

Forest Resources Monitoring, Assessment, Reporting

Global ↔ National

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PRIMARY FORESTS



OTHER NATURALLY REGENERATED FORESTS



PLANTED FORESTS OF NATIVE SPECIES



PLANTED FORESTS OF INTRODUCED SPECIES



GLOBAL FOREST RESOURCES ASSESSMENT 2005

**EXTENT OF FOREST
RESOURCES**



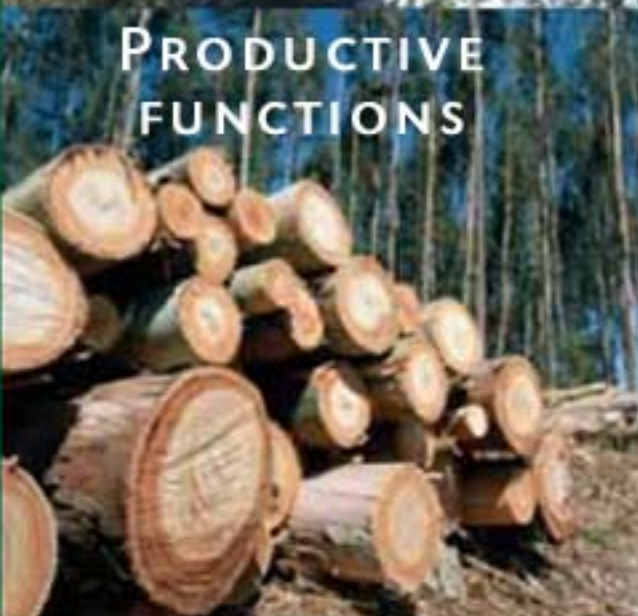
**BIOLOGICAL
DIVERSITY**



**FOREST HEALTH
AND VITALITY**



**PRODUCTIVE
FUNCTIONS**



**PROTECTIVE
FUNCTIONS**



**SOCIO-ECONOMIC
FUNCTIONS**



1946

TIMBER



1980

DEFORESTATION



2000

CONSERVATION



Forest policy objectives

Economic

- Poverty
- Food security
- Wood productivity and supply
- Valuation of forest products and services
- Equity
- Trade

Socio-cultural

- Rural livelihoods
- Indigenous peoples rights
- Rights of access
- Tenure and Land ownership

Inter-sectoral

- Agriculture
- Energy
- Transport
- Industry

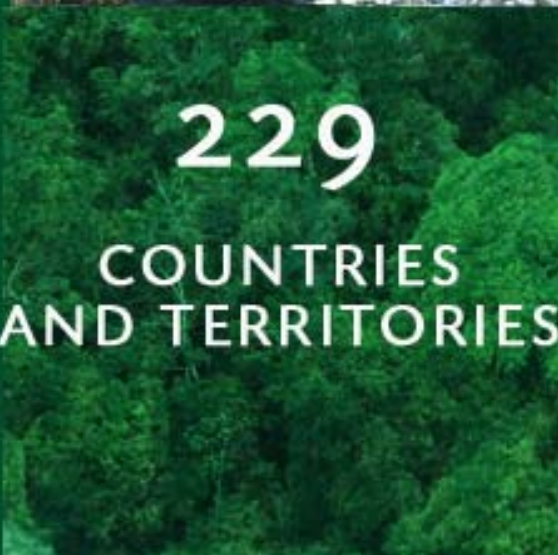
Environmental

- Biological diversity
- Soil and water protection
- **Climate change**
- Desertification
- Air pollution
- Invasive species
- Wildfire
- Pests



Global Forest Resources Assessment 2005

Progress towards sustainable forest management



CHANGE IN FOREST AREA 1990-2005

DEFORESTATION **13** million ha/yr

NET FOREST LOSS

1990-2000 **8.9** million ha/yr

2000-2005 **7.3** million ha/yr

200 KM² PER DAY

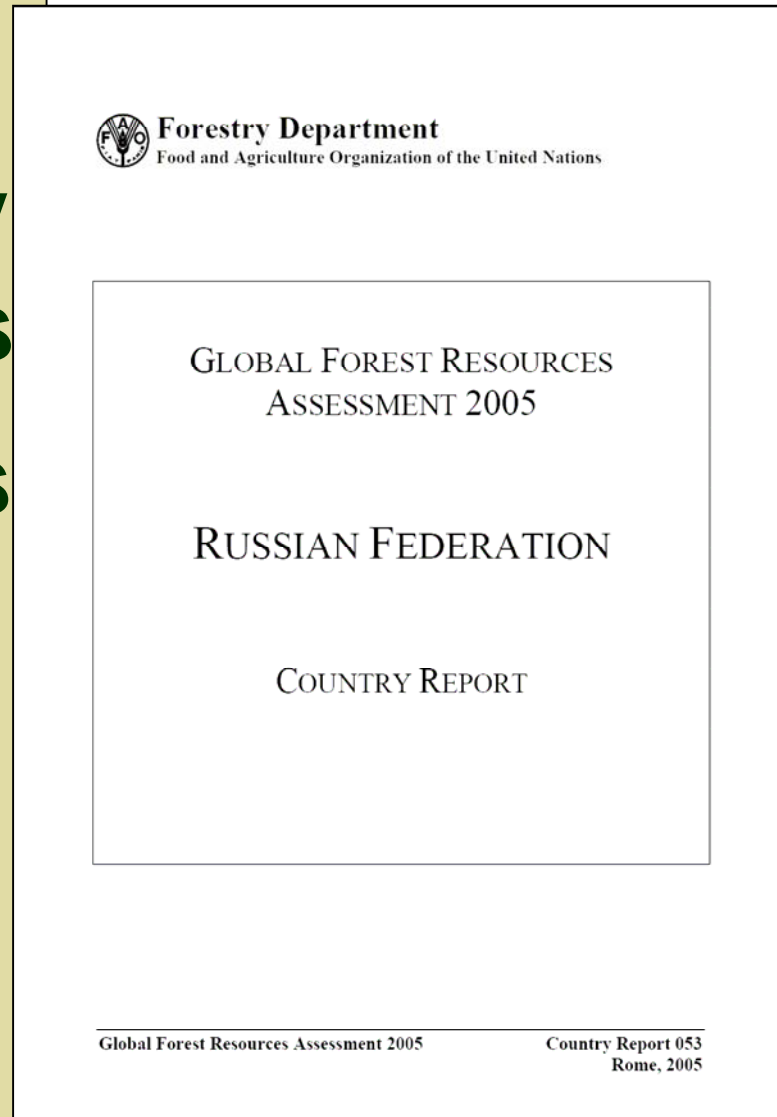


Country involvement (FRA 2005)

172 national
correspondents

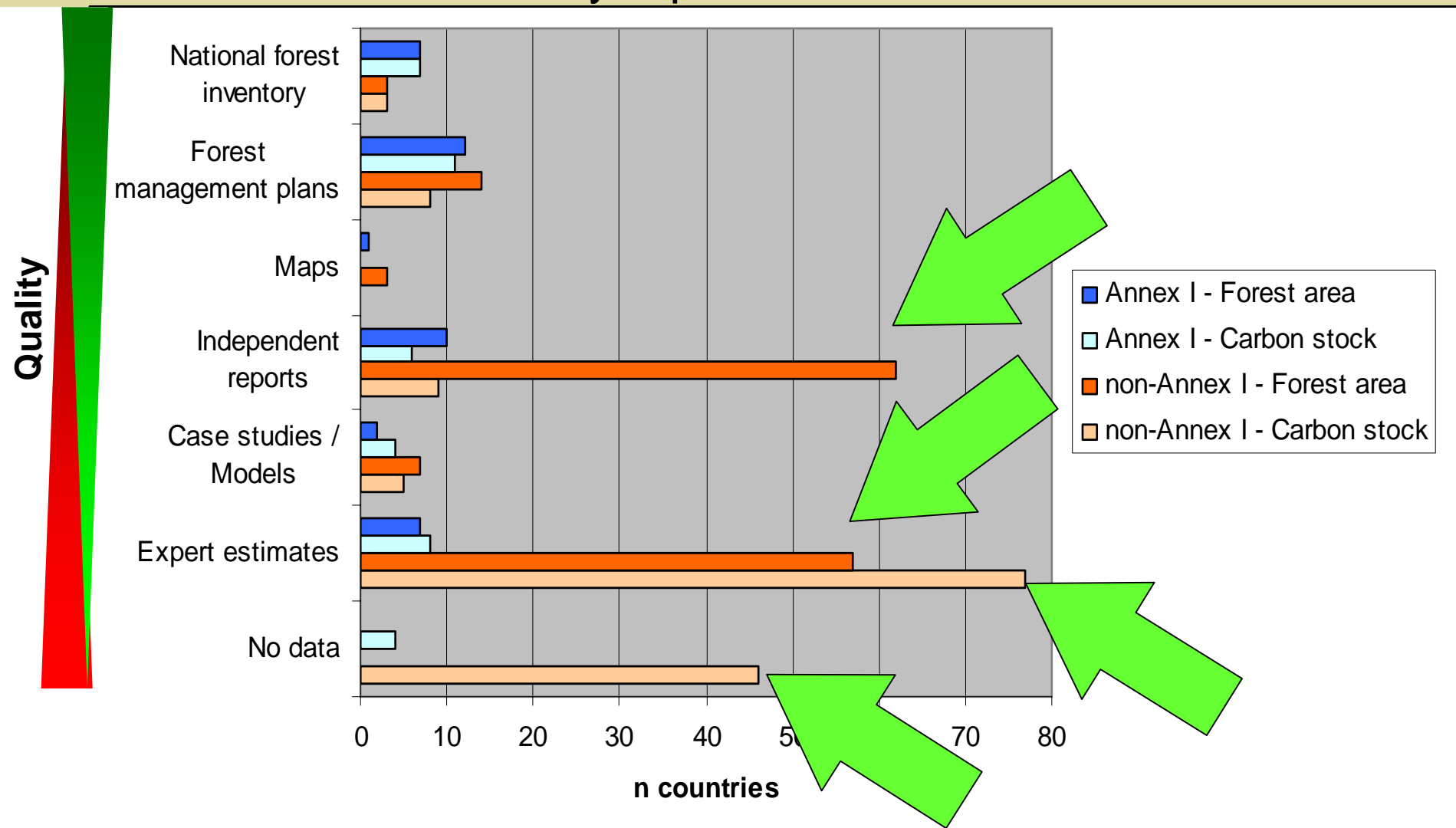
229 country
reports

800+ contributors



Data sources (FRA 2005)

Sources of trend data for forest area and forest carbon stock in country reports to FRA 2005



Data collection options

Method	Feasible variables	Pros	Cons
Field Measurements	Biophysical	Precise	Only measurables
Field Observations	Biophysical Land use	Wide range	Judgements
Remote Sensing	Some area measures	Cost-effective (?)	Limited scope
Interviews	Uses, Users, Values, Tenure, Conflicts	Captures socio-economics	Demanding

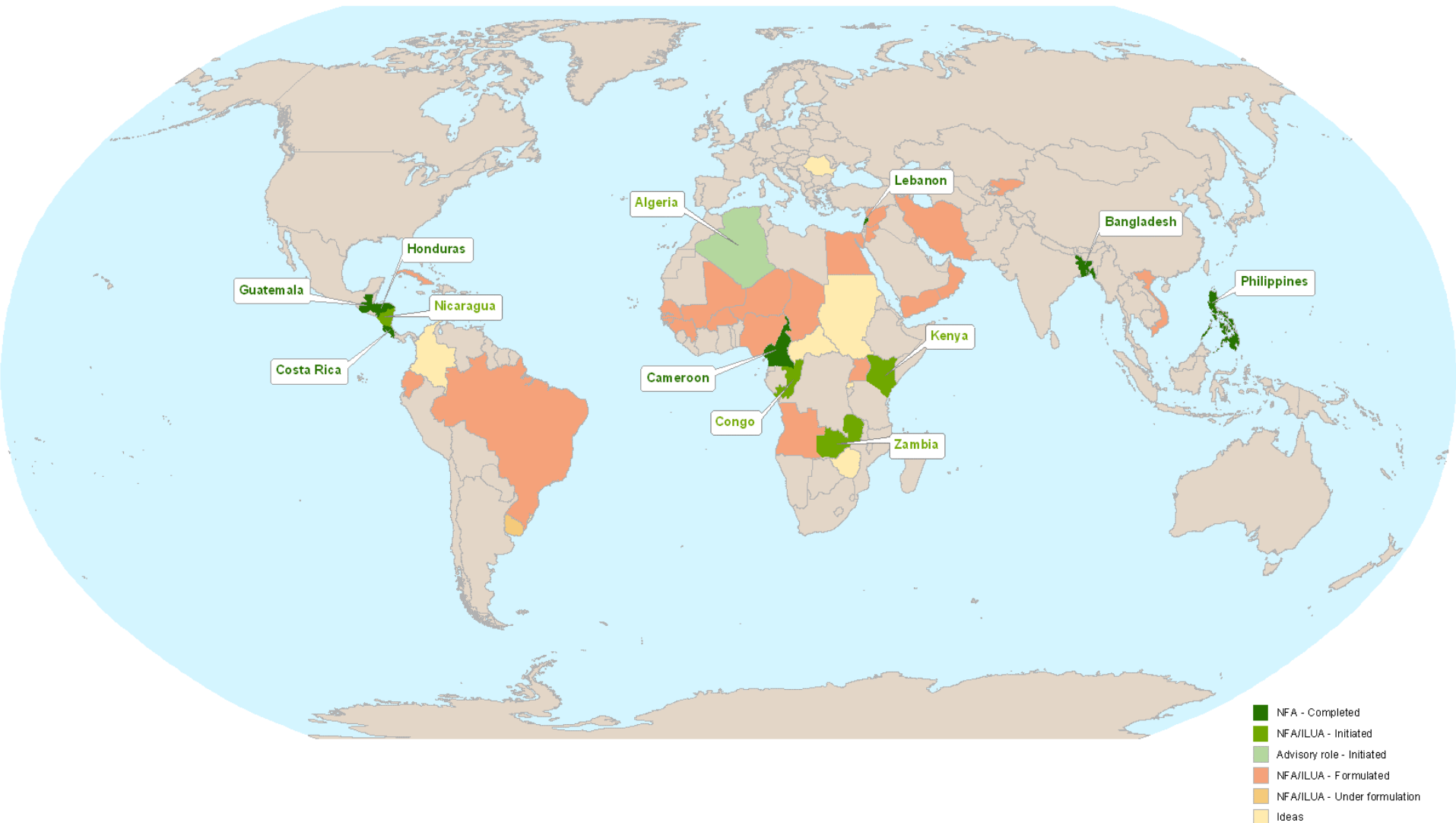


**National monitoring
- the base of global reporting**

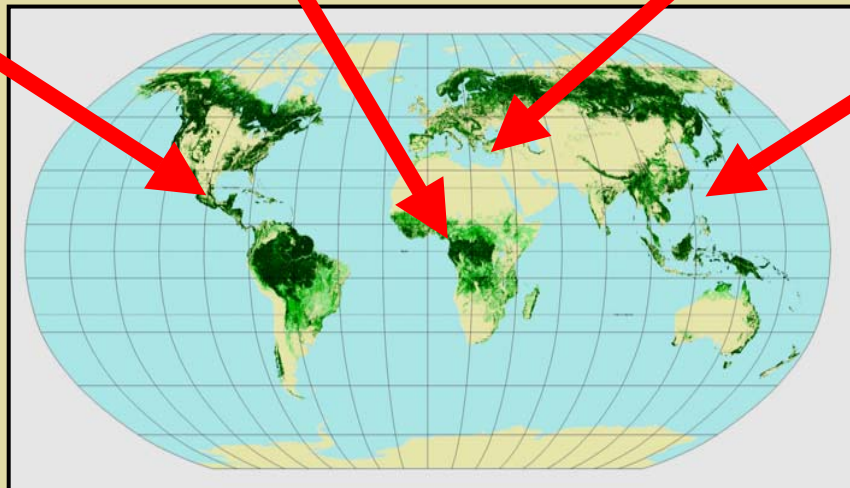
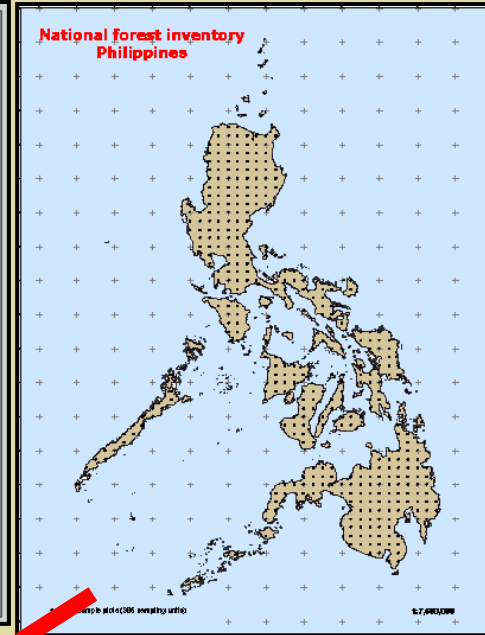
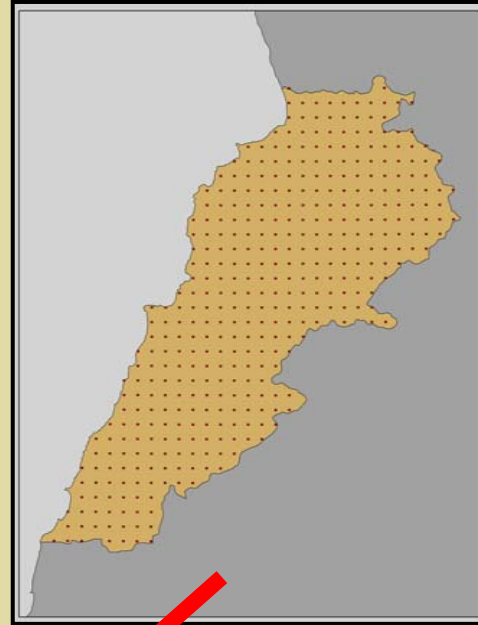
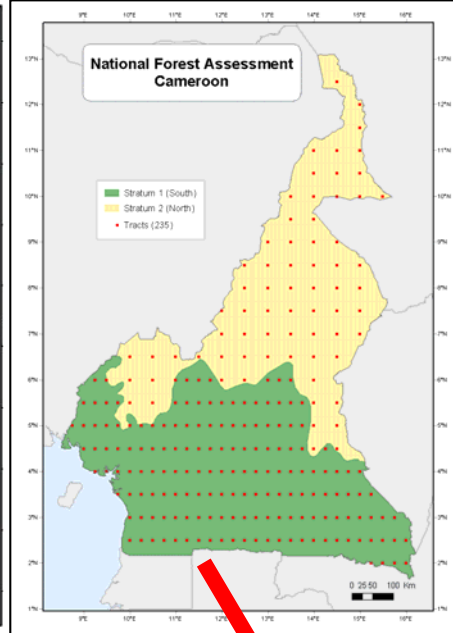
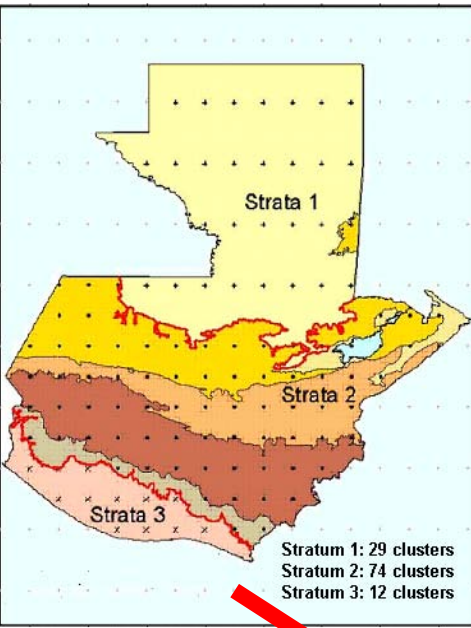
Lappland, Sweden 1927

FAO country support

FAO NFA / ILUA Countries



Examples



Sampling

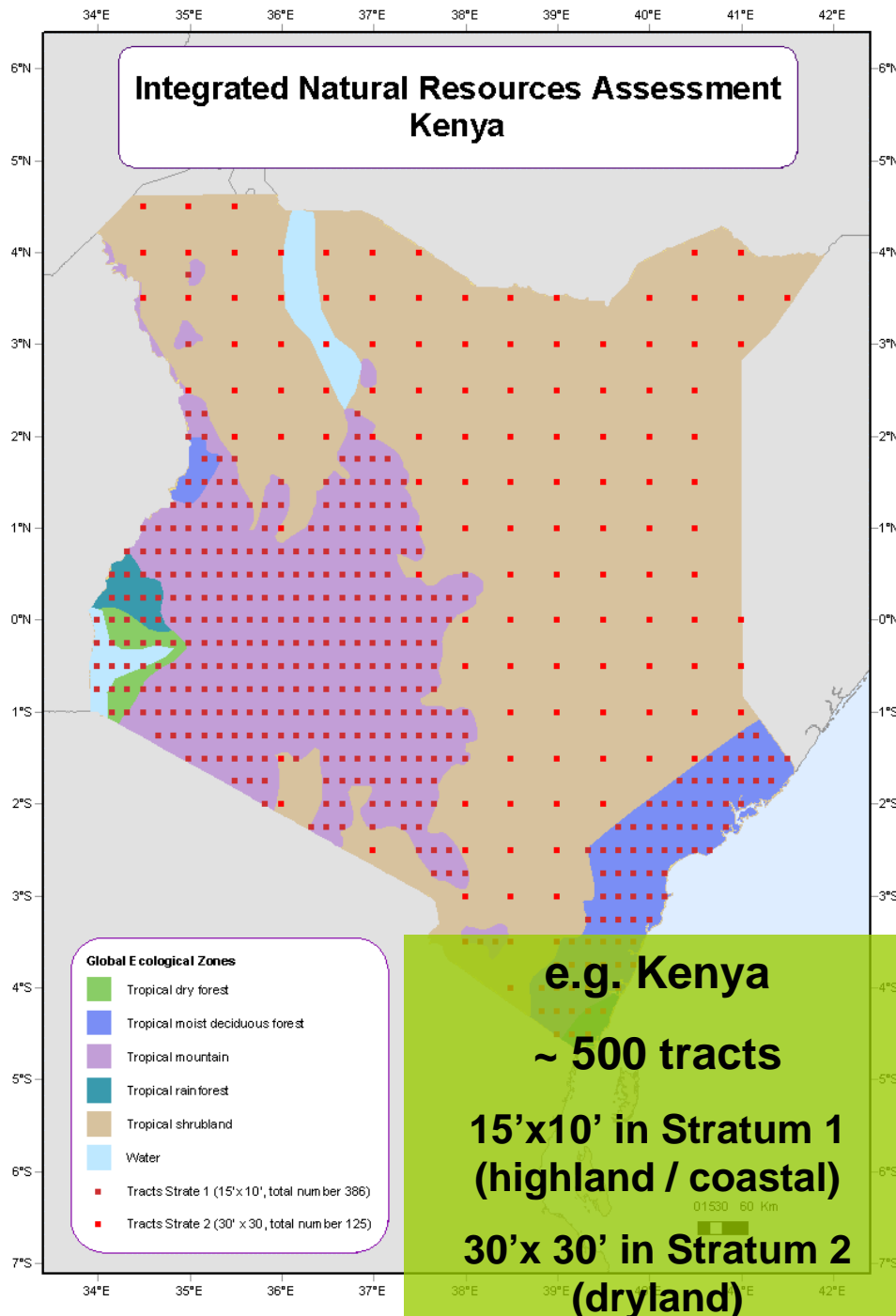
Nationwide

Low intensity field sampling
(100-1000)

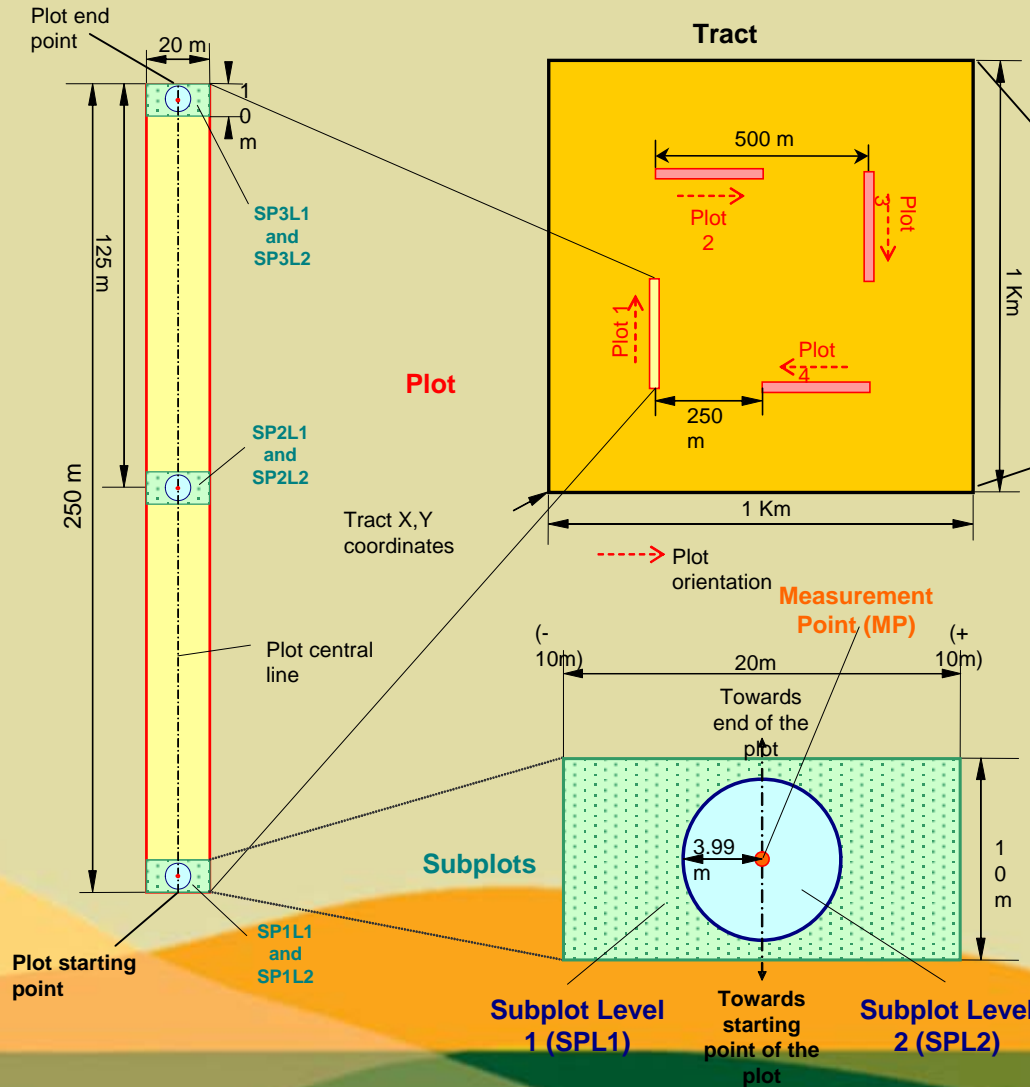
Systematic (based on
lat./long. grid)

Permanent plots for long
term monitoring

Stratification may be
applied to improve
sampling efficiency based
on “stable” strata
(ecological zones)



Basic design



Systematic sampling grid



Local interviews

Data collection



Measurements of biophysical parameters



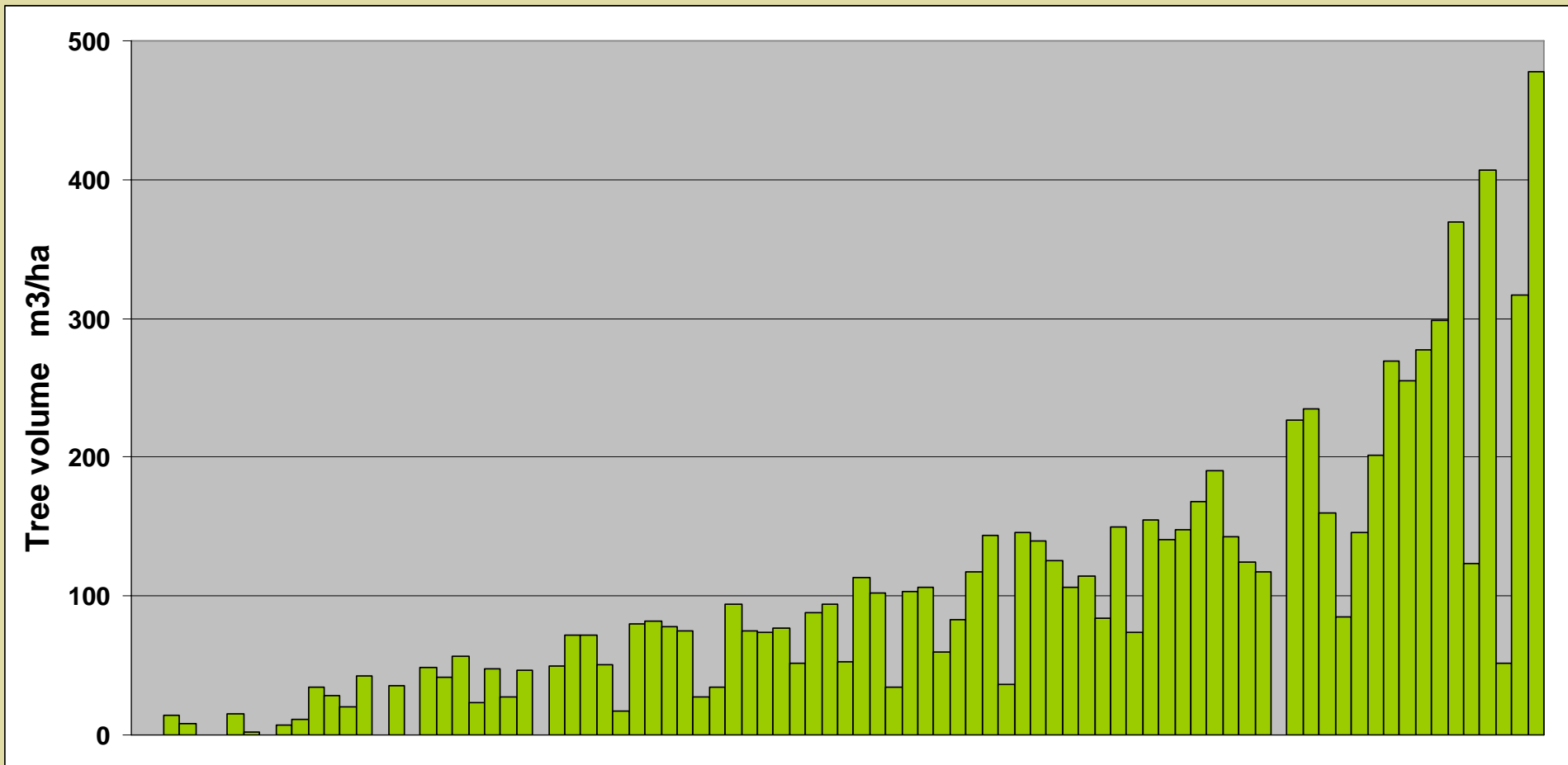
Direct observations



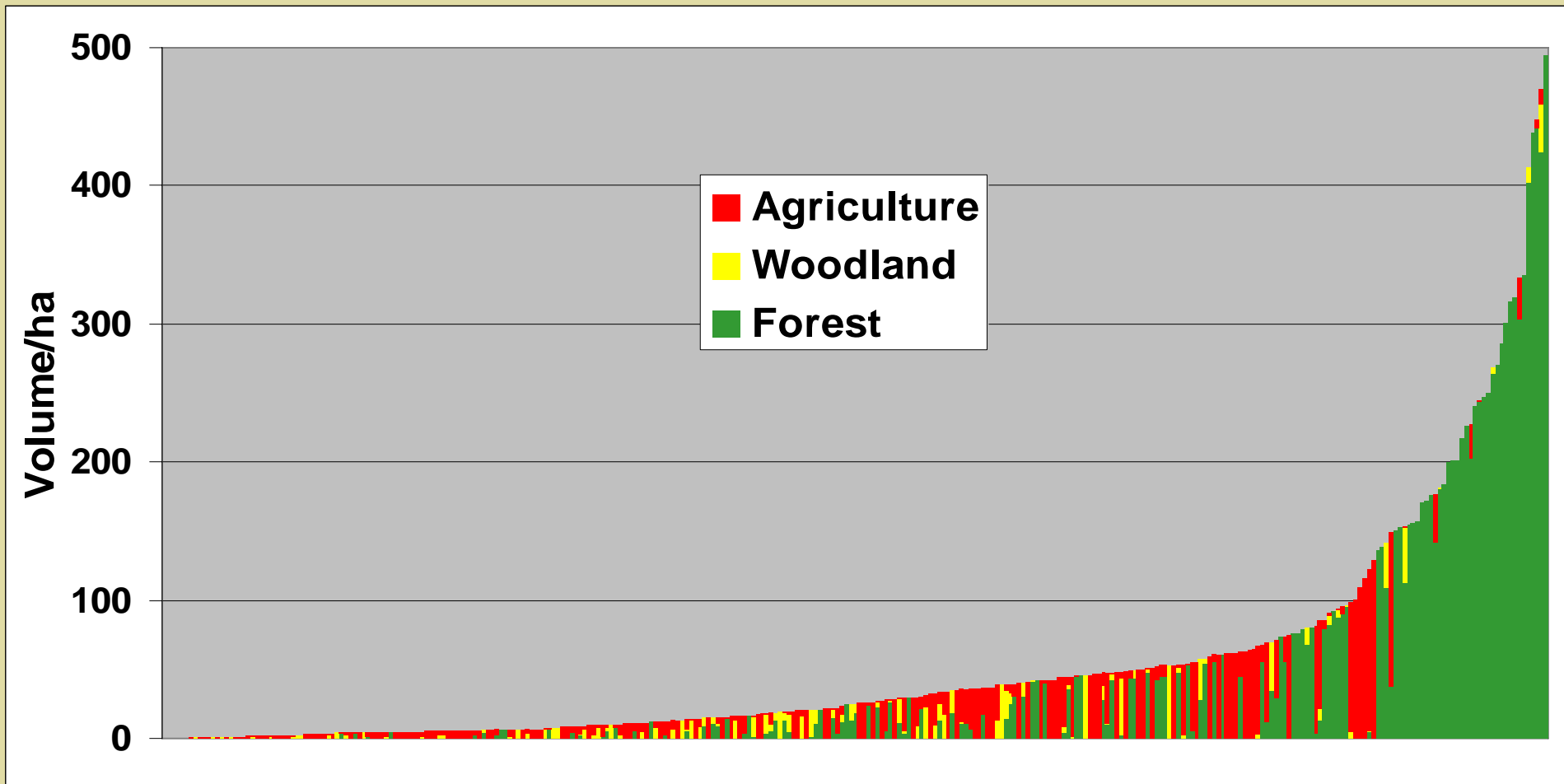
Country example – Growing stock

Trees are everywhere

Forest volume on inventoried tracts



Country example – Growing stock



Conclusion: Monitor all land!



Towards FRA 2010 - Partners



UNECE

JRC

SDSU

NASA

GOFC-GOLD

GEO

FRA 2010 - Meeting the needs

- **Sustainable Forest Management**
- **CBD 2010 Targets**
- **UNFF Global Objectives**
- **Climate modeling**
- **...**



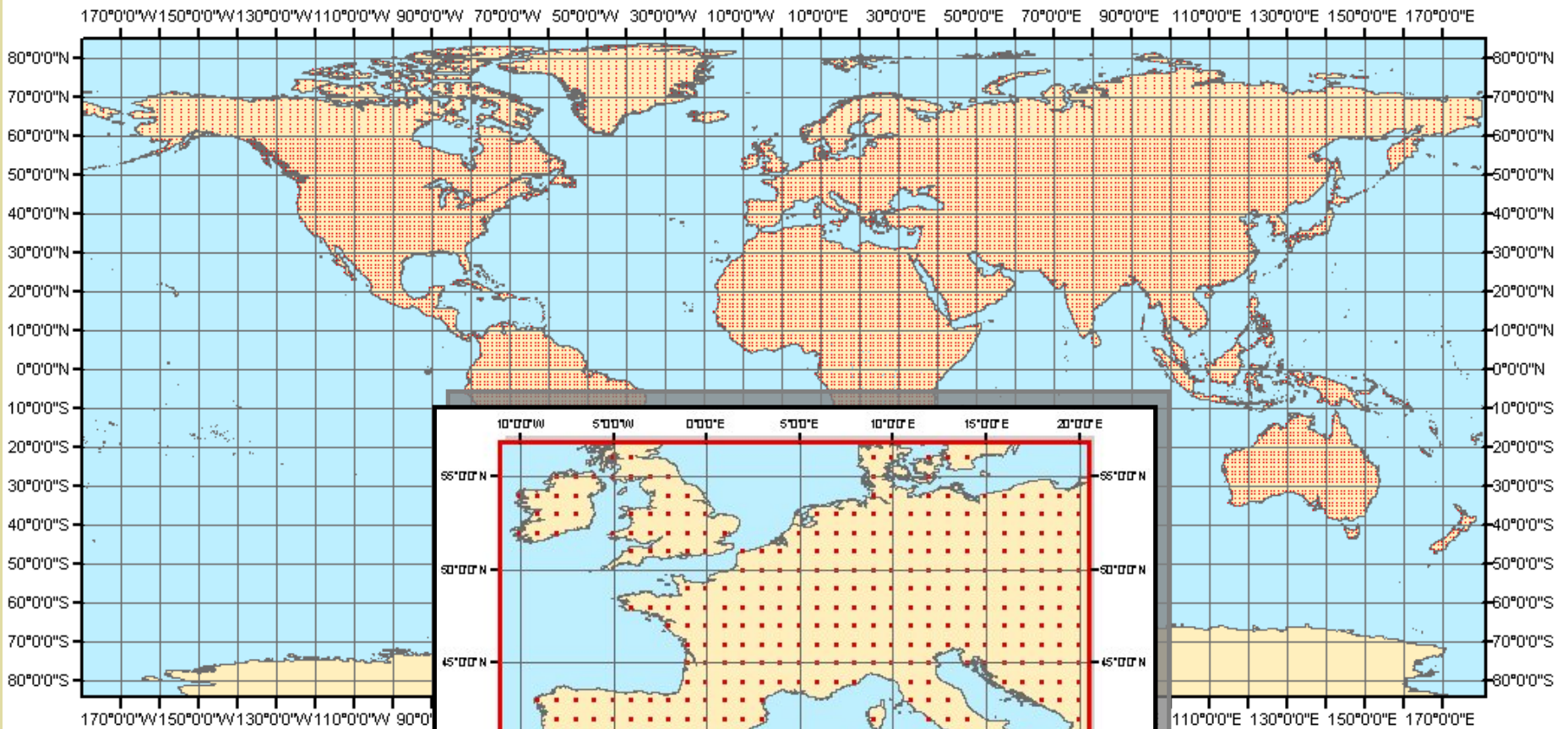
FRA 2010 - Country report tables

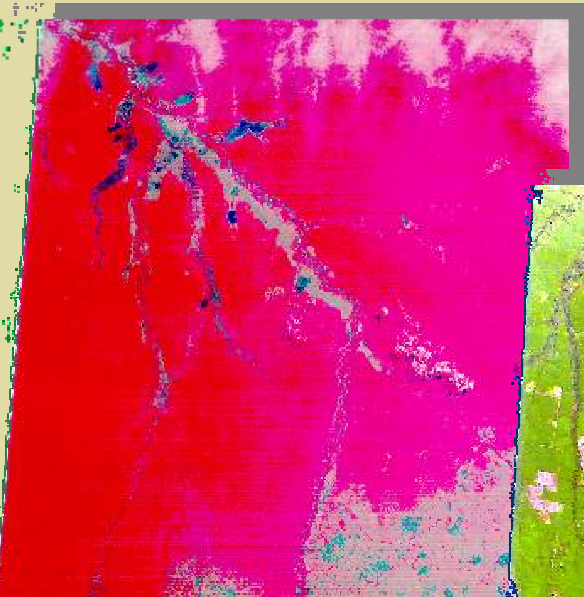
T 1	Extent of forest and other wooded land
T 2	Forest ownership and management rights
T 3	Forest designation and management
T 4	Forest characteristics
T 5	Forest establishment and regeneration
T 6	Growing stock
T 7	Biomass stock
T 8	Carbon stock
T 9	Forest fires

T 10	Other disturbances affecting forest health and vitality
T 11	Wood removal and value of removal
T 12	NWFP removal and value of removal
T 13	Employment
T 14	Policy and legal framework
T 15	Institutional framework
T 16	Education and research
T 17	Public revenue collection and expenditure

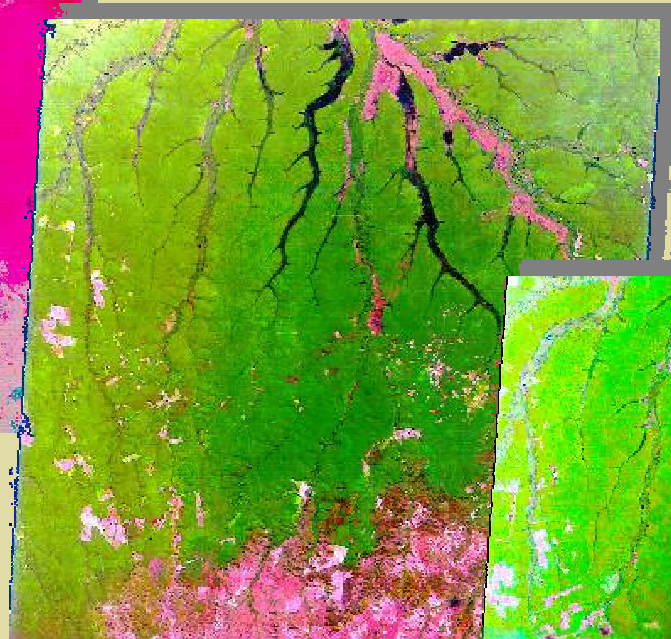


Remote sensing survey





1975

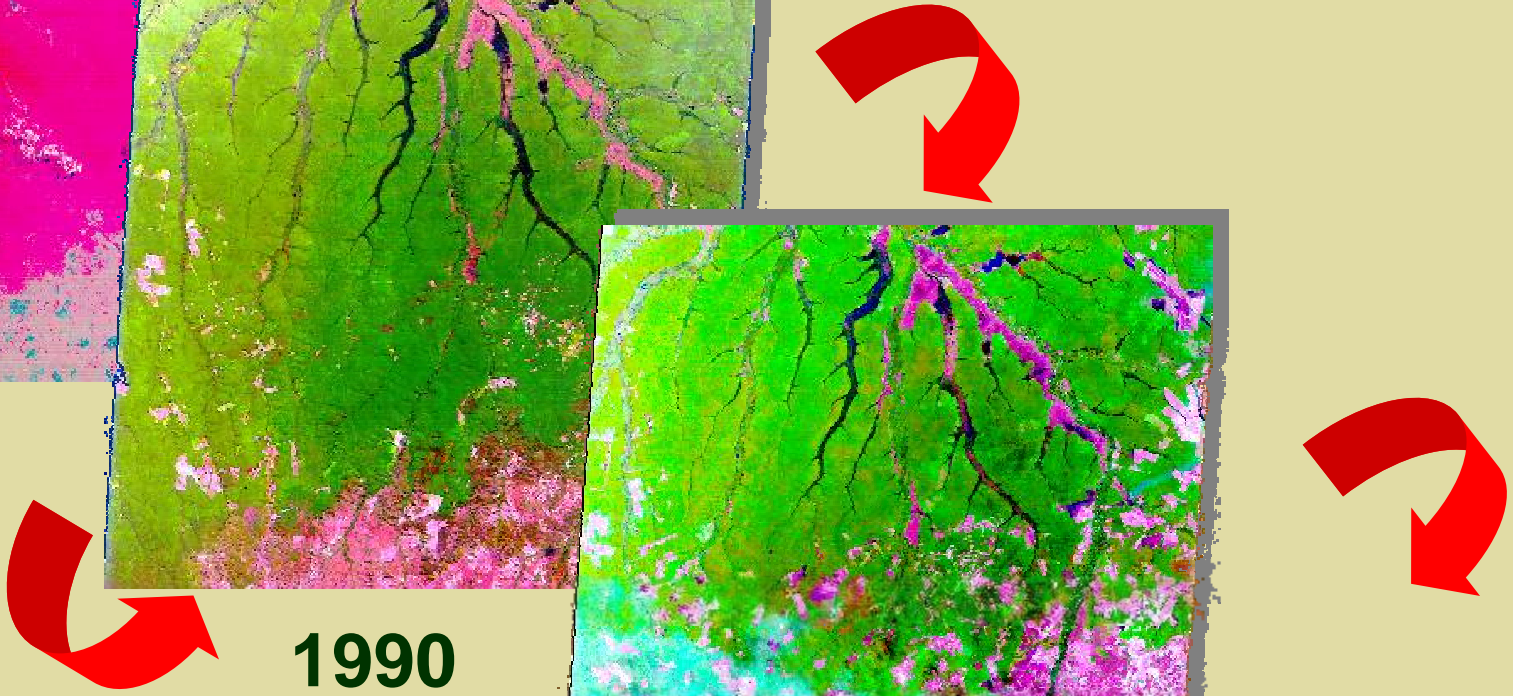


1990



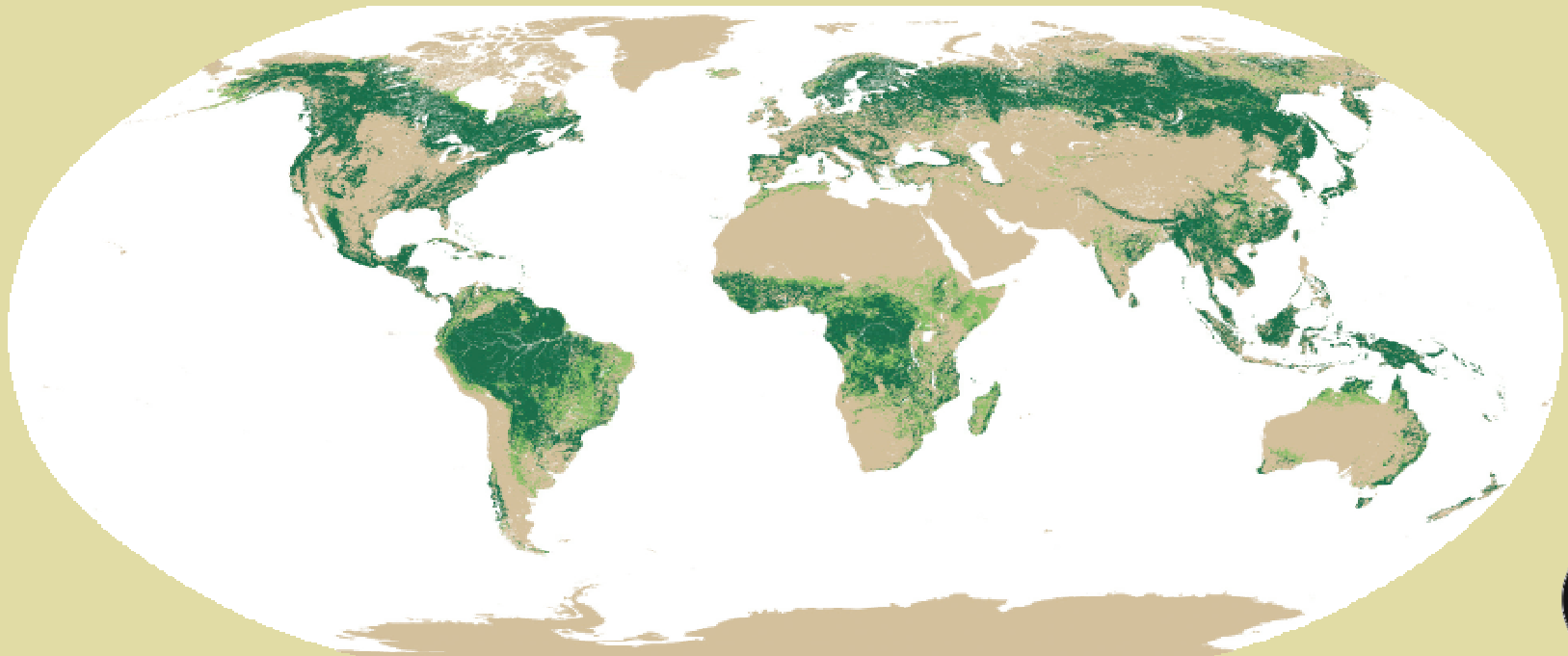
2000

2005



Remote sensing survey

- **Distribution of forests**
- **Accurate trend statistics**
- **Regional, biome & global level**
- **Option to intensify for countries**



Conclusions

1. Strong synergies in monitoring between Climate Change needs and Overall needs
2. Monitoring \neq Accounting
3. But Accounting requires Monitoring
4. Unique opportunity for investing in Forestry/Land use knowledge





THANK YOU

www.fao.org/forestry/fra2010

