Eyeing into the Tanzania's Miombo woodlands: status, threats, and conservation initiatives

Alfan Rija* & Lawrence Mbwambo¹
*Sokoine University of Agriculture; ¹Tanzania Forest Research Institute

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Talk outline

1. Current status of miombo woodlands
2. Threats & drivers
3. National Mitigation measures and conservation initiatives
4. Local & international support in Tanzania
5. Science & Earth Observation needs
Tanzania’s miombo: major tracts
1. Status: Size, distribution, ecotype

- **Size**: 33.4 mil ha Forests (90% - Miombo cover)

- **Distribution**: Central, southern & Western

- **Ecotype**:
  i) Wet miombo forests
  ii) Dry miombo forests
1. Status: Land Use Land Cover

- Forests.....4%
- Woodland.......51%
- Bushland......7%
- Grassland........9%
- Cultivated land......25%
- Other lands.......4%

❖ Woodlands cover over half of land area and accounts for 75% of wood volume.
1. Status: Stand structure & species diversity

• **Woodland stand**: mostly secondary
  - 54% of Miombo under General Land (URT, 2001)
  - occur mostly in Western & Southern regions

• **Data on species diversity**: patchy (and varies widely), mostly non-existing

❖ **Biodiversity conservation studies have not been a priority in the Miombo**
1. Status: Species diversity influenced by Forest Management regime (Madoffe et al. 2012)
Stand structure across different Protection regime in Katavi ecosystem (Banda et al. 2006)
2. Drivers of Miombo Land cover dynamics

(i) Household energy: Charcoal, firewood
Land cover change due to charcoal, timber, pole & subst. farming (Mbwambo, 2012)

Mgori Village For Reser 1995

Mgori Village For Reser 2010
Threats/drivers: (ii) Forest fires consistent
Threats/drivers: (iii) Overgrazing & Shifting cultivation
Miombo woodland Land cover change: Deforestation + overgrazing

Shinyanga region May 2000

Shinyanga region June 2009
Threat: (iv) Tobacco farming leads Miombo deforestation
Miombo forest degradation increased over time in Tabora region (Yanda, 2010)

\[ y = 6517.8x + 12663 \]

\[ R^2 = 0.7641 \]
**Table 1. Matrix on land use/cover changes in part of Tabora region.**

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<td>Cultivation (Km²) %</td>
<td>Natural vegetation (Km²)</td>
<td>Settlements (Km²) %</td>
<td>Water bodies (Km²) %</td>
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<td>16,236.3 13.5</td>
<td>5,678.8 4.7</td>
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<tr>
<td>Water bodies</td>
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<tr>
<td>Cultivation</td>
<td>19,038.7 15.9</td>
<td>13,471.8 11.2</td>
<td>13.8 0.0</td>
<td>6.6 0.0</td>
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<tr>
<td>Natural vegetation</td>
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<td>82,062.5 68.4</td>
<td>1.5 0.0</td>
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<td>Water bodies</td>
<td>6.9 0.0</td>
<td>33.9 0.0</td>
<td>278.9 0.2</td>
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**Source:** LandSat images interpretation and field verification.
V. Over extraction of forest and wildlife resources across Miombo woodlands
Poaching affects miombo forest structure and functions?

Most populations of all herbivores declined in some portions of the country (e.g. Burigi-Biharamulo, Katavi, Greater Ruaha).

Stoner et al. 2006, Martin & Caro, 2012
3. National Mitigation Measures

(i) Participatory Forest Management Programs

- PFM practiced in 2,323 villages (4. 12mil ha)

(ii) REDD+ program started in 2007 but several activities were on ground before

(iii) Climate Change Impact, Adaptation & Mitigation (CCIAM) program... based at SUA

(iv) NAFORMA program.....Forest inventory & map forests nationwide to provide status for carbon potential for the REDD initiatives
4. Support from local & international

- **Local NGOs** e.g. Tanzania Forest Conservation Group (TFCG), assist enhance assimilation of REDD+ activities in local communities
- **Village Governments** (Local authorities)
- **PFM** ..... DANIDA, FINLAND, WB
- **REDD+ initiatives** supported by government of Norway
- **FAO-Fin supported** initiation of National Forest Monitoring & Assessment (NAFORMA), 2009
- **Tanzania-South Africa Fire Management** Coordination Project- helps to address problems of forest fires
5. Science & Earth Observation Needs

- Capacity building in GIS & Remote Sensing especially in Training and Research Institutes
  - Training
  - Infrastructure (Labs, equipments)
Finally

- We suggest that this meeting deliberate on the future of MN based on lessons learnt from the previous initiative

- Carry out collaborative monitoring of Miombo forests across the region
- Share Geo-info data on land cover change
- Raise governments’ awareness on LCC for sound policies towards conservation of miombo forests
- Build capacity within and among national and regional institutions to integrate land cover data into decision making processes, etc
Recommendation

• Need for integrated Land productivity Improvement program (e.g. introduce fast growing trees, fertilizer trees, drought resistant crops)

• Land use land cover science help solve environmental and socio-economic drivers of ecosystem change
Together, we can save the miombo!

Thank you for listening