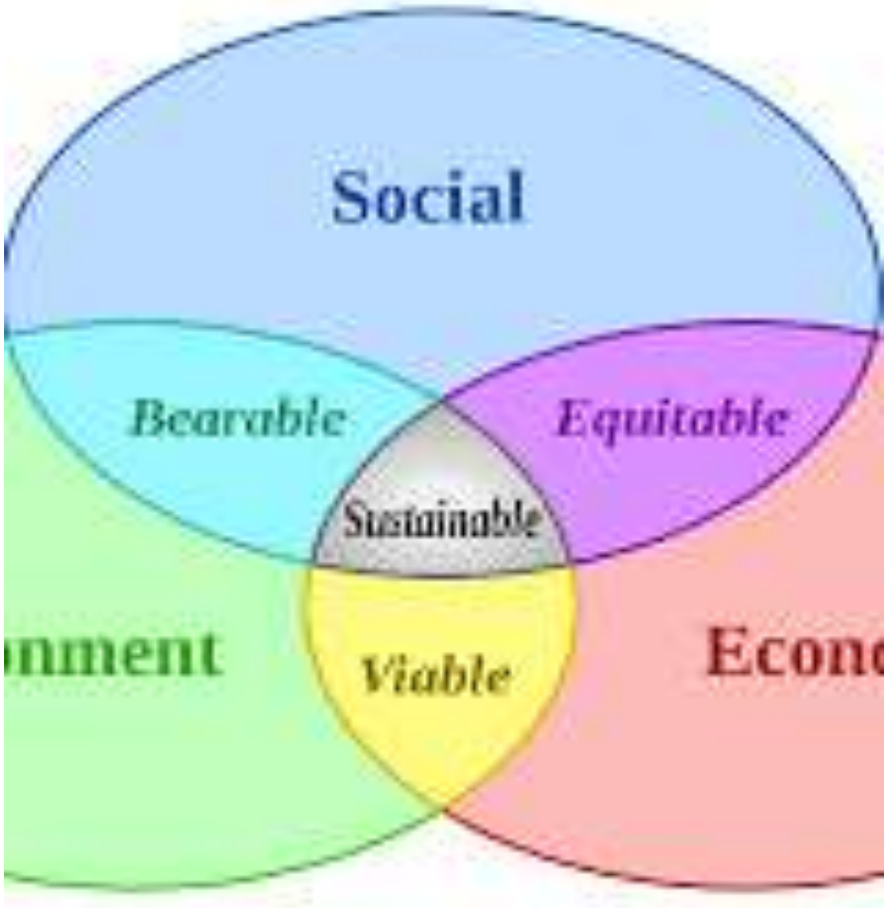
Background & Context cont'd

What can be done given the status quo?

- Should we stop refugees? Or should we change existing strategies of managing forests and biomass for sustainability of production and supply?
- Do we have any strategies for biomass production? –who is responsible?, how effective? and which are the gaps?
- How can sustainable biomass production be achieved in CFRs and Forest Landscapes?

Sustain-able Biomass Production

- Need for a balance between economics, environ.-health and social equity during the implementation of strategies.



The concept of Incentives

A single agreed definition does not exist

- incentives as signals that motivate action ((Meijerink, 1997).
- "incitement and inducement of action"(Enters, 2001)
- In development projects, incentives have been described as "bribes" and "sweeteners" (Smith, 1998)
- In the context of sustainable biomass production - incentives could be viewed as **policy instruments** that increase the **comparative advantage** of forest plantations and thus **stimulate investments** in plantation establishment and management for energy production."

Concept of Incentives cont'd..

- This definition is broader than subsidies that are viewed as payments or services provided to reduce the costs or raise the returns of an activity.
- The broader definition includes research and extension, which are important elements in supporting plantation development

Types/forms of Incentives in Forestry

- Direct incentives
- Indirect incentives
  - Fiscal incentives
  - Non-fiscal incentives

Direct Incentives

Direct incentives include;

- inputs such as seedlings and fertilizers,
- specific provision of local infrastructure,
- grants, tax concessions, differential fees, subsidized loans and
- cost-sharing arrangements

Indirect Incentives

Can be divided into;

- (a) variable incentives.
- (b). Enabling incentives

- Variable incentives are economic factors that may be shifted to affect the net returns that producers earn from plantations. They include factors such as prices, exchange rates, trade restrictions, interest rate policies, and general taxes (e.g. income tax) and subsidies.

- Enabling incentives are elements in the broader environment that affect decision-making. They include land tenure and resource security, socio-economic conditions, producer support services and infrastructure

Fiscal Vs. Non Fiscal Incentives

- Fiscal –these basically engage beneficiaries on monetary terms e.g. subsidized cash loans, Land rent at low price rates, SPGS (30% refund on initial investment etc)
- Non-Fiscal – Non monetary e.g. CFM, free seedlings, tax exemptions, …..

Summary on Incentives

- Incentives are essential components of regulatory measures to encourage the production, use and trade of biomass energy.
- Incentives can be;
  - Fiscal incentives/direct
  - Non fiscal incentives/indirect
- Fiscal -Exemptions from value added taxes, corporate taxes, and excise taxes. Furthermore, government financial institutions are required to provide financial services and benefits to local companies engaged in the bioenergy/biomass sector
- Non Fiscal- Land allocation, collaborative management, provision of licenses to plant in CFRs and providing subsides on extension services and seedlings.

Incentives Vs. Strategies

- Strategies should be basically action plans with specific targets to achieve e.g. increase stocking density, replanting or enrichments –the target –biomass energy
- But, incentives as already discussed are "catalysts", "baits", "enablers", "push buttons" of the set strategy to achieve the desired outcome.
- *Any other conceptions are welcome!*

Existing Strategies to sustain biomass production

- Leasing out degraded land for restocking in CFRs-NFA
- Deliberate support for establishment of biomass energy plantations in CFRs [SPGS)
- Institutional support for plantation and woodlots establishment (UNHCR-NFA/World Vision)
- Support of farmer managed natural regeneration (FMNR) - World Agroforestry Centre in collaboration with World Vision + NFA as a partner (Nakasongola, Kibaale, Kotido and Abim)
- Private sector players –Tea estates, sugar mill companies, Tobacco companies for biomass for energy production.

Strategies cont'd..

- Incentivizing tree planting for ecosystem restoration and energy production
- NFA incentives on the above include;
  - Distribution of 51 million seedlings to the public under the national community tree planting programme (NCTPP) from 2009 to-date
  - Allocation of 3,200 ha of land for dedicated biomass production; part of it is established as a demonstration centre in Kasagala CFR
  - Importation of seeds of tree species for biomass production such as Eucalyptus paniculata, E. closiana and bamboo.
  - What are about LGs investing in LFRs??

Diagnosis of existing strategies and incentive schemes

- In light of the "sustainability" analogy, how effective are the existing strategies for stimulating biomass for energy production in Uganda?
- What about the incentives? Are they the desired *bait* to stimulate interest among several stakeholders in Private sector & corporate business?
- What are gaps & where do they exist?

Cases studies of Biomass Cont'd

The case of Kenya

- The integration of trees in agriculture systems
  - Government of Kenya has been involved in promoting tree planting at the farm level with the aim of increasing tree cover to 10% by the year 2030. **CBOs and NGOs are playing a supporting and at times equal partner roles**
- Allocation of gazetted plantation area for fuel wood production
- Direct support to Out grower tree schemes by central gov't (technical advice on forestry practices, provision of planting material & contractual wards)
- Efficient management of woodlands and rangelands (thru-enrichment planting, controlled harvesting for charcoal and provision of more efficient charcoal kilns).
- Promotion of Use of alternative biomass energy technologies (Gasification, briquetting, biomass pellets as alternatives to charcoal).

Incentives for biomass production in Kenya

- Investors in the energy sector enjoy various incentives;
  - ✓ including a zero rate on import duty and VAT exemption on renewable energy equipment;
  - ✓ exemption from tax on interest paid on loans from foreign sources;
  - ✓ exemption from payment of stamp duty in respect of certain instruments;
  - ✓ exemption from withholding tax on payments made to a non-resident for specific services rendered under a power purchase agreement.

Cases studies Cont'd

The case of Tanzania

- ≈ 35 million ha of forests and woodlands, covering 40 % of the country's total land area.
- 52 % of the forests and woodlands in the country are within protected areas, and the remaining percentage is on village or general (*de facto* open access) lands.
- country lost an average of 403,000 ha (about 1.02 %) of its forests and woodlands per year during the period 1990–2000
- The total forest plantation area in Tanzania is about 100, 000 ha. Most of these are for timber and pulp production.
- Few plantations are established purely for the production of fuel wood wood- mainly target curing tea and charcoal production.

Tanzanian case cont'd

Strategies for more sustainable production and use of biomass

- Tree enrichment planting and woodland management: To ensure sustainable production and source of income, trees are being nursed continuously to replace the wood used for charcoal.
- Promotion of more efficient stoves. With improved brick kilns, less wood is needed to produce the same amount of charcoal (3–4 tons of wood per ton of charcoal).
- Promotion and Marketing of Sustainable Eco-Charcoal sold directly to big consumers and in urban settles, SMEs and hoteliers.
- Supporting charcoal value chain players to shift charcoal business from the informal to the formal sector of the economy to create a win-win scenario.

Tanzania incentives package

- No data found for CFRs!
  - Not much activity is permitted in CFRs
  - Some CFM but for non-wood products
- However,
  - In LFRs joint venture investments between local government and communities have been used
  - Dedicated energy spp planted in savannah grass land to provide for charcoal production—also to protect game reserves.

Lessons and experiences from other countries

The case of USA federal incentives

In US various incentive programs to exist to encourage the use of woody biomass.

- ❖ funding programs target; R&D of new technologies and investment in and use of renewable forms of energy.
- ❖ The Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007 (U.S. DOE, 2007) provide several incentives that apply to woody biomass.
  - Tax credits are available for those who produce energy from forest residues and woodlot to generate lectricity.
  - Using waste wood from any source enables facilities to earn 0.75 cents per kilowatt-hour (kWh) in tax credits (NRBP, 2014).

Lessons from USA cont'd

- Grants for Small Enterprises, Training, and Outreach
  - Millions of dollars in grants awarded to small enterprises, universities, and research institutions to develop new uses for woody biomass, and to develop training and outreach programs.
- Incentives for Biomass Energy Producers
  - Federal gov't assist agricultural producers and rural small businesses in planning and preparing feasibility studies for renewable energy projects.

Lessons cont'd

The Indonesian Case

- Indonesia also gives income tax incentives for renewable energy industry as Direct Fiscal Incentives
- Income tax incentives, VAT incentives, and also custom incentives.
- VAT incentives given for import of machine and equipment, either in form of Completely Build Up or Completely Knock Down. But, spare part is excluded from this incentive.
- Custom incentives are also given for renewable energy industry in order to boost investment in this sector.
- In income tax incentives, government reduces net income amount up to 30% of investment. This amount is allocated for six years, with each years' amount is 5% of investment.

Possible applicability of learned lessons in Uganda

To stimulate private sector investments in sustainable biomass energy production in LFR & CFRs.

- Address the low funding of the biomass energy subsector, which has undermined the capacity
- Improve the investment environment for the private sector through market based incentives,
  - Tax exemptions on inputs,
  - Reduced tax tariffs on technologies
  - Provide low land rent rates in CFR for private investors
  - Give priority to subsides in biomass energy co-cogeneration
  - Support private & gov't partnerships to biomass energy produces with potential to supply to the national grid.

Application continued…

- Make structural adjustments to widen the contribution of biomass to the national energy supply part from woody biomass.
  - without structural changes to the energy system, the production of biomass energy crops and removal of biomass residues from CFR and LFRS for energy production is less integrated into the mix.
- incentive schemes should focus on the provision of micro-credit facilities or low-interest loans and loan guarantees to Private sector groups/individuals and CBOs for the cultivation of biomass or to build their own processing facilities

Application Cont'd

- Need to re-invent the wheel [go back to some sustainable tricks of the past]
- Example- encourage boundary planting and inter blocks strip planting in CFRs with fast growing spp., targeting biomass for energy production.

  -Bamboo could be a target species for this because its non-invasive.

  -Other spp., up for discussions!

Actions for Grasslands within CFRs

The following are recommended actions;

- Boundary planting around settlements in CFR targeting charcoal production
- Degazetting some patches and distribution to organized groups for restocking with spp for charcoal production.
- Potential areas include; Apach, Nakasongola, Karamoja, Nebbi, Arua, Ajumani, Bulisa escarpment [Wanseko, Butyaba]
- Which species? -Species should be indigenous with high regeneration potential?? –perhaps otherwise!
- Who manages what? – Joint venture with formal charcoal producers, locals or CFM? ---aim at a win-win scenerio
- Promote using which pack of incentives?-provision of resource security???, address land tenure and ownership rights?
- Need to shift focus from only charcoal to other technologies that could better utilize biomass in grassland for energy-Briquettes??, Gasification?-Co-generation of power?

Conclusion

- Biomass for energy stimulation will in the future be best tagged to establishing energy plantations and this could be best suited in the CFRs.
- LFRs could be a good ground for fully fledged biomass for energy plantations but there is need to address the disincentives of Poor Resources Governance (chain of custody, tenure and resource ownership, political interference thereof).
- Indirect or enabling incentives such as good governance, clear tenure arrangements, research and technical assistance, and pushing for well-established markets could have a greater influence than direct incentives such as free seedlings, subsidized credit or cost-sharing of planting expenses. This has been the case in Latin America & developed Pacific Asia (New Zealand, and Australia
- However, in an environment characterized by serious disincentives (e.g. complex requirements to obtain permits for cutting, transporting and processing wood biomass to energy, inconsistent policies, high land prices, high interest rates, uncertain marketing opportunities), direct incentives may have only big effects. This has been true in Indonesia, Malaysia and China more direct fiscal incentives have been the game changer. And these must be competitive enough to lure investors from other enterprises
- investments become forthcoming when risks are perceived to be low and governments send out unambiguous signals in support of private sector involvement in plantation development

Policy recommendations

- As energy policy decisions on biomass affect the rural economy, the social benefits MUST feature more prominently.
  - policies should incorporate a description of the mechanism for implementing decisions in a manner that is appropriate to the interests, needs and social custom of local communities.
- Initialization of policy premises is necessary so that socio-economic dimensions can be properly addressed and for diffusion to become easier to achieve.
- Policy should have a well-defined objective addressing a specific issue, which may be of concern or interest to the energy sector (biomass energy investors), rather than the general economy.

Policy Recommendations cont'd..

Duty Holders – MWLE, MOEMD, FSSD & NFA should collaborate to;

- Provide a stable and coherent Regulations/legislations that are supportive of economic activities to encourage investment in biomass energy.
- Ensure that other (non-forestry) policies are aligned so that plantation investment can occur on a level playing field.
- Develop strong industry clusters targeting biomass energy production including supporting infrastructure, a competent labour force, as well as appropriate practices and technologies.
- Develop high quality resource information for policy-making, forecasting, planning and monitoring and make independent and objective information easily accessible and available.
- Encourage a healthy debate and discussion on the merits and reasons for offering particular incentives with stakeholders in private sector, research institutions and foreign players.

Recommendations cont'd

At the regional level,

- Co-operation between countries through networking mechanisms is needed to promote biomass development and use.
- To combat short-term financing problems, especially for small-scale biomass for energy projects, the industry must have the ability to develop a self-sustaining business structure through market development.
- Involve support from both the public and private sectors to establish an appropriate financing scheme, aimed at the deployment of renewable technologies along with the establishment of a local industry and training infrastructure.

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Thank you All

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