

GOFC-GOLD

Global Observation of Forest Cover and Land Dynamics



Land Cover
Project Office

REDD+ in the international context – background for the workshop

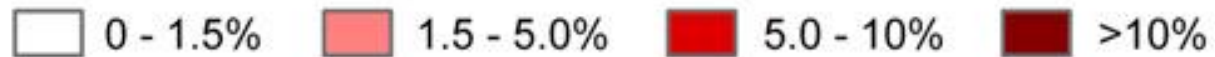
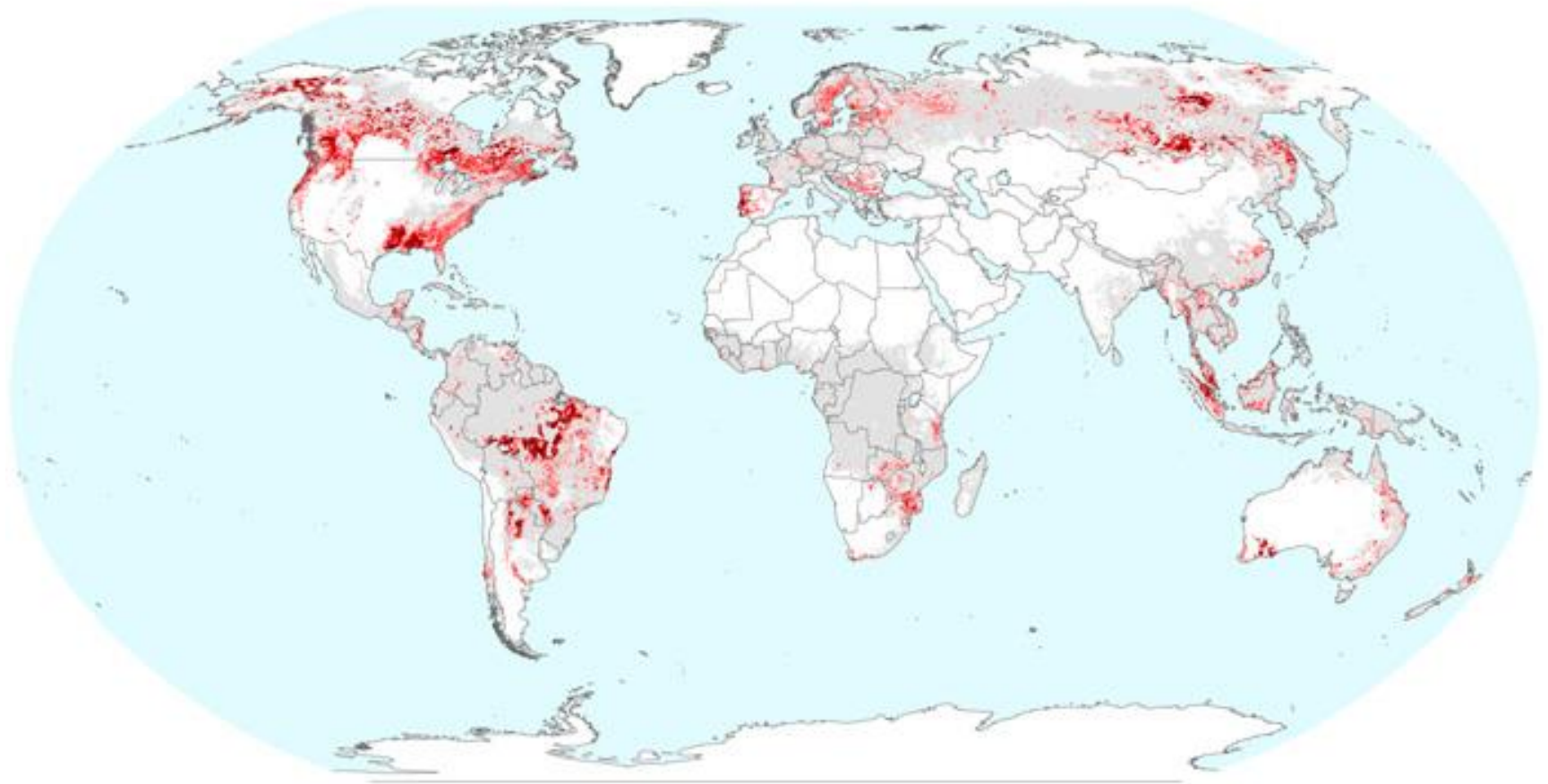
Brice Mora



WAGENINGEN **UR**
For quality of life

Miombo Regional Network meeting , Maputo, July 23-25, 2013

Percent gross forest cover loss 2000–2005



per 20x20 km sample block
Hansen et al., 2010



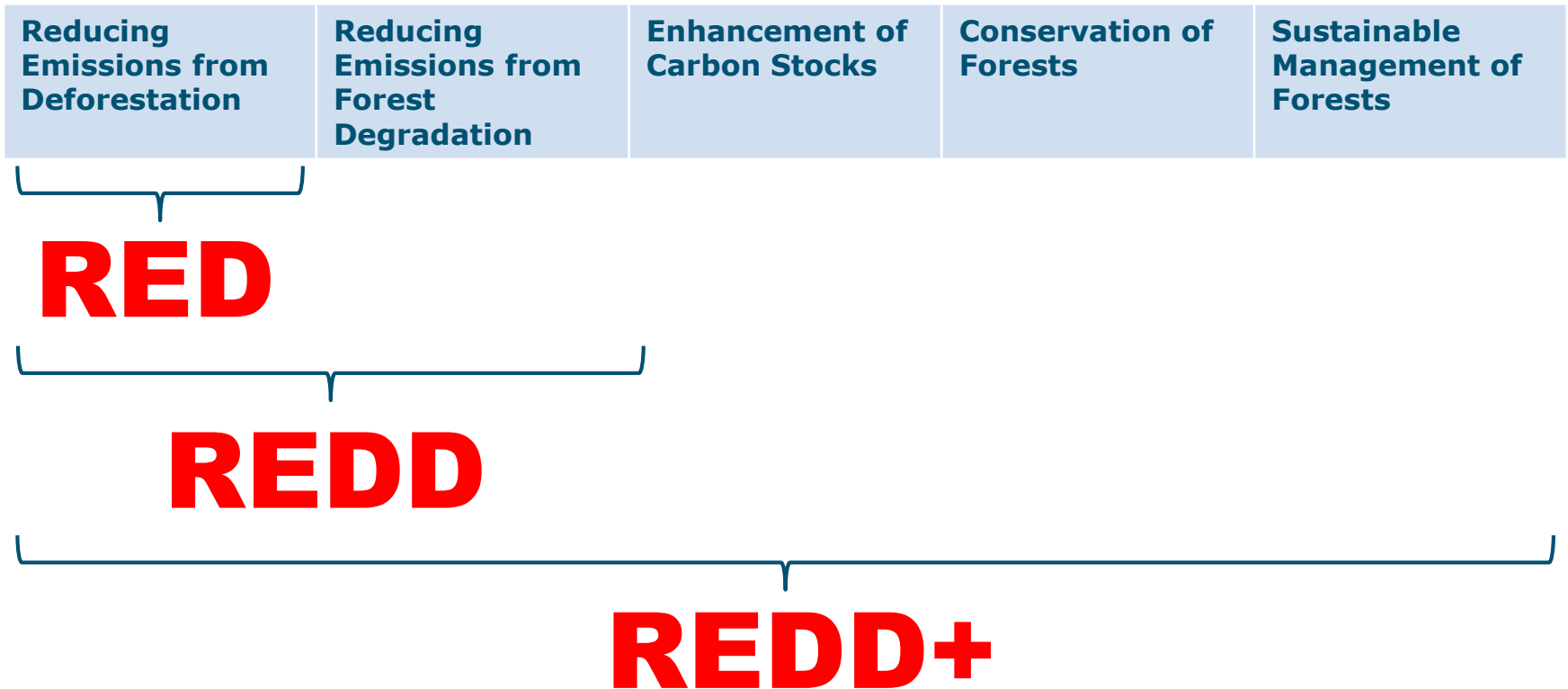
Need for actions for forests to fight climate change

1. for the long-term conservation of forests to maintain its current or natural carbon reservoir,
2. to change the impact of human activities (i.e. causing carbon emissions from land use) in forests to stabilize or increase terrestrial carbon stocks in the long-term,
3. for a change in current human activities towards reforestation of land to increase the terrestrial carbon sink.

System needed for measuring, reporting and verification (MRV)

What is REDD+?

- Negotiated under the UNFCCC (climate convention) since 2005



Guidance from negotiations

- UNFCCC COP 13 2007 in Bali:
 - Supports use of a combination of remote sensing and ground-based forest carbon inventory approaches for estimating anthropogenic forest-related GHG emissions and removals, forest carbon stocks and forest area changes
 - Reporting based on IPCC Good Practice Guidelines
- UNFCCC COP 16 2010 in Cancun:
 - REDD+ results-based actions should be fully measured, reported and verified (MRV)
 - “Request” – for a robust and transparent national forest monitoring system for REDD+



Remote sensing status and context

- UNFCCC COP 17 2010 in Durban:
 - Modalities for establishing forest reference (emission) levels
 - Some monitoring issues for upcoming SBSTA and COP
 - Modalities for REDD+ MRV systems
 - Role and consideration of drivers (of deforestation/degradation ...)
 - Reference (emission) levels
- Science and technical community responds to and informs negotiation and implementation
- Monitoring efforts drives policy and vice versa

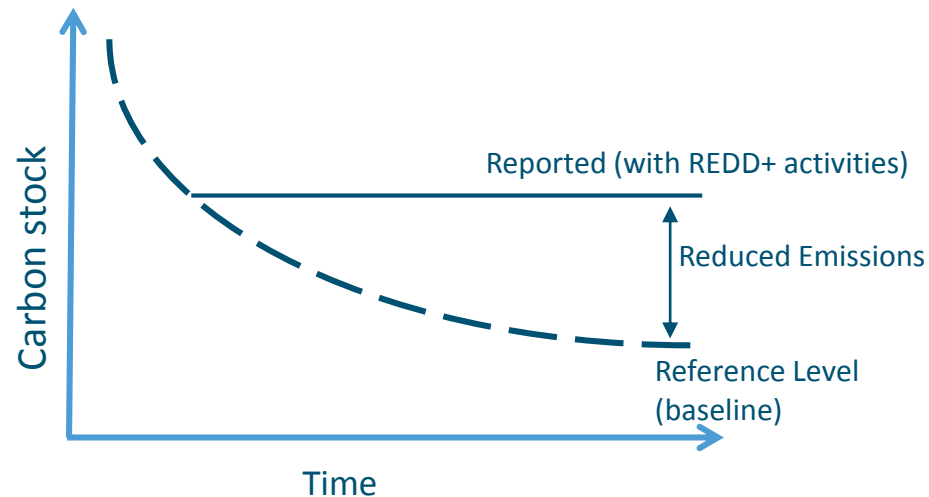
IPCC Guidelines for National Greenhouse Gas Inventories

- *Revised 1996 Guidelines -Land-Use Change and Forestry (LUCF)*
- *2000 Good Practice Guidance and Uncertainty Management (GPG2000)*
- *Good Practice Guidance for Land Use, Land-Use Change and Forestry (GPG-LULUCF)*
- *2006 IPCC Guidelines for National Greenhouse Gas Inventories (AFOLU)*



Measuring, Reporting and Verification (MRV)

MRV includes reporting of GHG emission reductions against a reference level (RL) according to IPCC Good Practice Guidelines (GPG). Required for the results-based compensation mechanism



Foundations for REDD+ monitoring

1. Guidance for monitoring and implementation provided under the UNFCCC;
2. Monitoring should be part of the national REDD implementation strategy and policy objectives;
3. Knowledge in the use and application of IPCC LULUCF good practice guidelines;
4. Existing national forest monitoring capabilities;
5. Expertise in understanding and estimating terrestrial carbon dynamics and related human-induced changes and its drivers;
6. The consideration of different capabilities for monitoring forest changes in the historical and for the future (effort for continuous improvements)

Developing a roadmap for MRV system

- Definition of needs for REDD+ MRV :
 - UNFCCC and IPCC GPG requirements
 - National REDD+ and policy priorities and opportunities
- Develop a roadmap to establish long-term, sustained capacities:
 - Capacity gap analysis
 - Any REDD+ MRV development progress needs to improve national and sub-national MRV capacities
 - National steering mechanism and institutional arrangements need to be in place
 - Take a step-wise approach with near-term priorities and long-term goals (development of ToR)

Estimation gross carbon emissions

Gross carbon
emissions

Gross deforestation

Gross degradation

$$C_{gr_em} = \left(\sum_{i=1}^m A_{loss(i)} \cdot C_{loss(i)} \right) + \left(\sum_{i,j=1}^{n,m} A_{dgr(ij)} \cdot C_{dgr(ij)} \right)$$

A_{loss} = Area of deforestation (ha)

C_{loss} = Carbon emission from deforestation (t/ha)

for forest types $i \dots m$

A_{dgr} = Area affected by degradation (ha)

C_{dgr} = Carbon emission from degradation (t/ha)

for degrad. types $j \dots n$

for forest types $i \dots m$

Area change is most dynamic: to be observed from satellite !

Estimation of activity data and emission factors

Applying IPCC Good Practice Guidelines (LULUCF, AFOLU):

Approaches (Area change)	Tiers (C pool change)
1. Basic land use data -country statistics, i.e. FAO	1. IPCC default values (i.e. biomass in forest types, carbon fraction etc.)
2. Surveys of land change: i.e. national statistics on land use transitions	2. Country specific data (i.e. from field surveys, inventory, permanent plots)
3. Spatially explicit data (Annex I Kyoto reporting): a. From remote sensing b. National inventory	3. National inventory of C stocks in different pools and assessment of any change in carbon pools