



Tropical forests

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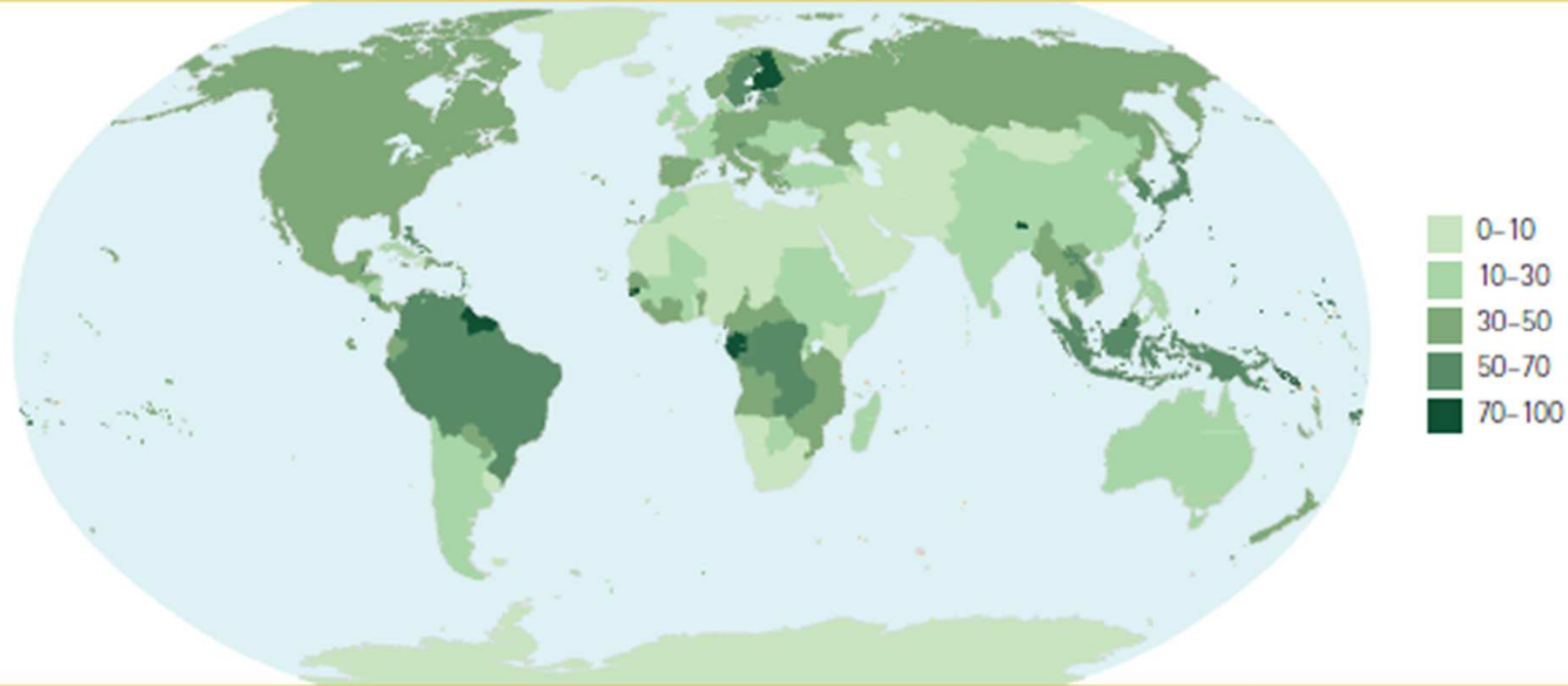
31 March 2011

FAO definition of a forest

- Land > 0.5 ha
 - With trees ≥ 5 m
 - Canopy cover of $\geq 10\%$
- Incl. windbreaks > 20 m width, areas with bamboo & palm, forestry plantations
 - Excludes tree stands in agricultural production & agroforestry systems, urban parks and gardens



Forest area as percent of total land area by country, 2010



- Forests cover 31% of total land area (> 4 billion ha or 0.6 ha/capita)
- > 50% in 5 countries (Russian Fed., Brazil, Canada, US, China)
- 10 countries: no forest at all (islands/peninsulas, city states)

Source: FAO FRA 2010

Characteristics of the world's forests, 2010 (%)



Primary forests: 36% of total forest area – but > -40 million ha since 2000

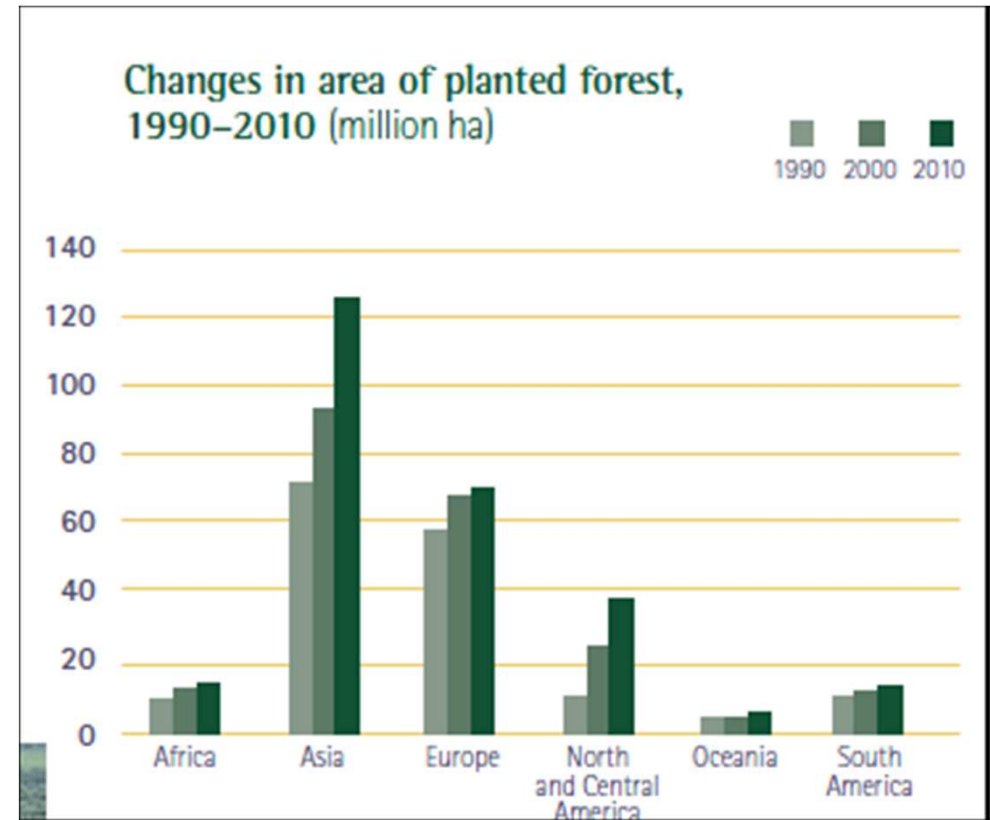
Primary forest = forest of native species with no clear signs of human activities and no significant disturbance of ecological processes

Source: FAO FRA 2010

The area of planted forest is increasing – it now accounts for 7% of total forest area



- Total: 264 million hectares
- Increase: 5 mln ha/yr (2005-2010)
- Mainly due to afforestation
- A lot in China
- 75% native species; 25% introduced species



Source: FAO FRA 2010

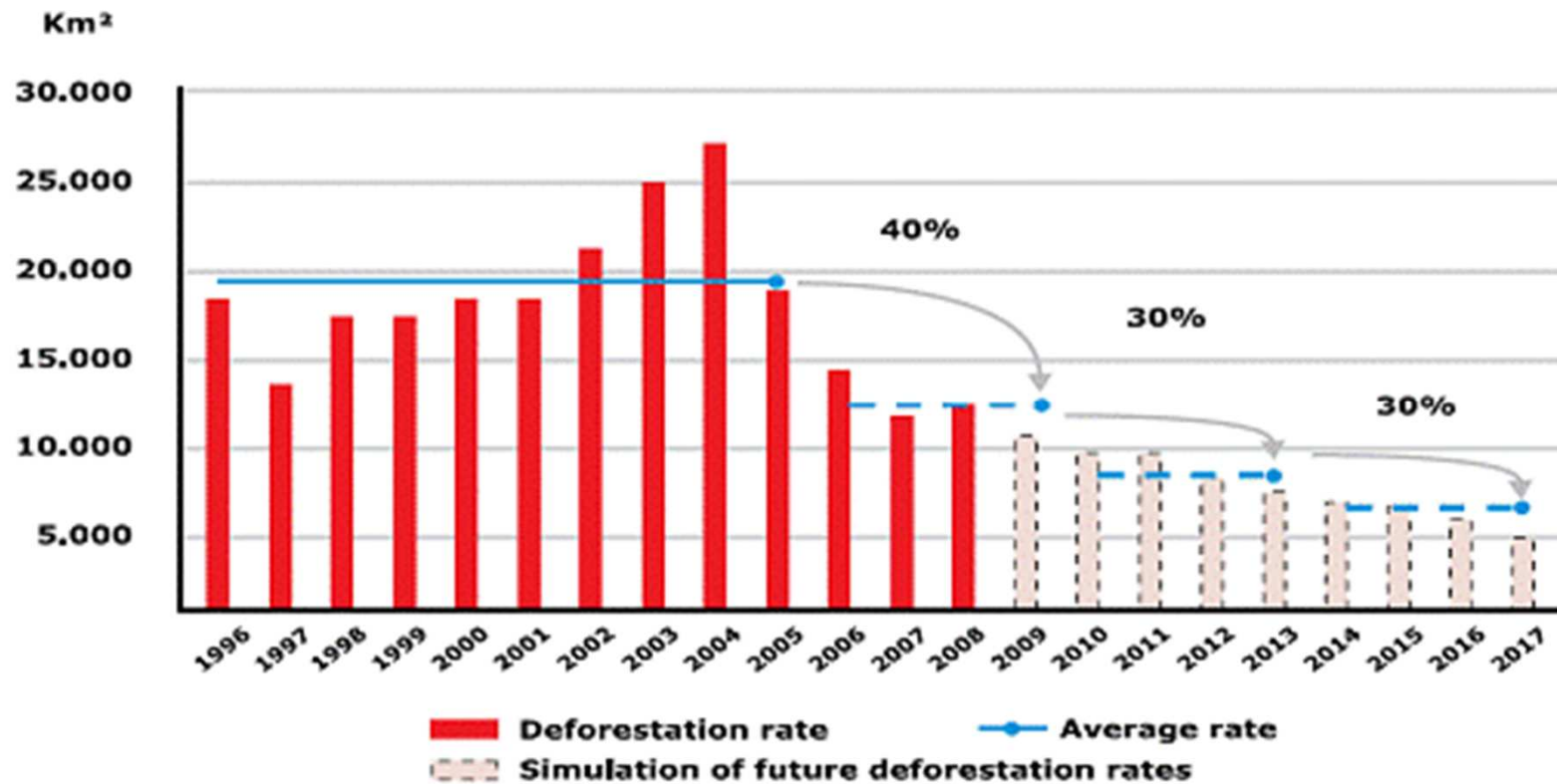


Rate of deforestation is decreasing - but is still alarmingly high

- Worldwide loss -16 mln ha/yr in the 1990s / -13 mln ha/yr in the 2000s
- Annual loss is >3.5 x NL or 1 x Costa Rica
- Highest deforestation rates in Brazil and Indonesia (+/- 0.5%/yr)
- Decreasing rates in both countries since 2000
- Deforestation is worsening in Australia (drought & forest fires)

Source: FAO FRA 2010

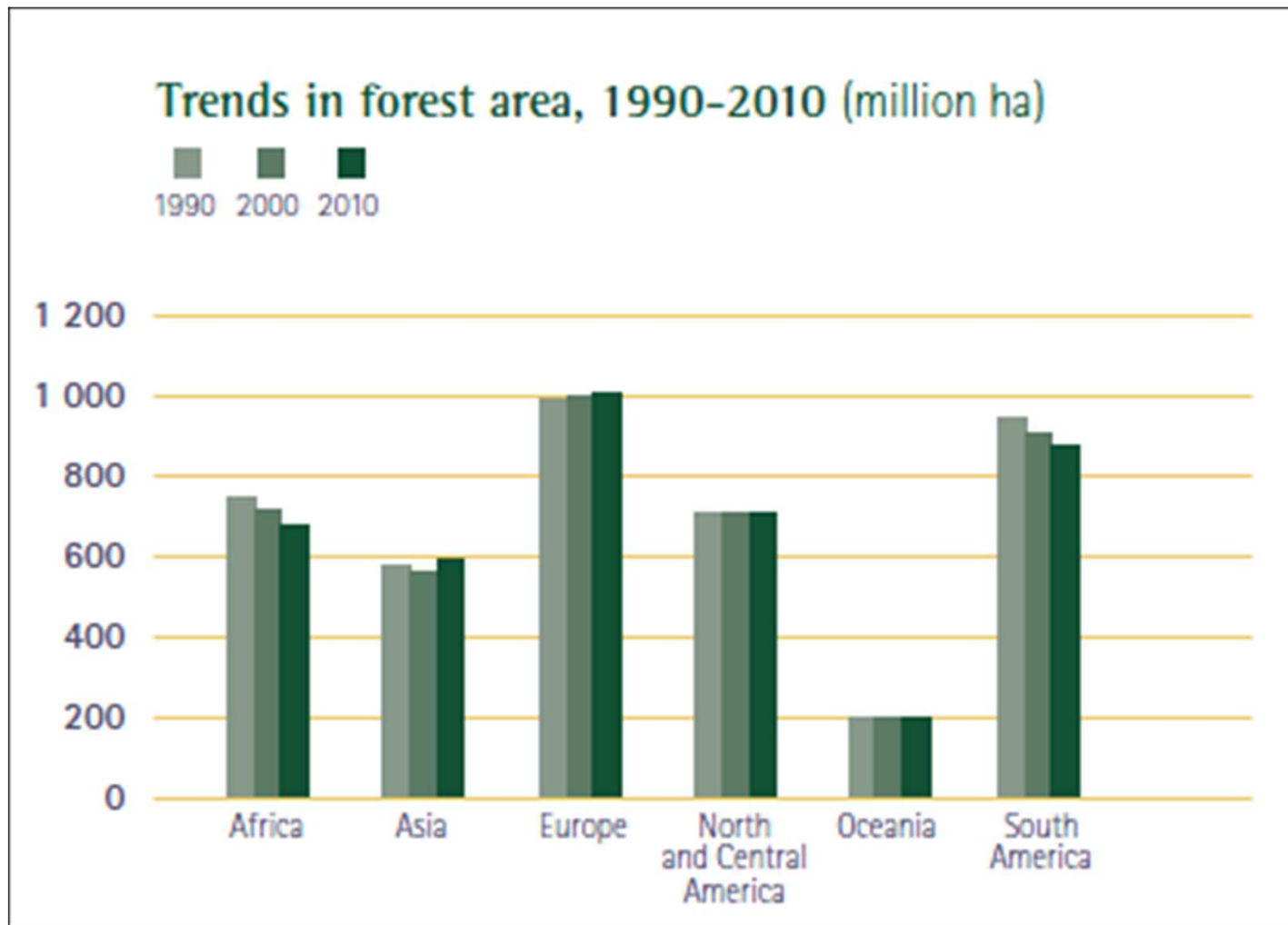
Trends in deforestation rate in Brazilian Amazonia



Source: MMA, 2008.



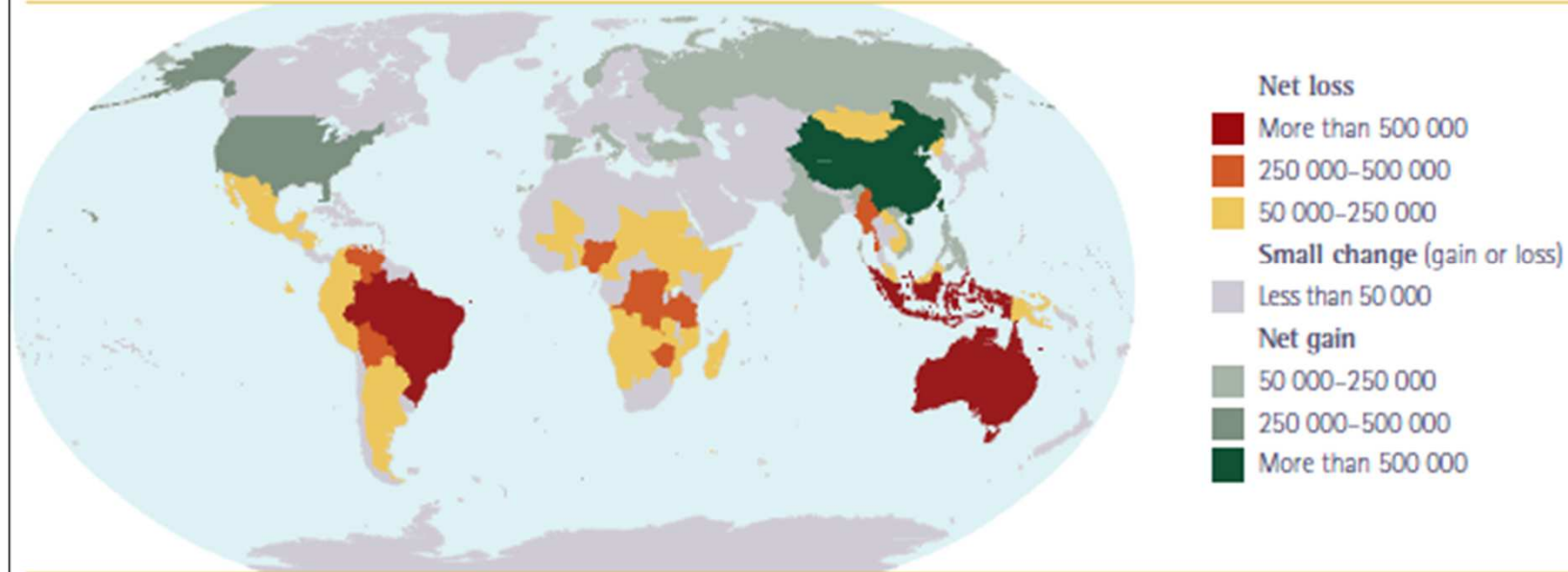
Large-scale planting of trees is significantly reducing the net loss of forest area globally



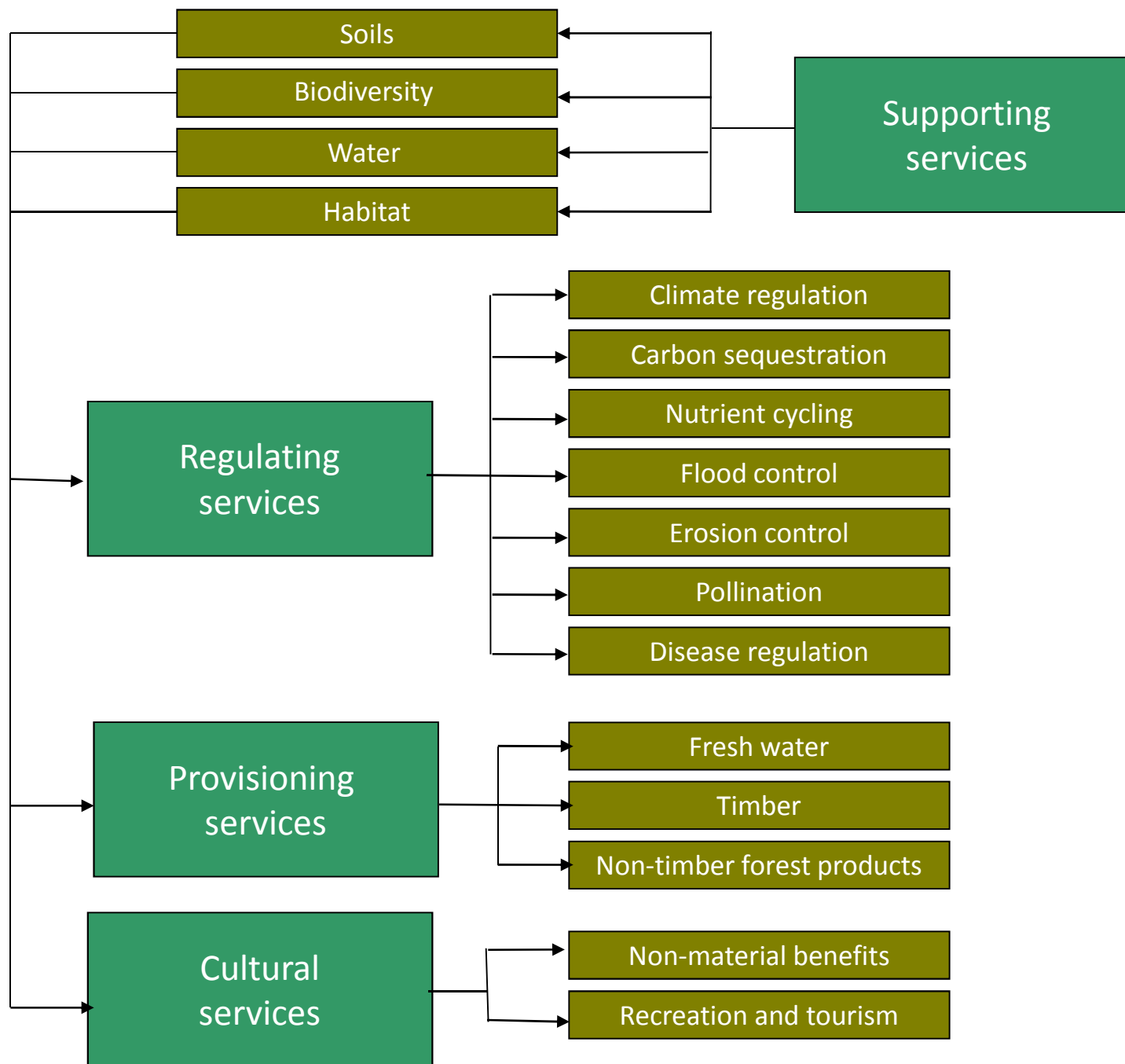
- Largest net forest loss in South America and Africa
- Oceania net loss too
- Europe, US and Asia net increase (afforestation)

Source: FAO FRA 2010

Net change in forest area by country, 2005–2010 (ha/year)



Source: FAO FRA 2010



Source: MEA 2005

Forest mean different things to different people

Farmers:
land for
food and
cash crops

Tourism
agencies:
'eco'tourism

Timber
companies:
logs

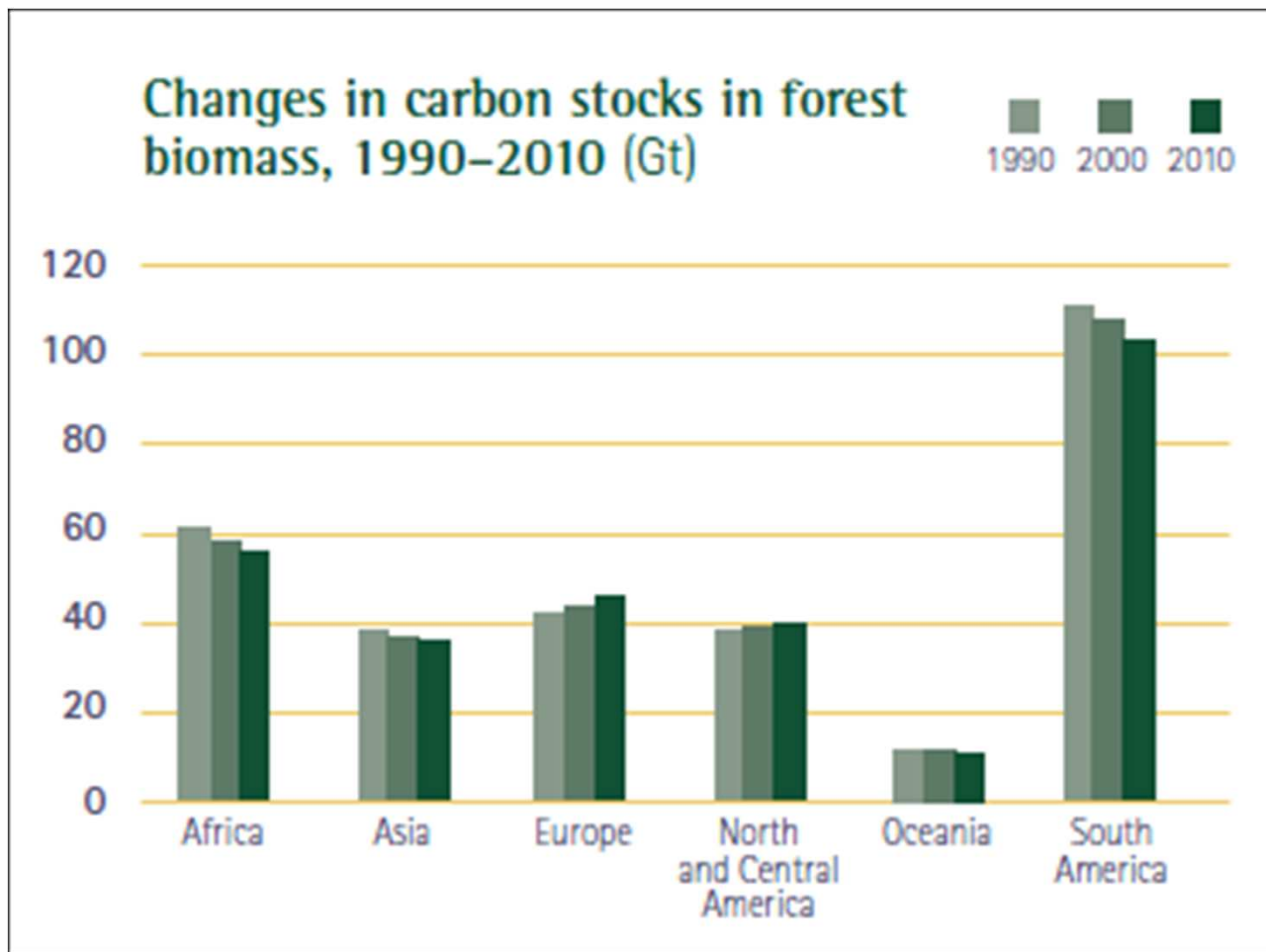
Indigenous
people:
habitat &
territorial
rights

Local forest
dwellers:
NTFPs

Global community: ecosystem services
(notably biodiversity & regulation services)

Phamarceutical
industry:
medicinal
plants





Forests store a vast amount of carbon (289 gigatonnes – Gt)

- Sustainable forest management, planting & rehabilitation → increase forest carbon stocks
- Deforestation, degradation & poor forest management → -0.5 Gt/yr (2005-2010)
- Deforestation: 20% of GHG emissions (IPCCC 2007)

Source: FAO FRA 2010

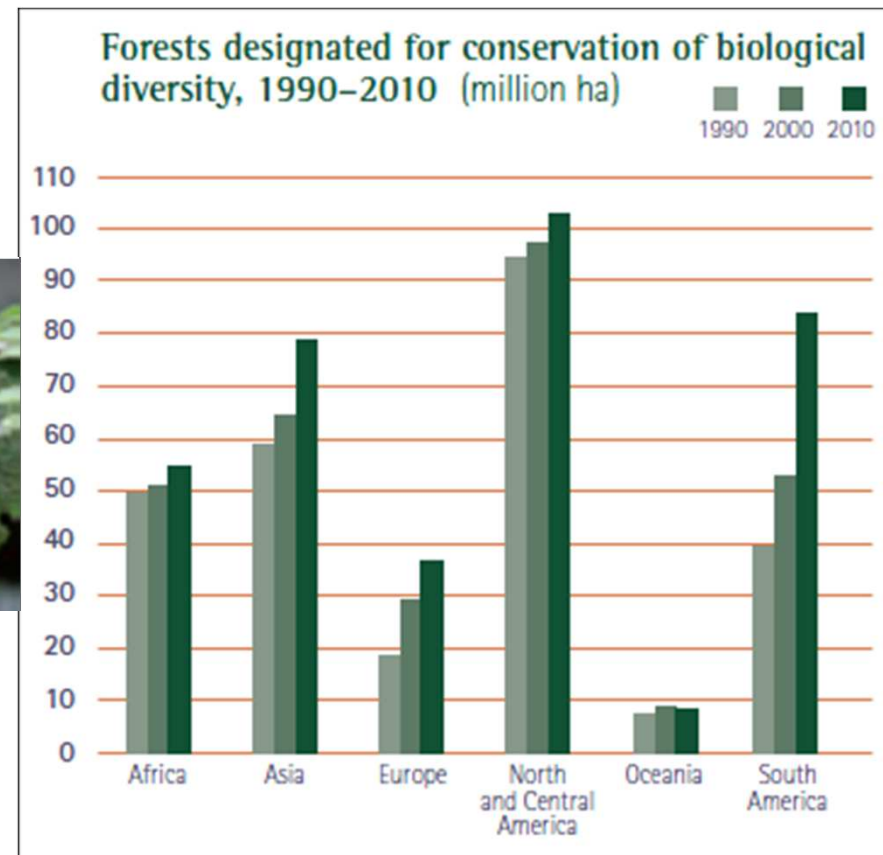
Supporting service: biodiversity

Tropical rainforests:

- 50%-90% of all species
- 2/3 of all higher plants
- 30% of all birds



Source: FAO FRA 2010



- **12% of the world's forests are designated for the conservation of biological diversity**
- Also for protection of soil & water resources & cultural heritage
- Legally established protected areas (national parks, game reserves, wilderness areas): +/- 13% of the world's forests
- 46% designated between 2000-2005

Supporting services: soil & water conservation

- 8% of the world's forests have soil and water conservation as their primary objective

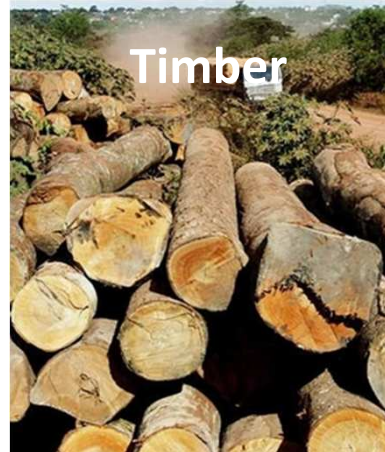


Cultural services

Non-material
benefits people
obtain from
ecosystems



Provisioning services



Forests as a source of livelihood

- Around 10 million people are employed in forest management and conservation – but many more (1.2 billion?) are directly dependent on forests for their livelihoods



Forest governance

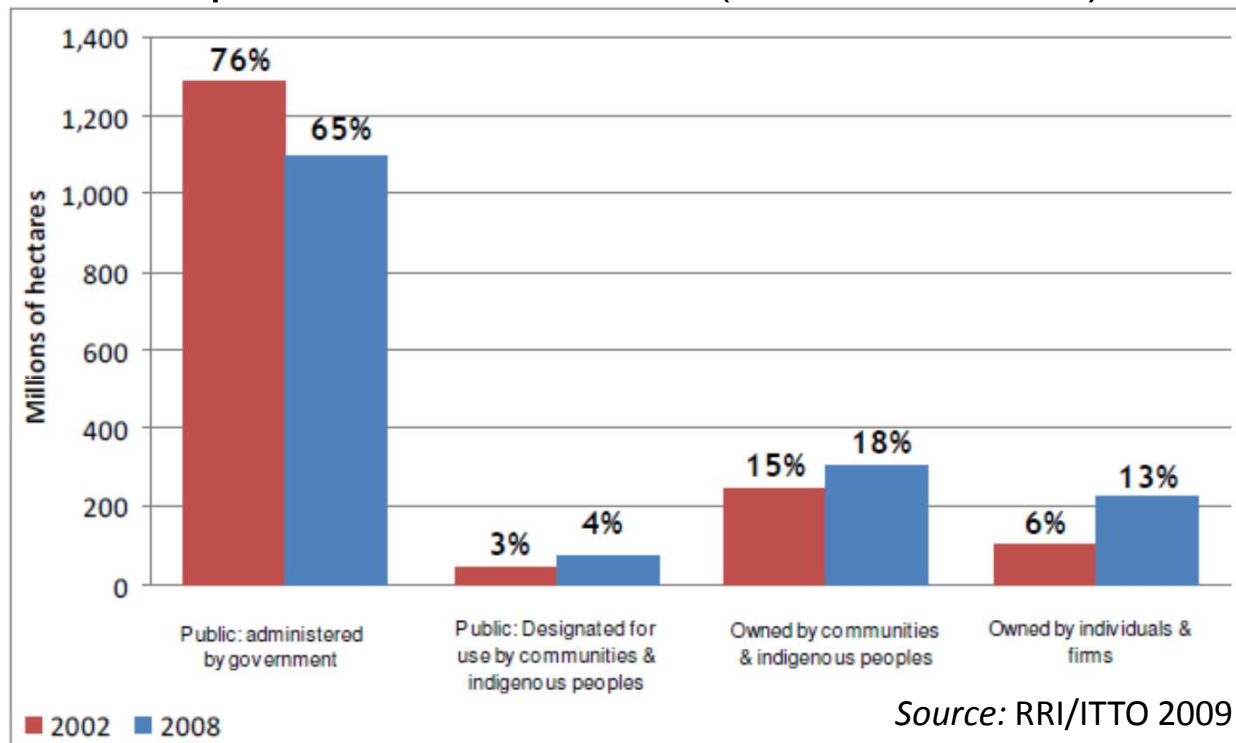
- The process of policymaking, implementing, and monitoring the allocation of forest land and resources, encompassing:
 - decisions on how and to what ends forests are managed
 - who has a say in these decisions
 - what is done to enforce forest laws and policies on the ground
- Is increasingly hybrid, multilevel, cross-sectoral and interactive
 - not only central government, but also gov't at lower levels, civil society organisations and private sector

Forest governance issues

- Forest policy & legislation
- Ownership & tenure arrangements
- ‘Bricolage’
- Forest management & certification
- Law enforcement / FLEGT processes
- Conflict management
- REDD

Forest ownership

Figure 1: Forest tenure distribution by tenure category in 30 tropical forest countries (2002 and 2008)

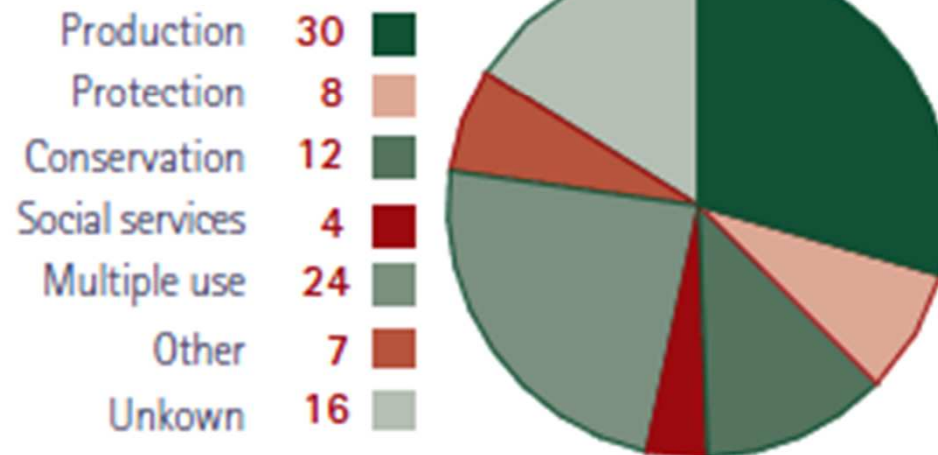


80% of the world's forests are publicly owned, but ownership and management of forests by communities, individuals and private companies is on the rise (FRA 2010)

Forest management

Forests are managed for a multitude of uses and values

Designated functions of the world's forests, 2010 (%)



Source: FAO FRA 2010

Example: Ghana

- Widespread illegal logging & farming
- Declining forest resources

Key strategy late 1990s:

- GSBA (protected areas)
- Reduce deforestation
- Curb biodiversity loss
- Reforestation (plantation development)
- Restore degraded areas
- Create employment & livelihood opportunities

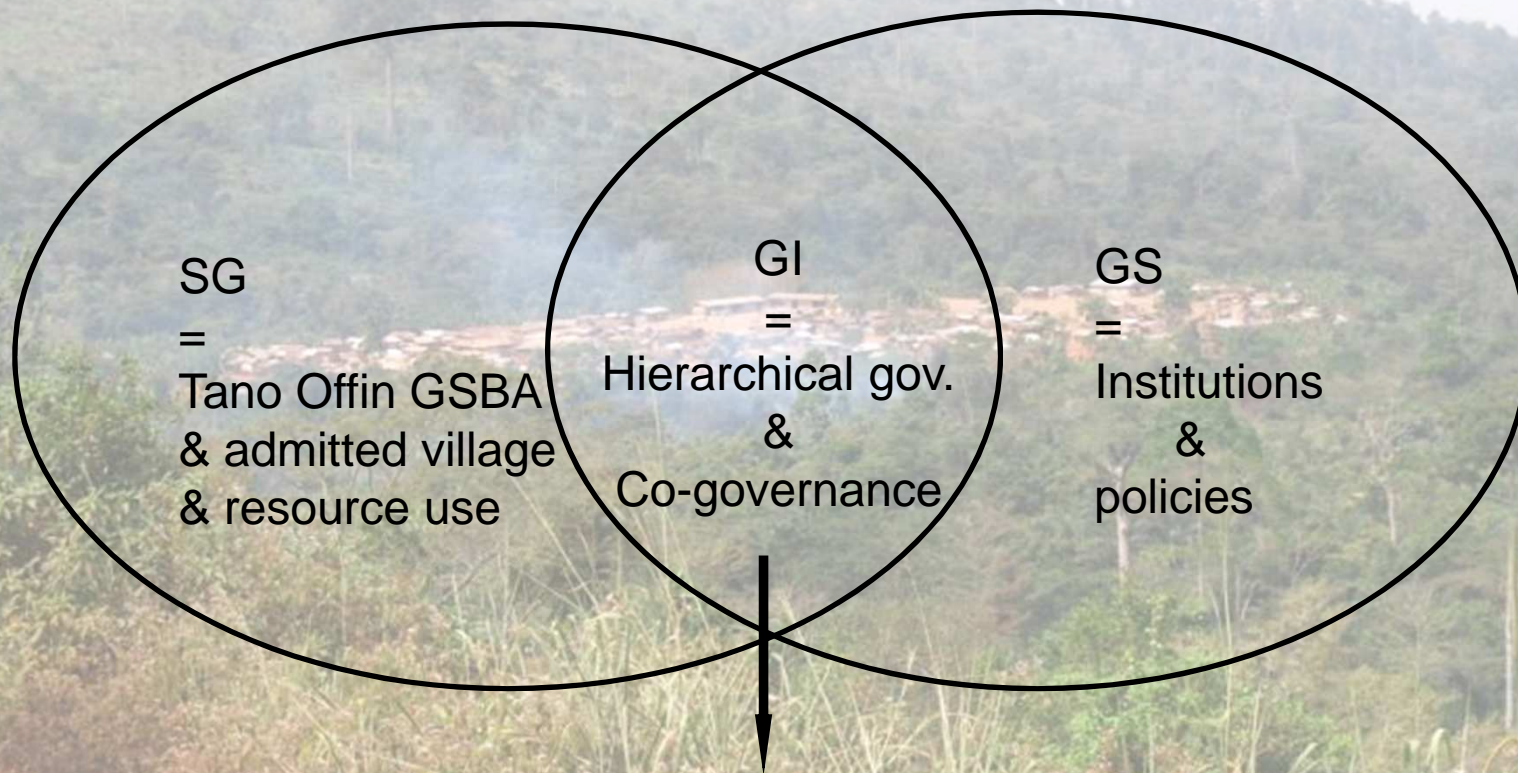


Consequences of forest protection

- Loss of access/use rights
- No adequate compensation
- Conflicts



Governing structure



Governing outcomes:

- Resource management
- Conflicts & conflict management strategies

SG = System to be governed; GI = Governing interactions; GS = Governing system

System to be governed

The forest reserve:

- High biodiversity
 - Rich in water bodies
- } → Tano Offin GSBA (45% of forest area)

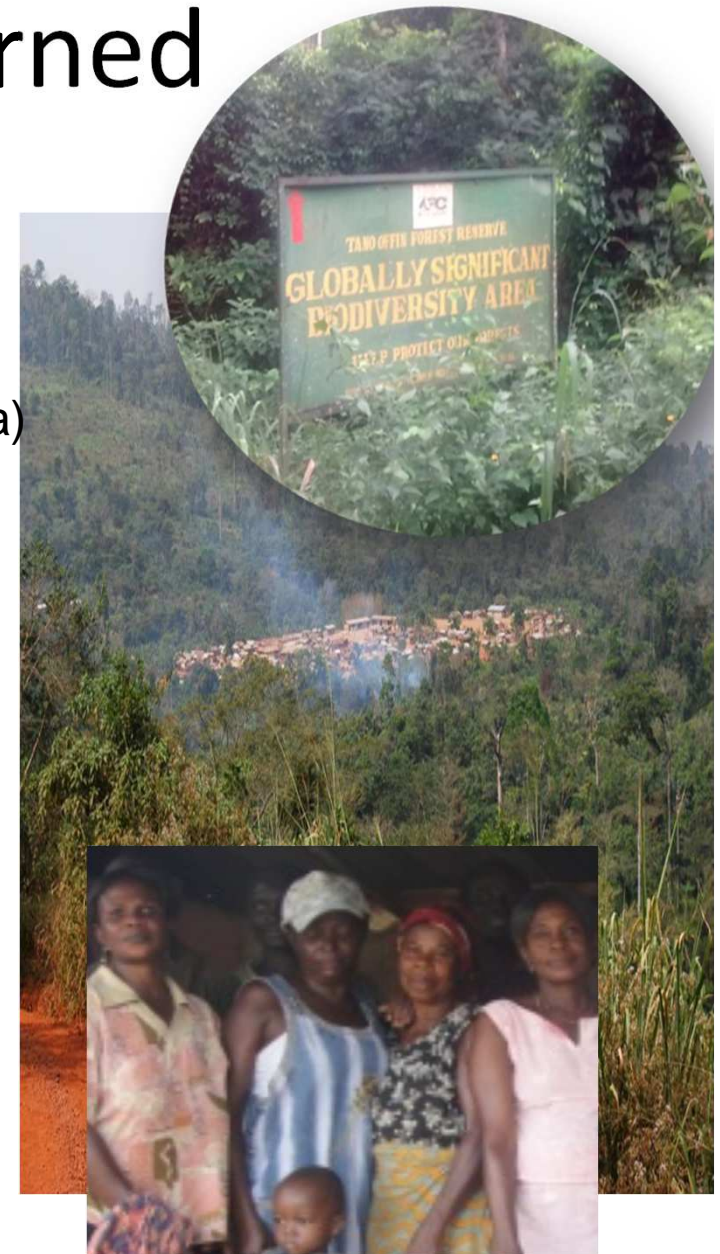
The admitted village in the middle:

- Kyekyewere

The people:

- 400-500 inhabitants (n=119)
- Livelihoods linked to forest resources
- Food crop farming is main occupation

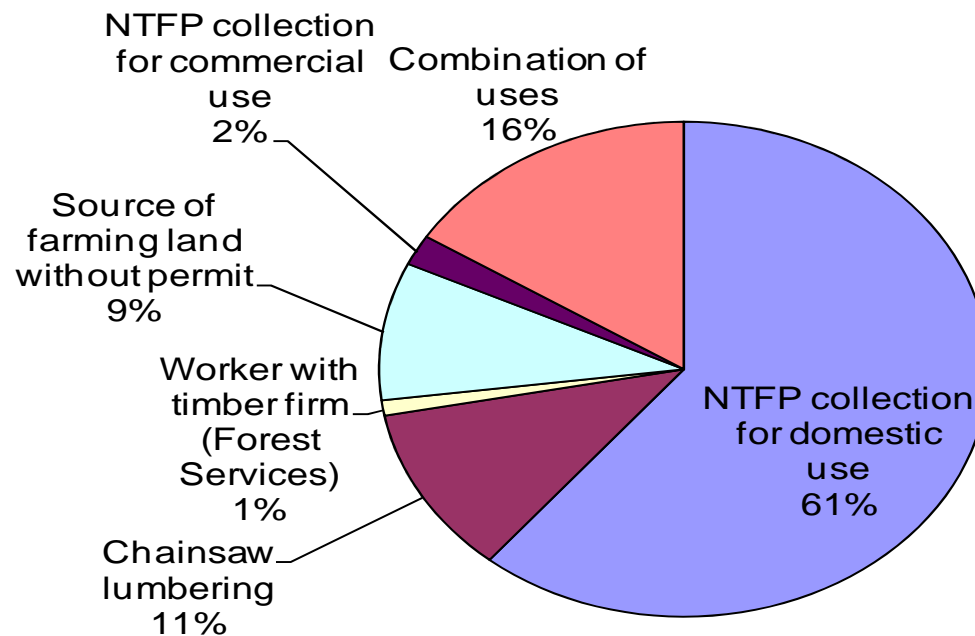
RESULT



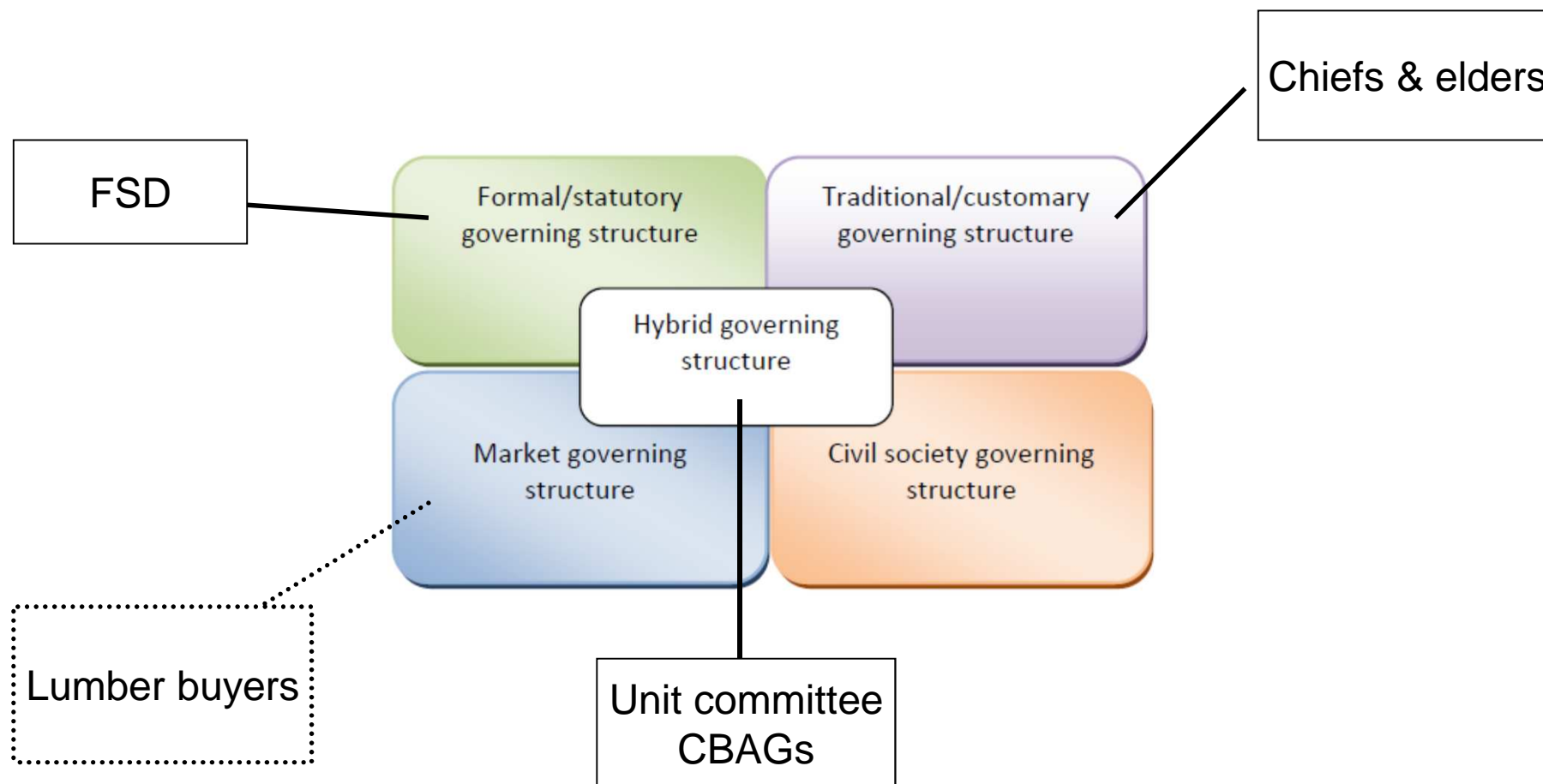
System to be governed

Forest & forest land use

(n = 87)



Governing system - actors



Governing system - policies

- Permit system (permission high officials)
de facto denying access
- Community investment fund for alternative livelihoods
limited to few people; not successful
- Reforestation schemes (e.g. MTS)
does not apply to the admitted village

Governing interactions

- CBAGs as a co-management approach
in practice hierarchical 'command-and-control'
- GSBA participatory management plan 2007
plan is not yet operational

Governing outcomes - Conflicts

Conflicts related to forest resources



NTFPs for domestic use (plants)



Commercial NTFP extraction (plants)



Hunting

Chainsaw lumbering ,



RESULT

Conflicts related to forestland use

Illegal farming &
extension of admitted farms



RESULT

Conflict features

- Causes
 - Direct: manifest behaviour ('impairment')
 - Indirect: antecedent conditions
- Conflict actors and scale
- Dynamics
 - Seasonality
 - Intensity
 - Violence



Governing outcomes - Conflict management strategies

- Mixture of CM strategies: negotiation, force, adjudication, mediation-arbitration, avoidance etc
- Key role for chief and elders



Conclusions

- Tropical forests still disappear at alarming rates, but there is also reason for optimism
 - More reforestation
 - More protected areas
- Forests mean different things to different people
 - This inevitable leads to conflicts
 - Forest governance, including conflict management, is needed to reconcile different interests

Meda ase

Thank You Mahalo
Kiitos
Tack
Grazie
Obrigado
Takk
Gracias
Thanks
Toda
Merci

Terima kasih