Challenges and Opportunities of Biofuels on Ecosystems in Uganda

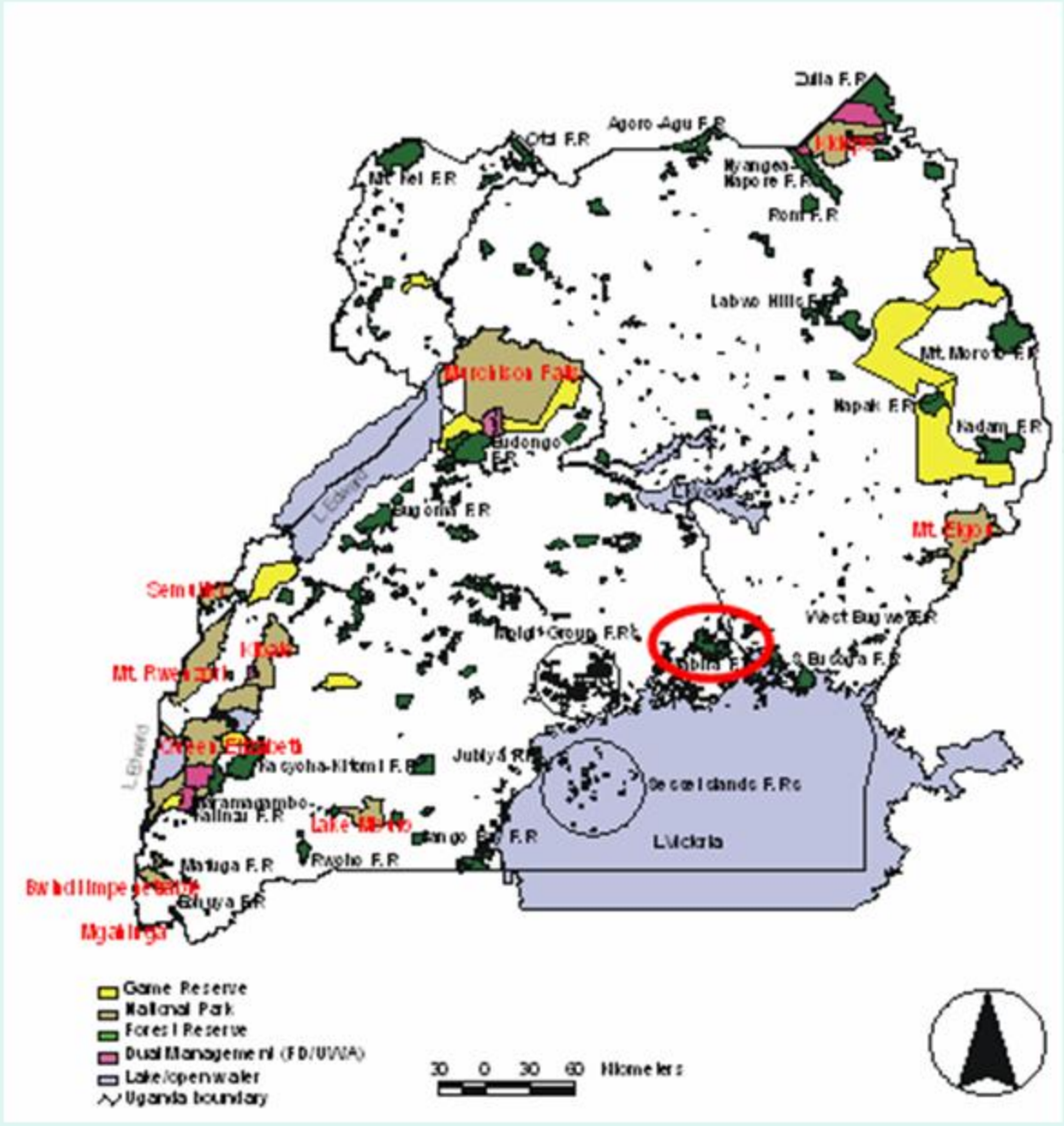
Achilles Byaruhanga
Executive Director
NatureUganda

Introduction

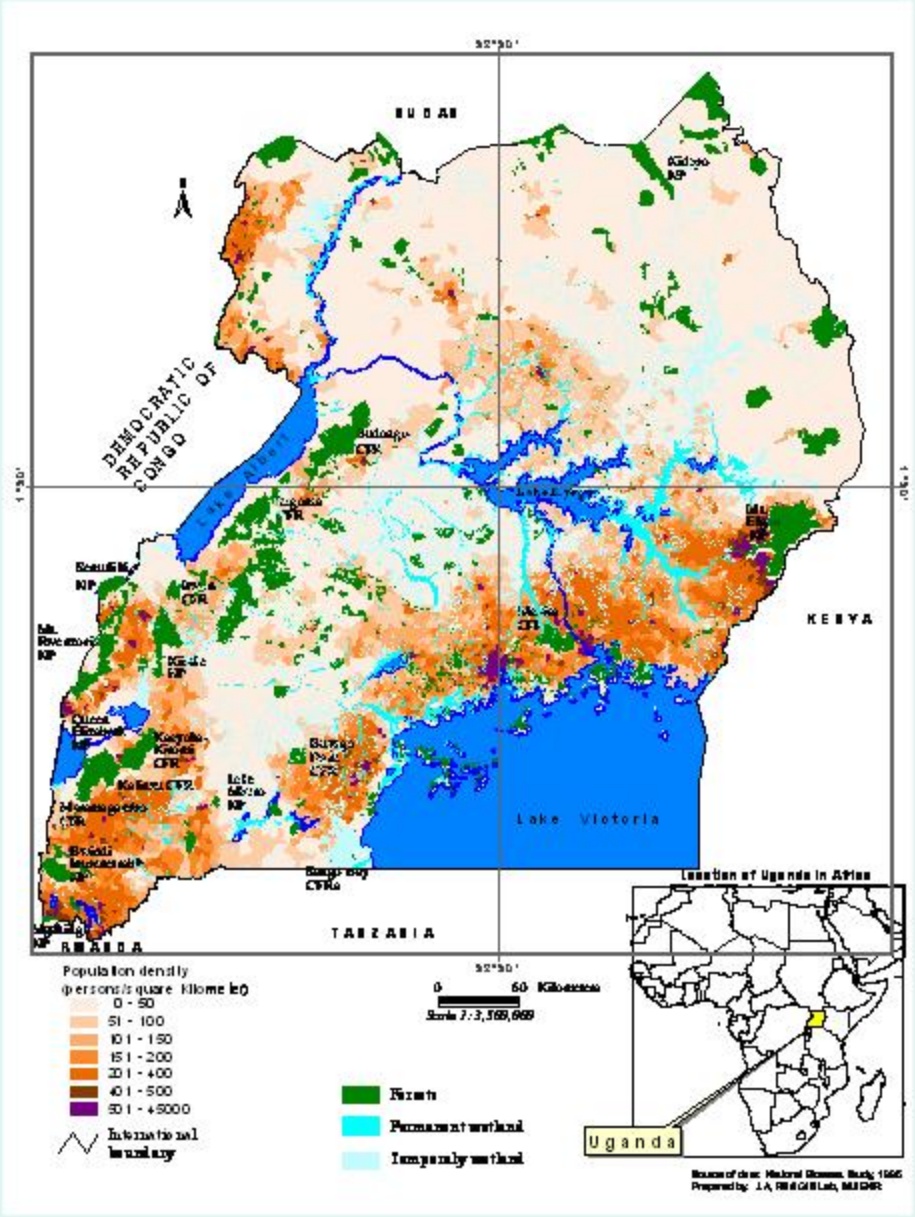
Forests in Uganda

- 1900 10.8m ha 52%
- 2000 <5m ha 24%
- At the current rate of land clearance of 0.9% - 3.15% (50,000- 200,000 ha), Uganda may clear all its natural forests in 25-50 years
- At Independence 1962, Uganda's population c.5m, and in 2006 estimated at c.26m- thus more capacity to accelerate land clearance
- Private and protected forests are invaded
- Other vegetation types such as wetlands are cleared at same rate

Forest reserve in relation to other Protected Areas



Population density and forest reserves



Landscape in South west, Uganda

Government policy

- Constitution of Uganda 1995
  - Protects important natural resources, including land, water, wetlands, oil, minerals, fauna and flora on behalf of the people of Uganda
  - Establishes a trust-beneficiary relationship between the state/local government and the citizenry and prohibits leasing or otherwise alienating resources
- National Environment Act 1995

Others

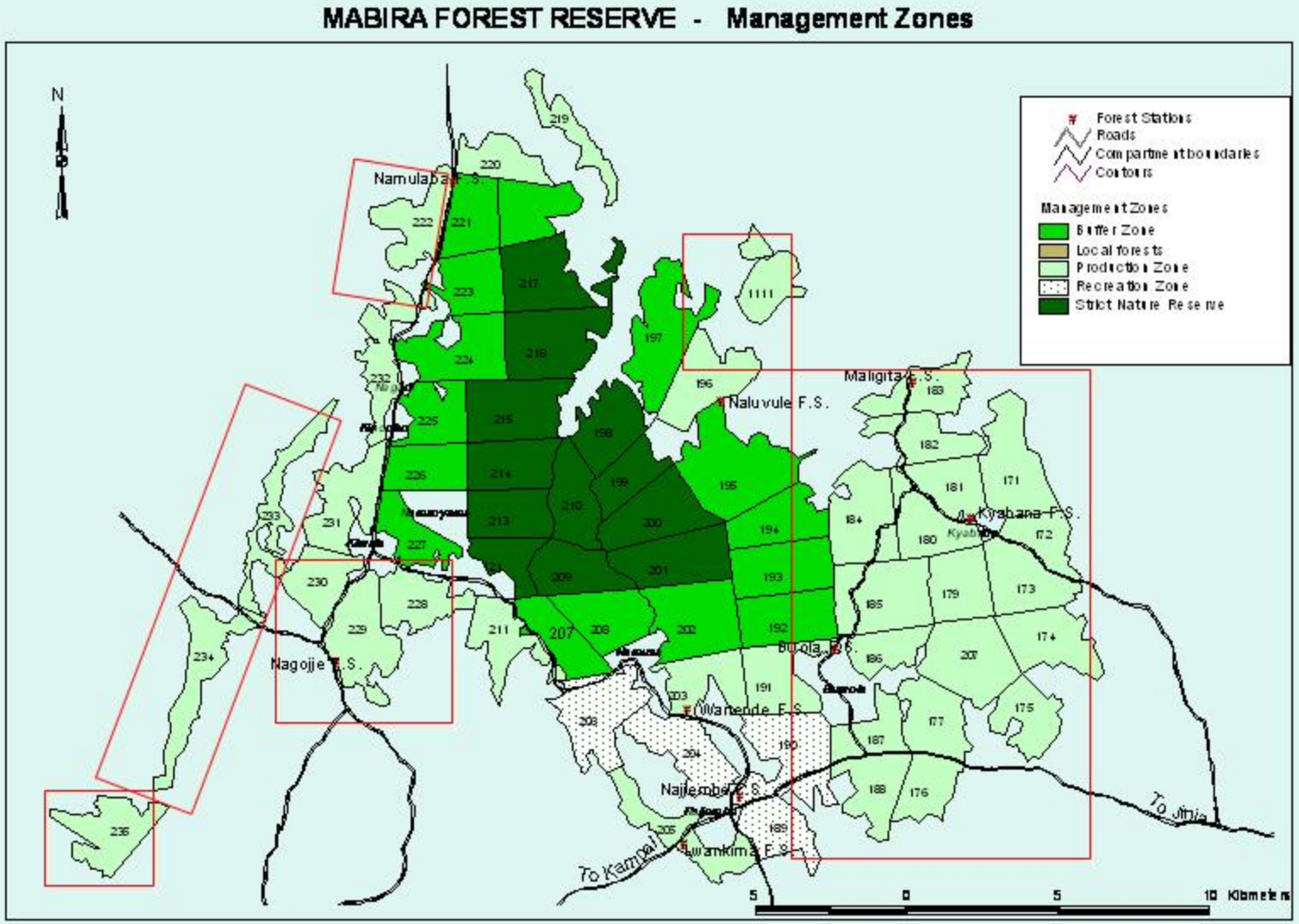
- National Wildlife Act
- National Forestry and Tree Planting Act
- etc

Value of natural resources

- Ecological –catchments for rivers and lakes and other ecosystem services
- Socio-economic development –Uganda's economy is hinged on environment i.e. agriculture, forestry, wildlife and fisheries contribute the bulk of GDP (>70%)
- Consistent assault on the Trust by the state as a trustee
- Major events started in 2000 and this has not only been consistent but also seems to be intensifying

Forest Reserves in Ssese Islands degraded by a palm oil project
(by BIDCO) to produce Palm oil and also biofuels

Mabira Forest reserve to be degazetted for producing Sugarcane and biofuels



Others

- 2001-2003 –efforts by government to degazette Butamira Forest Reserve for sugarcane growing
- 2003-2004- attempts by government to degazette Pian-upe game reserve for fruit growing
- 2002-2003 efforts by government to degazette Queen Elizabeth national Park for a Golf Course

Energy crisis

- Energy shortages are widespread - 97% of the population is without access to electricity
- The majority of energy use by Ugandans is sourced from fuel-wood and charcoal, with the associated negative consequences this has on forestry, biodiversity and equitable social development
- By 2025, Uganda will require c.2,000 Megawatts (MW) electricity but produce about 300 MW
  - actual <200MW due to fluctuation of water levels on Lake Victoria
- There is abundance of natural energy sources which can be found within Uganda's borders, with rich geothermal, hydro-power and solar potential, alongside potentially large oil reserves in the geological structures of the Albertine
  - Despite problems of climate change!
- Hydro-power and geo-thermal energy resources are the most developed
- Biofuels are being considered

Challenges of biofuels in Uganda

- The forest **reduction** in size and fragmentation due to large investments especially monoculture crops (sugarcane, palm oil)
  - Destabilizes the ecological balance.
  - Leads to biodiversity loss
  - Increases risks of pests, disease and invasive spps
  - Denies communities of direct extractive benefits
  - Adversely affects the water cycle
  - Adversely affects soil productivity (leaching and soil erosion)

- The impacts can be reaching to other sectors like industrial water, energy, tourism, agriculture, health and fisheries or compromising existing energy sources

- Socio-economic impacts- Food security, increased prices, loss of tourism potential

- Degradation of environment aggravates poverty (loss of soil fertility, deforestation, pasture degradation, decreasing fish stocks, etc may make the poor more vulnerable (increase poverty) (MFPED 2002)

Way forward

1. Can we ignore the socio-economic values of biofuels in Uganda? NO. There is a energy crisis!
2. Can we ignore impacts on environment, climate change,etc? NO. But the poor discount the future!
3. Cautious approach by developing countries on this technology

   -not to jeopardize the existing energy sources, but also avoid the potential impacts on env't, etc

   -can be an opportunity to alleviate the energy crisis and exploited to improve livelihoods of the people

   -emphasis on the existing and potential forms of cleaner lower-carbon forms of energy


Thanks you