Improving the sustainability of bioenergy via Agro-Environmental Zoning

South-South Lessons

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African Carbon Forum, Abidjan, Cote d’Ivoire,
4th July, 2013
Major ENVIRONMENTAL criteria

• Net GHG balances
• Land use change
• Net energy balances
• Water use
• Biodiversity
• Soil quality & health
• Pollution (air, water, soil)
• etc

Sources: Hill et. al, 2006; Searchinger et. al, 2008; Williams et. al., 2009; Ackom et. al., 2010
Major SOCIAL principle & criteria

- Avoidance of competition with food
- Consultation & communication with local communities
- Compliance with national laws and ratified international laws on employment conditions and workers’ rights
- Bioenergy production shall not take place on contested lands.
- e.t.c....

Sources: ILO, RSB, GBEP
Brazil
Agro-ecological sugarcane production

Key Criteria:

- Environmental aspects

- Exclusion of pristine ecosystem i.e. Amazon and Pantanal biomes, Upper Paraguay River Basin.

- Avoiding conflict with food production

- Preference for direct precipitation/rainfall over full irrigation

- Degraded pastures
Agro-ecological mapping for bioenergy crop: Senegal
Agro-ecological mapping for bioenergy crops: Kenya

Adapted from Muok et al. 2010.
Key messages

• Agro-environmental zonings – should be the likely condition for issuing permits/license for energy crop production

• Agro-ecological zonings avoids competition of land from food and fuel purposes, as well as the prevention of the use of pristine ecosystems for bioenergy production.

• Agro-ecological zonings in first mover countries provide invaluable lessons for consideration and learning for other African countries.
  – e.g. COGEN Africa (with UNEP, GEF and AfDB).

• Bioenergy derived from sugar cane and non-food based feedstock including residues are often preferred options

• Comprehensive bioenergy sustainability policy integrated into national development plans.
Thank you!

questions and comments

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