

Addressing countries reporting requirements to REDD in FAO Approach to National Forest Monitoring and Assessment



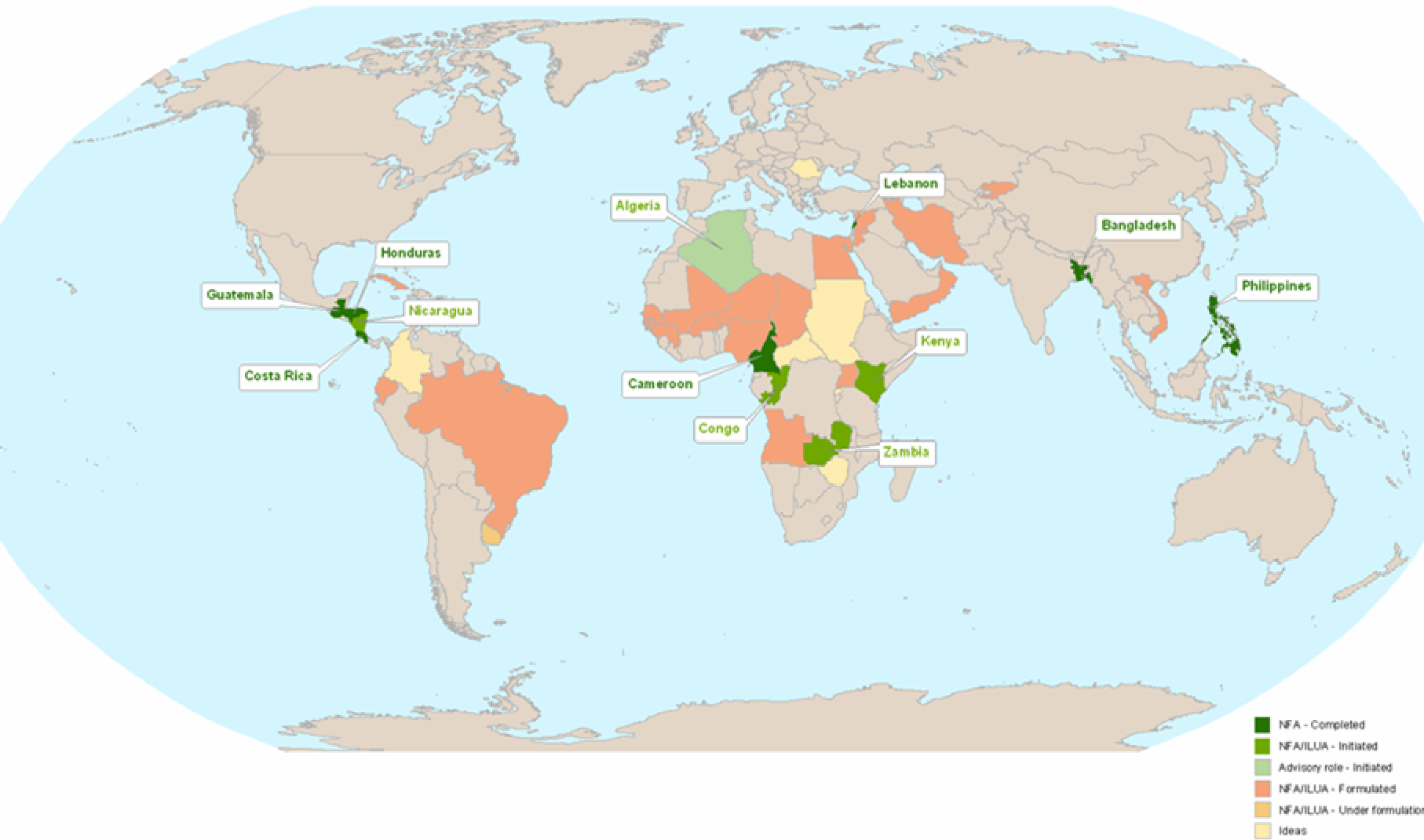
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NFMA Approach

- **National ownership and capacity building**
 - **Adopting holistic and cost-effective approach**
 - **Supporting national policy dialogue**
 - **Supporting poverty reduction and national planning**
 - **Improving knowledge**
 - **State of forest resources**
 - **All benefits of forests and TOF**
 - **Long term monitoring (incl. REDD)**
 - **Uses and users of resources and livelihoods**
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FAO country support

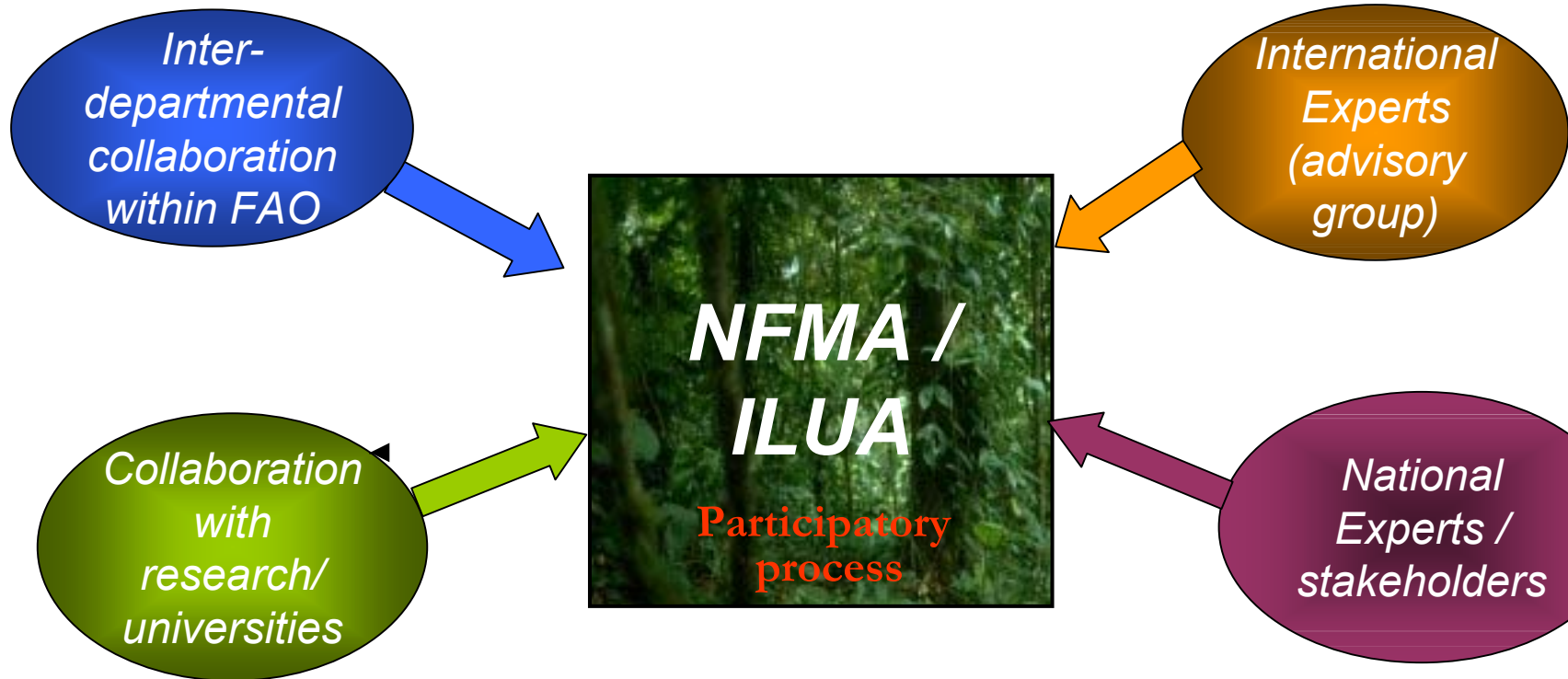
FAO NFA / ILUA Countries



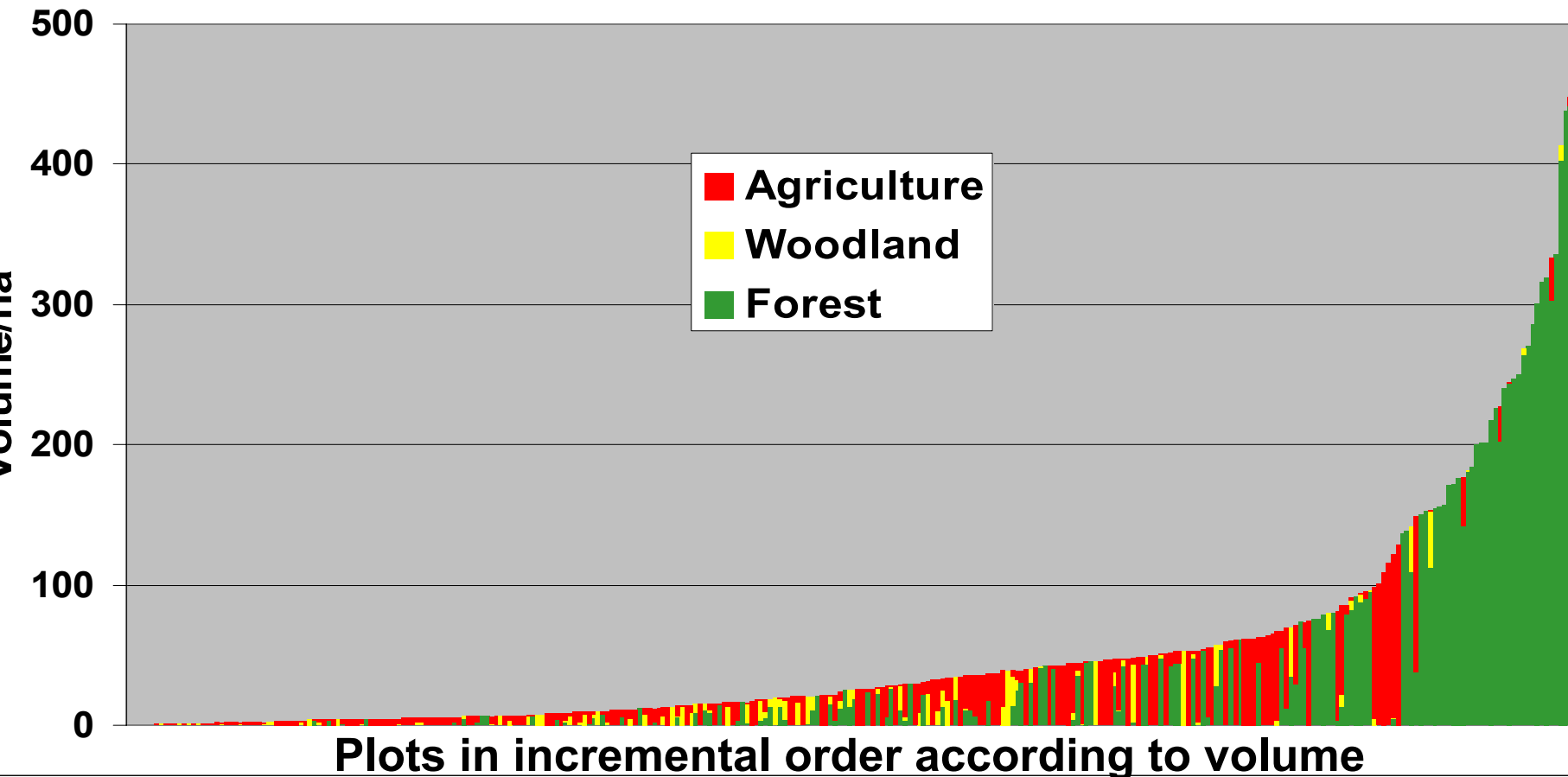
NFMA: Process



24-36 months

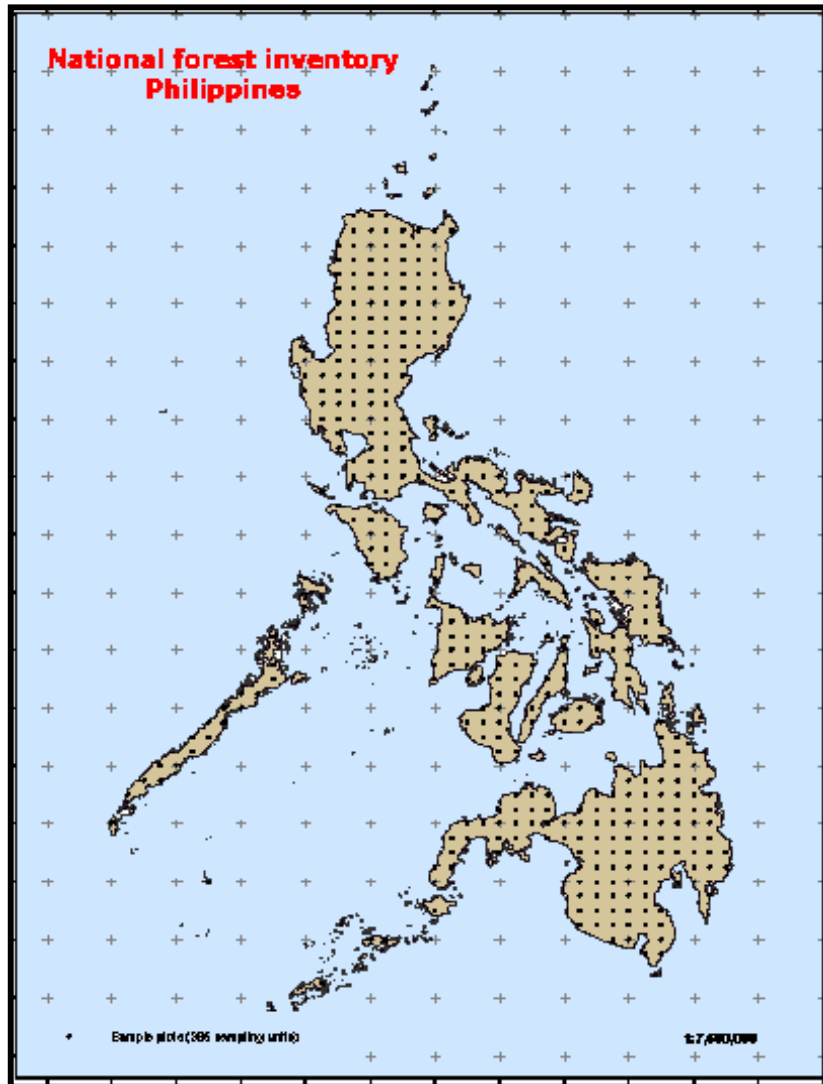


Country example – Growing stock



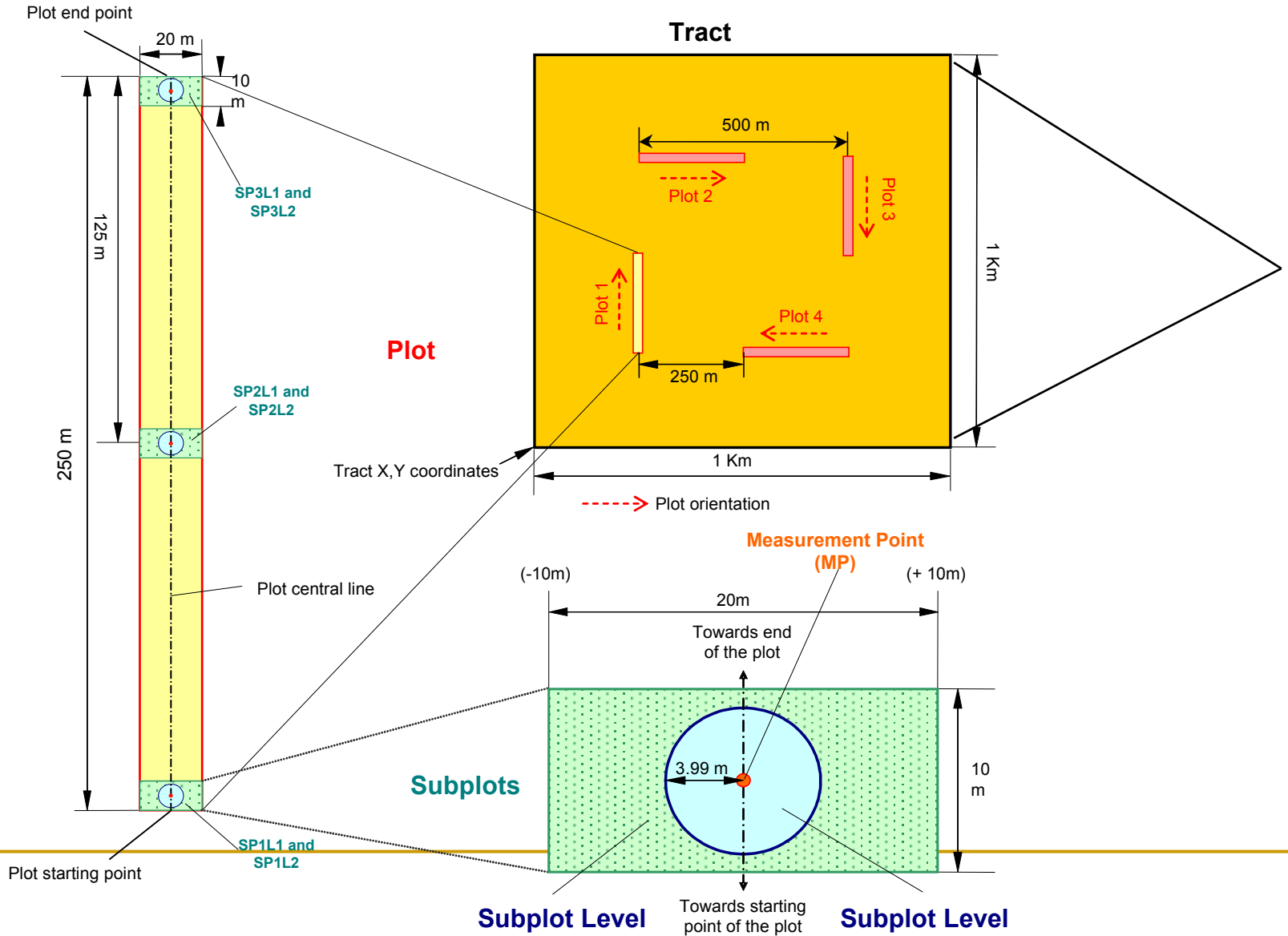
Conclusion: Monitor all land!

Sampling



- **Nationwide**
- **Systematic** (based on lat./long. grid)
- **Permanent plots** for long term monitoring
- **Stratification may be applied** to improve sampling efficiency based on “stable” strata (ecological zones)

Sampling - Tract and plot configuration



Tree carbon stock

Tree Measurements (Diameter & Height):

- ➔ All tree species
- ➔ In all land uses and forest types
- ➔ All tree sizes
- ➔ All tree health categories



Shrub/bamboo carbon stock

Shrub and Bamboo Measurements (Stem/Culm Diameter & Height):

- ➔ All shrub/bamboo species
- ➔ In all land uses and forest types
- ➔ All sizes
- ➔ All health categories



Litter carbon stock

Litter measurement (layer thickness):

➔ In all land uses and forest types



Dead wood carbon stock

Dead wood measurement (Diameter & Height/Length):

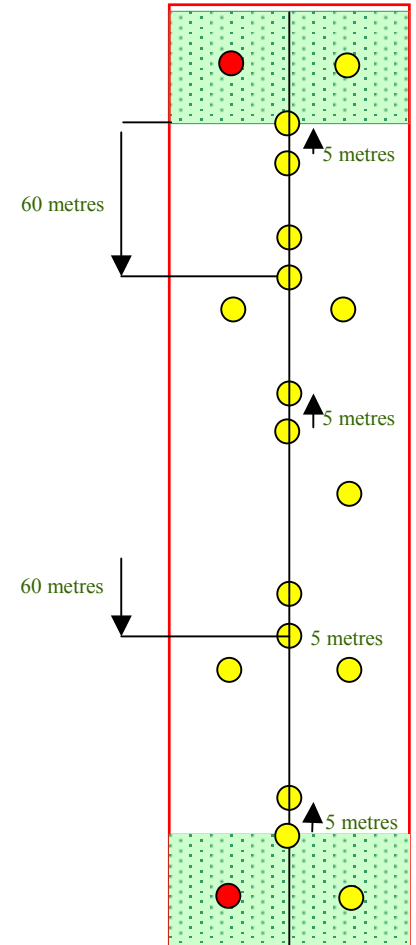
- ➔ All dead trees, standing and fallen
- ➔ All tree stumps
- ➔ In all land uses and forest types



Soil carbon stock

Soil Samples:

- ➡ Carbon content
- ➡ In all land uses and forest types



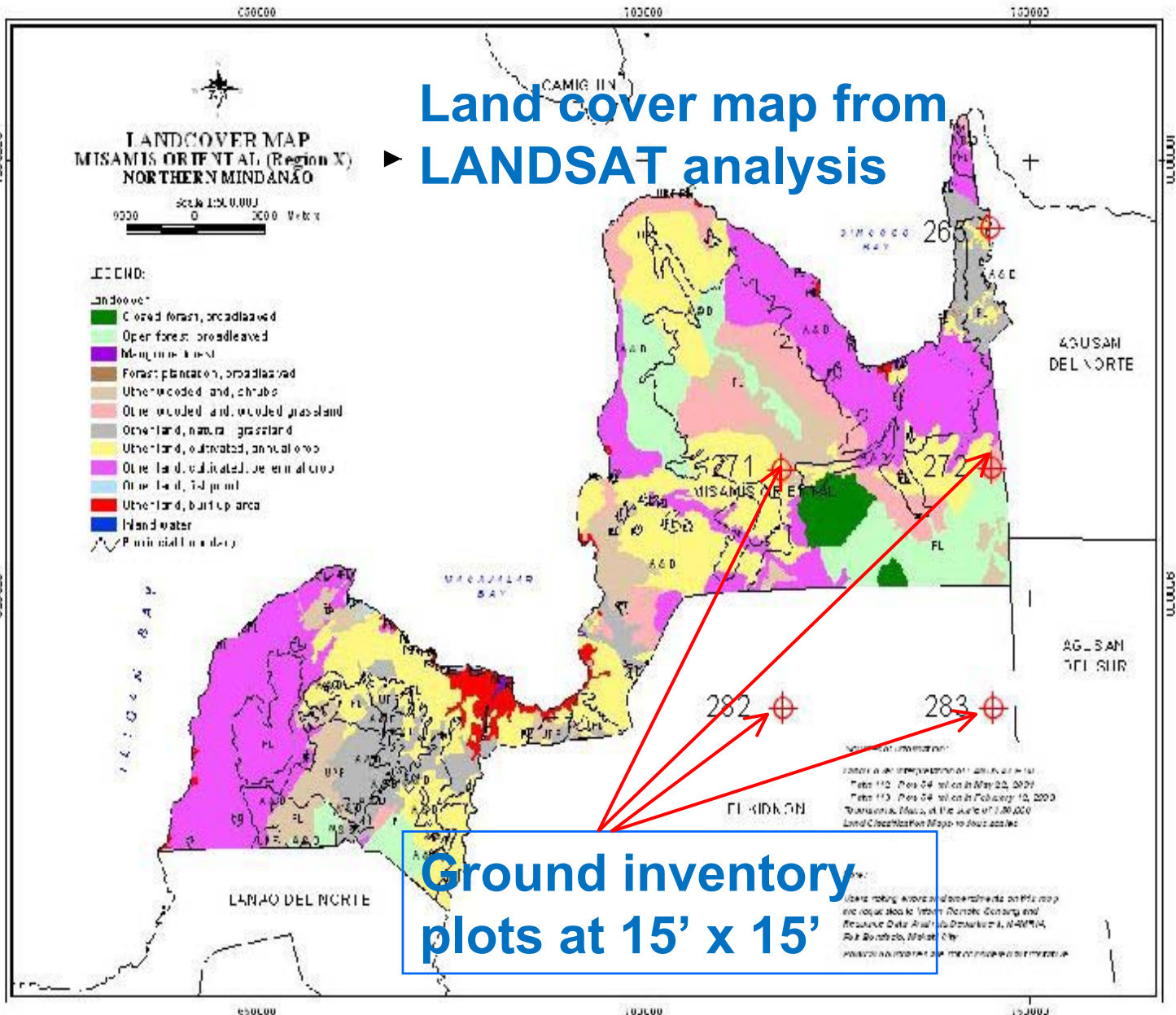
**LANDCOVER MAP
MISAMIS ORIENTAL (Region X)
NORTHERN MINDANAO**

Scale 1:50,000
0 5000 10000 Meters

LEGEND:

- Closed forest, broadleaved
 - Open forest, broadleaved
 - Mangrove forest
 - Forest plantation, broadleaved
 - Other wooded and shrubs
 - Olive wooded and wooded grassland
 - Openland, natural grassland
 - Otherland, cultivated, annual crops
 - Olive land, cultivated, perennial crops
 - Olive land, fallow
 - Otherland, built-up area
 - Inland water
- ⚡ Provincial boundary

Land cover map from LANDSAT analysis



**Ground inventory
plots at 15' x 15'**

Source: Department of Environment and Natural Resources
 Table 112 - Data 04 released May 22, 2009
 Table 113 - Data 04 released February 12, 2009
 Zamboanga, Misamis City and Zamboanga City
 Land Classification Maps to date available

Map prepared by the Department of Environment and Natural Resources
 and released to the Department of Agriculture and Forestry
 Department of Agriculture and Forestry, Misamis City
 Misamis City, Misamis Oriental, Mindanao

Forest Inventory Results

Data collection at permanent field plots and interviews and through remote sensing

Area & Area change by Forest Type and Land Uses

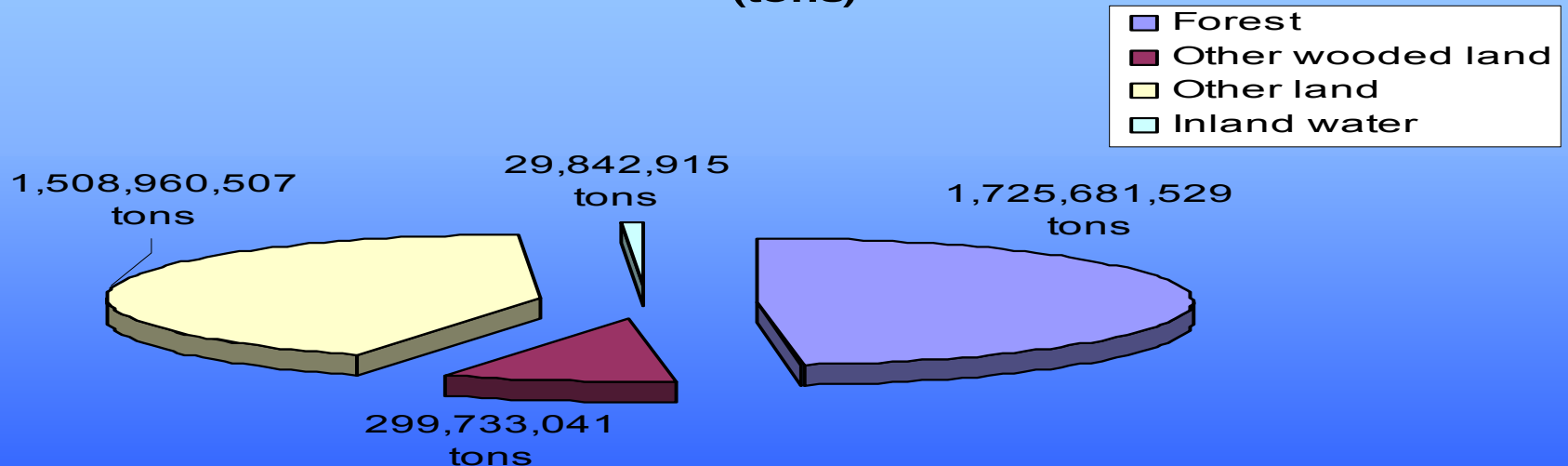
Carbon stocks & Carbon stock changes

Forest and Socio-economic data for REDD strategy

Total above-ground biomass (AGB) in forests and trees outside forest, (Philippines)

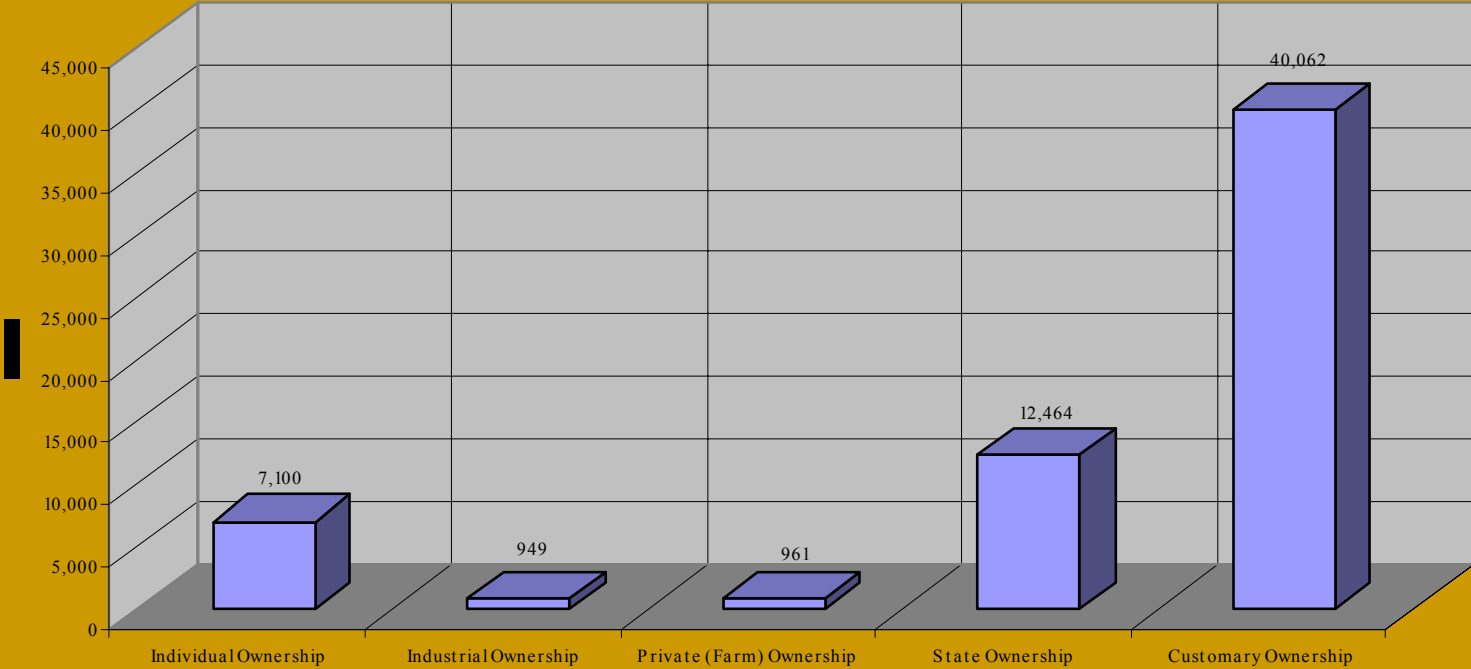
Land Use	AGB (Million tons)
Forest	1,726
Other wooded land	300
Trees on other land use	1,509
Trees on inland waters	30

Total Above Ground Woody Biomass by Land Use (tons)

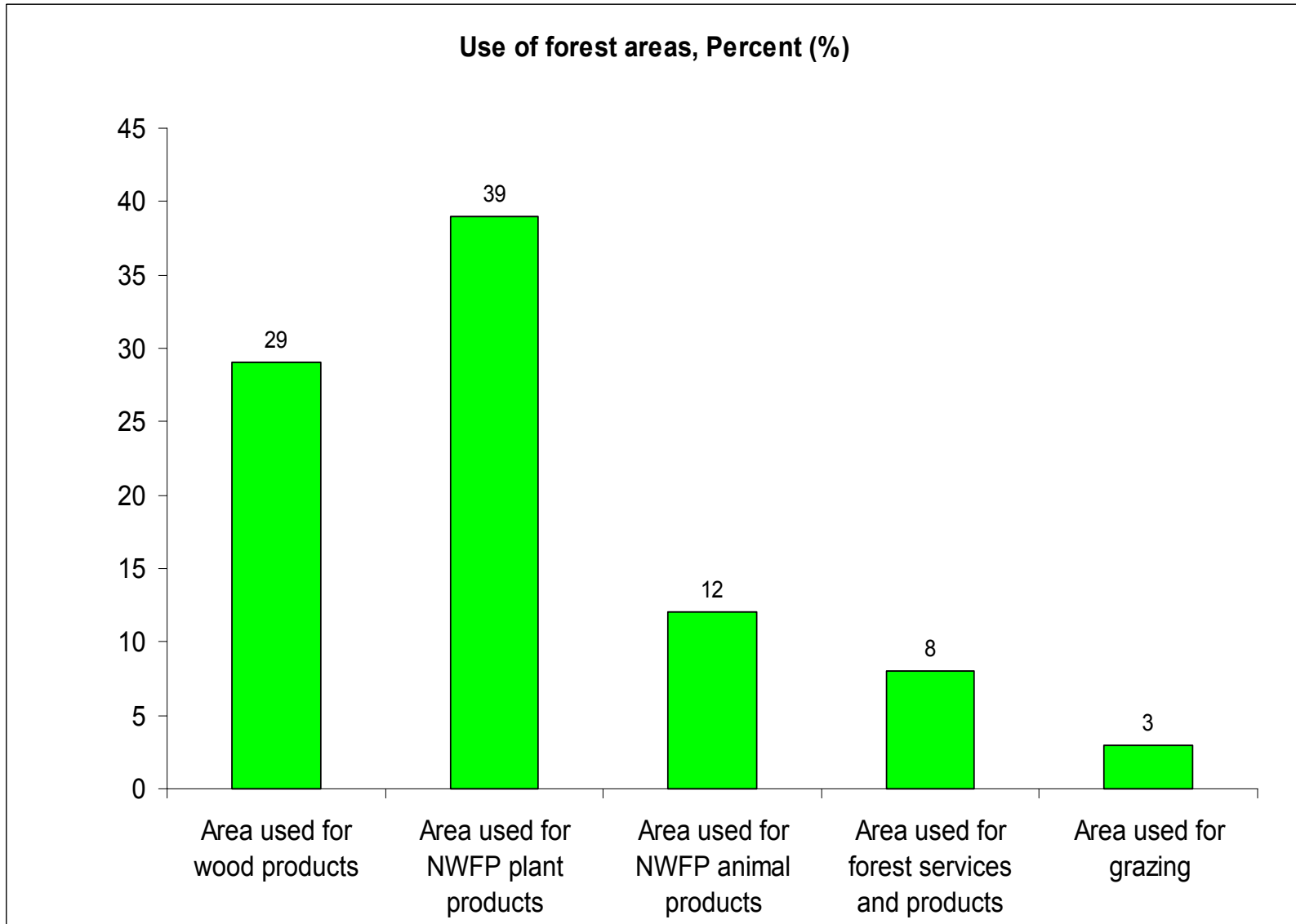


ACCESS TO RESOURCES, LAND OWNERSHIP IN ZAMBIA

Land Ownership in Zambia



Pattern of Forest Harvesting (Based on Responses From Household Data)



Way Forward

- NFMA methodology and FRA satellite image techniques are good basis for developing robust forest-carbon accounting systems for REDD at the sub-national or national level
 - FAO and other UN-REDD partners are flexible to respond to the requirements set by the member countries and UNFCCC
 - Use of expert consultations and experiences from member countries
 - Methodologies e.g. on biomass-carbon equivalent equations/conversion factors need to be developed
 - testing methods in selected countries in cooperation with development partners => contribution to Copenhagen negotiations
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