



INTEGRATED SINK ENHANCEMENT ASSESSMENT



I N S E A
P A R T N E R S

INSEA and the AFOLU sector

- Review of AFOLU policies under the Kyoto Protocol
- Options of the AFOLU sector for Post-2012 regimes

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PART 1: AFOLU in the Kyoto Protocol

- ▣ Summary of LULUCF in the Kyoto Protocol
- ▣ Decisions by end of 2006
- ▣ Implementation in Annex I countries
- ▣ CDM experiences

PART 2: AFOLU post 2012

- ▣ 2006 IPCC Guidelines
- ▣ Options for including AFOLU post 2012
- ▣ Focus on reducing emissions from deforestation

LULUCF in the Kyoto Protocol

Direct human induced ...

- ▣ Afforestation, reforestation, deforestation (gross-net)
- ▣ Revegetation (gross-net)
- ▣ Forest management (gross-net, 15% cap)
- ▣ Cropland / Grazing Land management (net-net)
- ▣ Projects (e.g., CDM, 1% cap)

LULUCF in the Kyoto Protocol

		<u>Final</u>	
		Forest land	Non-forest land
<u>Initial</u>	Forest land	<i>FM, GM, CM</i>	D
	Non-forest land	A / R	<i>RV, GM, CM</i>

Carbon Pools

- Above-ground biomass
- Below-ground biomass
- Dead wood
- Litter
- Soil organic matter

JI, CDM

CDM:

- ▣ Afforestation and reforestation
- ▣ Projects to replace non-renewable biomass (10% of global energy) discriminated against

JI:

- ▣ AR, forest protection, CM, GM possible
- ▣ Hardly any projects in practice

Steps in estimating and reporting supplementary information

- **STEP 1.** Define “forest”, apply definitions to national circumstances, establishing precedence conditions and/or hierarchy among selected Art. 3.4 activities
- **STEP 2.** Identify lands subject to activities under Article 3.3 and any elected activities under Article 3.4
 - ✓ Temporal and definitional constraints
 - ✓ Use methods in ch. 2 and supplementary methods in ch. 4
- **STEP 3.** Estimate carbon stock changes and non-CO₂ greenhouse gas emissions on the lands identified under Step 2 above
 - ✓ Use methods in ch. 3 and supplementary methods in ch. 4

Land Use Related Choices under the Kyoto Protocol

Obligations, Options and Methodologies for Defining Forest and Selecting Activities under KP Article 3.4.

www.joanneum.at/carboinvent/workshop.php



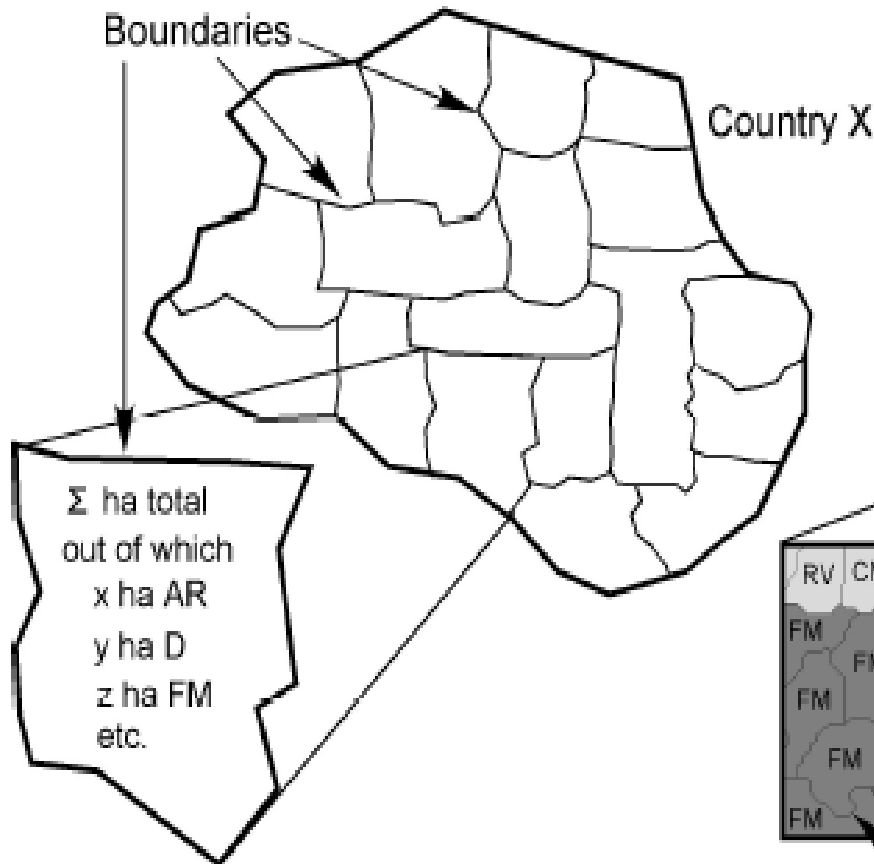
Decisions on „forest“ and Art 3.4 will influence

- ❑ GHG benefits + uncertainties from forest def;
- ❑ GHG benefits + uncertainties from Art 3.4;
- ❑ Risks (liabilities) from Art. 3.4,
- ❑ monitoring and reporting costs,
- ❑ trade-offs / synergies with other objectives, such as environmental or socio-economic
- ❑ incentives (if any) that may be required to achieve GHG and other objectives.

Two Reporting Methods for Land Subject to Articles 3.3 and 3.4 Activities

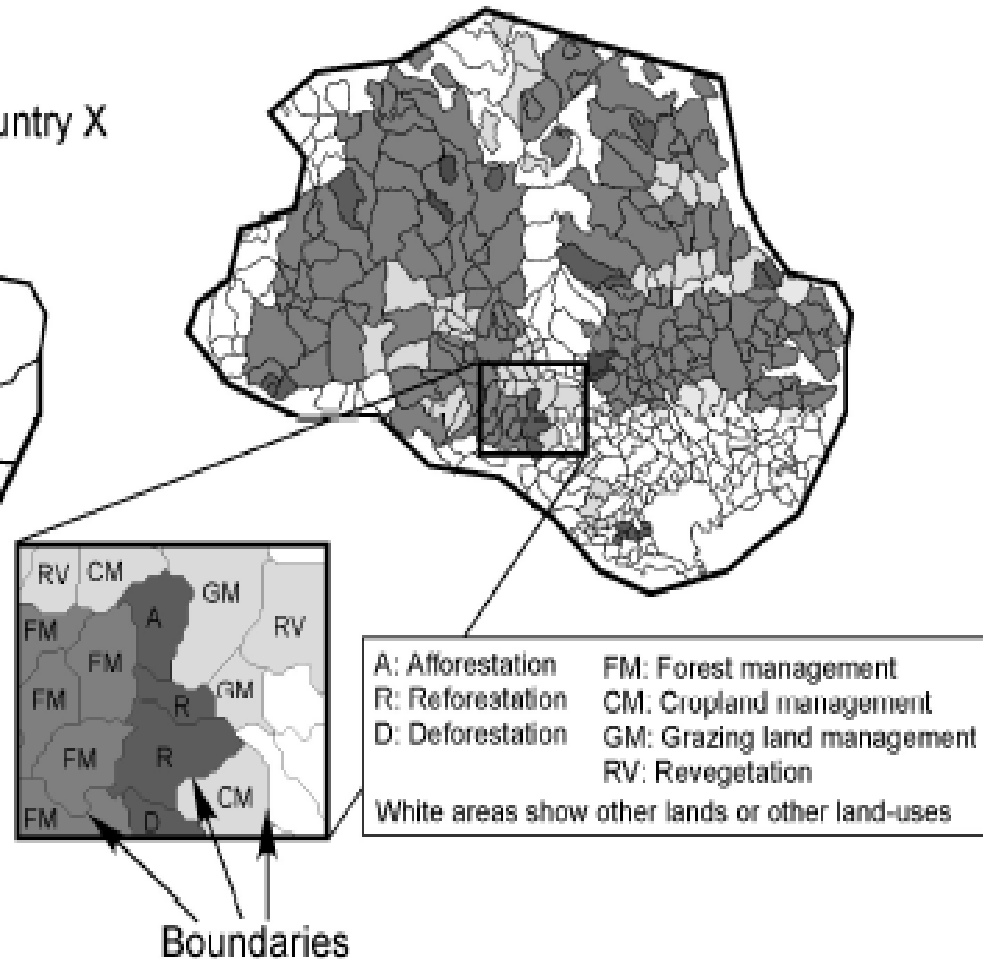
Reporting Method 1

A geographic boundary encompasses units of land or land subject to multiple activities.



Reporting Method 2

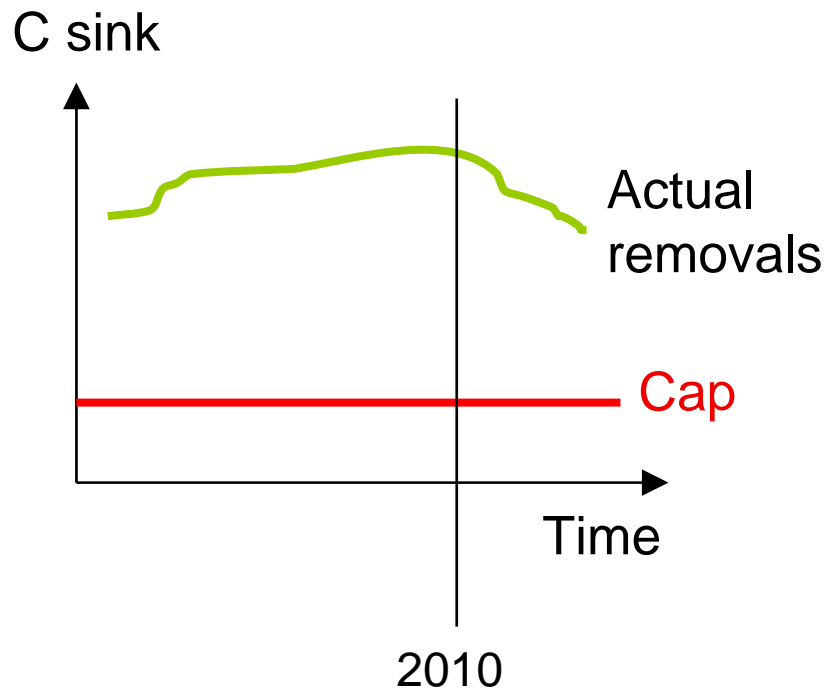
A geographic boundary encompasses units of land or land only subject to a single activity.



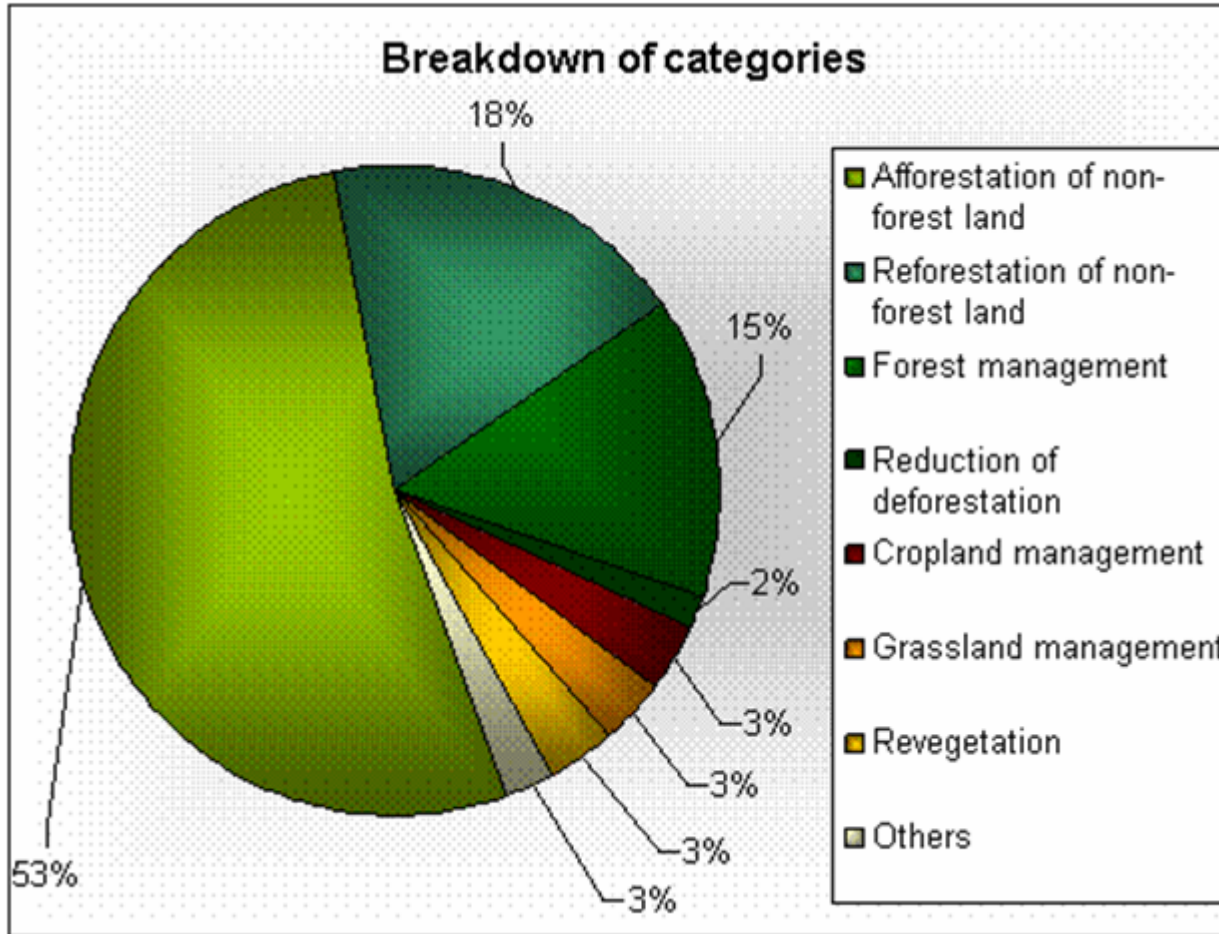
Kyoto was made by governments, for governments, so ...

- ❑ a national implementation strategy is needed
- ❑ should take into account KP incentives

Forest management



Implementation experience



Database by

- Country
- Type of incentive
- Subsidies
- Special loans, price guarantees etc.
- Carbon credits
- Others

Incentives for the implementation of agriculture and forestry activities under the Kyoto Protocol (I. Urstöger and B. Schlamadinger)

Will LULUCF “play” in carbon markets?

- Currently mainly in non-ratifying countries
 - Australia
 - US
 - (Canada)
- Switzerland thinking about it
- EU ETS excludes LULUCF

RESEARCH ARTICLE

Can the EU emission trading scheme support CDM forestry?

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Received 20 April 2005; received in revised form 22 June 2005; accepted 22 June 2005

- Ways of addressing permanence and liability
- If nothing else, swapping could be used
- EU position is barrier to future ETS linking

CDM: A/R methodologies so far

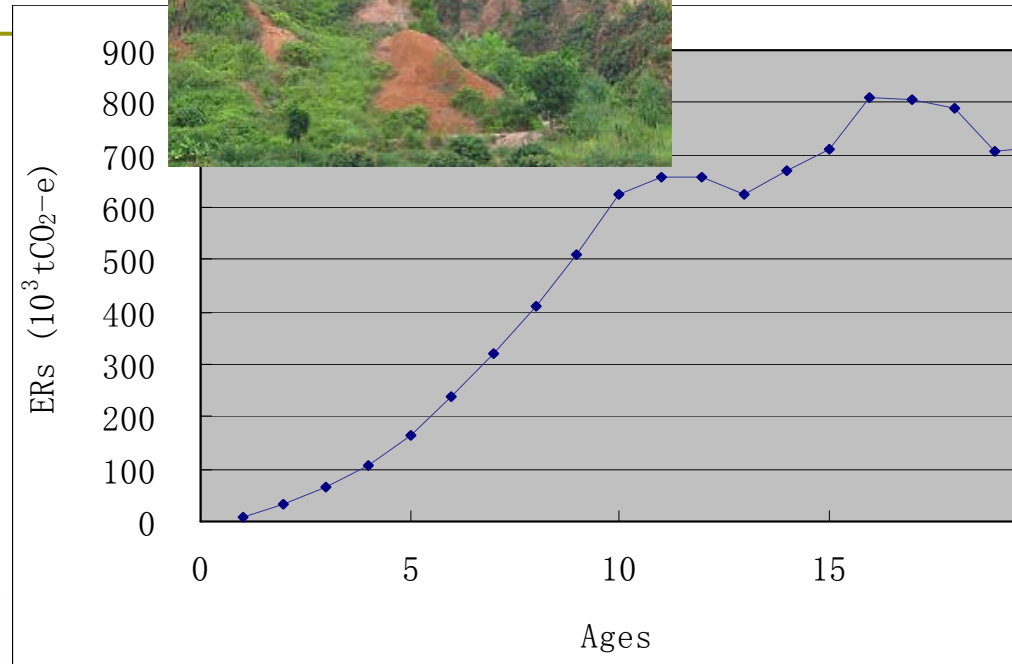
- ❑ Started with delay (COP9 decisions)
- ❑ 16 submitted full-scale methodologies
 - 3 x A (China, Moldova, Albania)
 - 3 x B
 - 10 x C
- ❑ 1 AR small scale methodology
- ❑ 1 project passed validation (Guangxi / China)

CDM AR Methodology

ARAM0001

Reforestation of degraded land

Approved November 2005
Pearl River Basin Reforestation
4000 ha
300 000 t CO₂ by 2012



LULUCF was ...

- ❑ A component that introduced significant uncertainty to the negotiations
- ❑ “Grease that helped to keep the process moving”
- ❑ Most frequently overlooked linkage:
LULUCF \leftrightarrow Bioenergy
- ❑ Next time negotiate rules first, then targets

AFOLU rules in CP2 or other future regime will influence ...

- ❑ Involvement by current non-Parties
- ❑ Involvement by key developing countries
- ❑ Many Least Developed Countries' access to CDM



AFOLU

- AFOLU volume builds from experience:
 - ✓ Using “Revised IPCC 1996 Guidelines” for nearly 10 years
 - ✓ Developments in GPG 2000 and GPG 2003
- Combines all land uses in a comprehensive structure
- Updates, expands and improves the methods
- Improved default emissions factors
- Reduces uncertainty and improves consistency and cost-effectiveness of inventories



UNEP

PRINCIPAL IMPROVEMENTS OVER 1996 GL

- Integration of Agriculture (Ch 4) and LUCF (Ch 5) of IPCC 1996 GL
- Land use category-based approach that includes all managed land
- Adoption of 6 land use categories
 - ✓ Forestland, cropland, grassland, wetland, settlements and 'other land'



WMO



Forestland





Croplands



Grasslands





UNEP



WMO

2006 GL Guidelines includes:

- CO₂ emissions/removals from C-stock changes (biomass, DOM and soil pools)
 - CO₂ & non-CO₂ emissions from fire in all managed land
 - N₂O emissions from all managed land
 - CO₂ emissions from liming
 - CH₄ from rice cultivation
 - CH₄ & N₂O from manure management
 - C stock changes associated with HWP
-

LULUCF in a Post 2012 Climate Agreement

Graz / Austria 5-6 May 2005



Four working groups:

1. Redesign of the current system
2. New options
 - All lands (FCA)
 - Average carbon stocks
3. Compensated reduction and other ways to address Deforestation
4. De-Linking of LULUCF; Policies and Measures

Climate objectives

- ❑ Protect reservoirs and reduce sources
- ❑ Enhance reservoirs, including wood products
- ❑ Substitute biomass products and fuels for other materials and energy sources
- ❑ Adapt to climate change

Necessary features of negotiated agreement

- ❑ Promote participation by countries
- ❑ Completeness over time and space
- ❑ Incentives for improvements within countries
- ❑ Practicality

Option 1: redesign of current system

- ❑ AR: unchanged (since 1990 or other base year)
- ❑ Deforestation: net-net accounting
- ❑ Degrading activities: mandatory; Aggrading activities: voluntary
- ❑ FM voluntary; benchmark based on country specific choice, e.g. based on models. Benchmark subject to upfront international review
- ❑ *Degrading* FM activities: mandatory
- ❑ “Time out” for lands subject to natural disasters (but no accounting of regrowth)

Degree of linkage between sectoral commitments

100%



0%

	Totally Linked	Partially Linked	Completely Delinked
Emission-oriented (Quantitative)	Single emission-oriented, (quantitative) commitment within a single framework	Multiple, partially linked emission-oriented (quantitative) commitments within single or multiple frameworks	Multiple, de-linked emission-oriented (quantitative) commitments within multiple frameworks
	Integrated emission-oriented and cause-oriented commitments within a single framework	Multiple, partially linked emission-oriented and cause-oriented within single or multiple frameworks	Multiple, de-linked emission-oriented and cause-oriented commitments within multiple frameworks
Cause-oriented (quantitative or PAM)	Single cause-oriented, non-quantified commitment within a single framework	Multiple, partially linked cause-oriented, commitments within a single or multiple frameworks	Multiple, de-linked cause-oriented commitments within multiple frameworks



Journal Special Issue: Environmental Science and Policy

- 5 papers from workshop
- Paper on “factoring out”
- Paper on “Interaction with other MEAs”
- 1-2 additional papers
- peer review finished by June 06
- papers available for SBSTA workshop in August 06, in press by September

Factoring out indirect and natural effects on stock changes

- T / P changes
- CO₂, N Fertilization
- Interannual variability
- Not an issue for ARD, CM, GM
- FM: solved through negotiated cap
- Removes incentives
- Other options (this paper):
 - Science based approaches
 - Accounting based approaches

Reducing Emissions from Deforestation in Developing Countries

A workshop to discuss methodological and policy issues

Bad Blumau / Austria

10-12 May 2006



www.joanneum.at/REDD

Organized and Co-funded by



➤ 80 participants

➤ 28 countries



Rationale and Objectives

- COP11 mandate

Reducing emissions from deforestation in developing countries: approaches to stimulate action

- 2 year process
- 31 March submissions
- SBSTA workshop later this year

- Elaborate policy and methodological approaches for reducing emissions from deforestation

- Informal discussions of 31 March submissions

- New ideas to feed into SBSTA discussions

- Brainstorm about possible paths in next 2 years

Concerns leading to exclusion to date

- Targets were negotiated first, then mechanisms
- Scale
- Uncertainties
- Baselines
- Leakage
- Permanence

What has changed since

- Recognition that CO2 stabilization not possible without addressing DD
- Recognition of key emissions source; new inventories available
- GPG 2003, IPCC 2006 GL, CDM AR Methodologies
- Sectoral CDM discussed
- Post 2012: chance to discuss targets and mechanisms in an integrated way
- Initiative by developing countries
- Political will

Key issues emerging from day 1 (presentations)

- Need to learn from past experience
- Deforestation often cannot be tackled without looking at degradation
- REDD could be blueprint for sectoral “no lose targets”
- May initially focus on long-hanging fruit
- Voluntary, flexible, step-wise approach
- Policy decisions will affect meth and tech aspects of implementation

Working Groups

1. Trends, Causes and Counter-measures at National Level

Ewald Rametsteiner, IIASA; and Margaret Skutsch, University of Twente



2. Methodological and technical issues

Daniel Murdiyarso, CIFOR, and Ken Andrasko, US Environmental Protection Agency



3. International Implementation

Tracy Johns, Union of Concerned Scientists and Claudio Forner, CIFOR

Summary: INSEA worked extensively on science – policy interface

- Workshops / reports for policymakers
- Inform negotiations
(several COP / SBSTA side events)
- Review of national systems (NZ, Japan)
- Helped prepare policy-relevant materials
 - IPCC: AFOLU 2006, AR4
 - EU ETS Linking
 - JISC: presentation on AFOLU
- Implementation studies (Incentives; RV)
- Raising awareness of AFOLU options