LAND USE CLASSIFICATION IN FORESTRY: The National Forest Resource Assessment

PRESENTATION TO THE NATIONAL LAND USE CLASSIFICATION - PHASE 2
Gauteng Workshop
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The National Forest Resource Assessment (NFRA)

National Forest Resource Information

Provincial Forest Resource Information

Provincial Forest Resource Information

(9 provinces)

Municipal Forest Resource Information

Municipal Forest Resource Information

(Forest types)

Ownership classes

Assessment variables
- Extent (time series: 2000; 2005; 2010 etc)
- Biomass / Carbon stock
- Consumptive use / Forest products
- Ecosystem services
- Forest health & vitality

(4 – 7 District Municipalities per province)
National Forest Resource Assessment: the Process

Remote Sensing & GIS
- Spatial Information
- Classification (forest types / conversions)
- Extent / Conversion
- Status / Vitality

Field Inventory
- Sample design
- Yield / Biomass data
- Biodiversity data
- Forest health / vitality data
- Economic data

Existing Information
- Statistics; Climate info; etc.

Data Base

Analysis

Report
## Classification: on what basis?

<table>
<thead>
<tr>
<th>Type of classification</th>
<th>Primary Questions (from a forestry point of view)</th>
<th>Secondary Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Land Cover</strong></td>
<td>Is this forest land?</td>
<td>What kind of forest land?</td>
</tr>
<tr>
<td></td>
<td>- Woody plants cover &gt; 5% of the area</td>
<td>• Species</td>
</tr>
<tr>
<td></td>
<td>- Stages of succession / establishment</td>
<td>• Structure</td>
</tr>
<tr>
<td></td>
<td>- Indigenous and exotic</td>
<td>• Condition / Status</td>
</tr>
<tr>
<td></td>
<td>If not, what other kind of Land Cover?</td>
<td>Has this been forest land before?</td>
</tr>
<tr>
<td><strong>Land Use</strong></td>
<td>What kind of activity is practiced – Primary objectives?</td>
<td>At what level? Time scale? Which goods / services?</td>
</tr>
<tr>
<td></td>
<td>• Consumptive use / Production of Timber and Non-timber Forest Products (resource base)</td>
<td>• commercial or subsistence use</td>
</tr>
<tr>
<td></td>
<td>• Storage / Transport / Processing and trade of primary / secondary products</td>
<td>• large / small scale</td>
</tr>
<tr>
<td></td>
<td>• Non-consumptive use / ecosystem services</td>
<td>• primary / secondary processing</td>
</tr>
<tr>
<td></td>
<td>• Protection / maintenance functions</td>
<td>• specific products / services</td>
</tr>
<tr>
<td></td>
<td>• Conservation of forest ecosystems / species</td>
<td>• specific focus of service (e.g. fire protection)</td>
</tr>
<tr>
<td></td>
<td>• Research and / or training</td>
<td>• level of protection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• specific conservation objectives</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• type of facilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• duration</td>
</tr>
</tbody>
</table>

**agriculture, forestry & fisheries**

Department: Agriculture, Forestry and Fisheries

REPUBLIC OF SOUTH AFRICA
Forest Land Cover

Natural / Indigenous
- Natural Forests
  - Albany Thicket
  - Woodland
- Forest Groups
  - Savannah Biome (bioregions)
  - Other Biomes (bioregions)
- Forest Groups
  - 26 types
- 17 types
- 87 types
- 68 types

Planted / Naturalised
- Softwoods
- Hardwoods
- Mixed stands
- Temporary vacant / unplanted
- Species (e.g. Pinus)
- Species (e.g. Eucalyptus)
- Species
Forest Land:
- Natural Forest
- Plantation / Hardwood / Eucalyptus
- Naturalised Exotics / Hardwood / Acacia mearnsii
- Albany Thicket

Bare Land:
- Grassland
Land Use Related to Forests and Forestry

Forest Land Based
- Forestry
  - Consumptive Use
  - Non-consumptive use
  - Areas protected by law
- Conservation
- Research & Education

On Other Non-Forest Land
- Infrastructure & Facilities
  - Protection Services
  - Heavy / Primary Processing
  - Light / Secondary Processing
  - Storage and Transportation
- Industrial & Storage
- Commercial
### Forest Land Use

<table>
<thead>
<tr>
<th>Main Use</th>
<th>Sub-class</th>
<th>Further sub-classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2) Forestry</td>
<td>Production / Commercial Forestry</td>
<td>Based on products</td>
</tr>
<tr>
<td></td>
<td>Subsistence Forest Use</td>
<td>Based on products</td>
</tr>
<tr>
<td></td>
<td>Agroforestry</td>
<td>Based on systems</td>
</tr>
<tr>
<td></td>
<td>Forest Recreation &amp; Tourism</td>
<td>Based on type of facility and recreation service</td>
</tr>
<tr>
<td></td>
<td>Forest Cultural &amp; Spiritual Use</td>
<td>Based on type of facility and type of use</td>
</tr>
<tr>
<td></td>
<td>Forest Resource Conservation</td>
<td>Based on objectives and type of mechanism</td>
</tr>
<tr>
<td></td>
<td>Forest Research &amp; Education</td>
<td>Based on type of facility</td>
</tr>
</tbody>
</table>
- Production Forestry: Timber > Softwood
- Forest Recreation:
  - Horse riding
  - Cycling
  - Walking
- Forest Research & Education:
  - Arboretum
- Forest Resource Protection
  - Protected Group of Trees
- Forest Recreation
  - Walking
  - Cycling
  - Horse riding

- Car Park
- Restaurant

Production Forestry: Timber > Softwood
Key Issues in Relation to Land Classification in Forestry

• Several possibilities exist for classification in forestry:
  o Land Cover - Species
    - Structure
    - Condition / Status
  o Land Use

• Land Cover and Land Use are distinctly different in forestry:
  o Only one type of land cover is possible at any point in space and time
  o Multiple land uses may occur simultaneous on the same land
  o Same land uses may be possible on several forest land cover types

• Forestry Land Use may dove-tail with other types of land use – e.g. Conservation, Agriculture and Recreation / Tourism; and

• Non-forestry land use may occur on forest land: e.g. livestock grazing

• Forestry involves long time scales – land use classification should accommodate and facilitate long term consistency
END – Thank You