Forest Carbon
Possibilities and Impossibilities

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Outline

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  - Measuring
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  - Leakage
- Project Types
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  - Improved Forest Management (IFM)
  - Peatland Management (Peat)
- Status of the Market
  - Compliance Market
    - EU ETS and forestry
    - Future Compliance Market
  - Voluntary Market

Introduction

- Forest assets traditionally undervalued
  - Value given to value of land for alternative uses or value of timber only
- Existence of carbon market allows carbon sequestration or emission reduction potential of forests to be valued
  - Limited to recognized/eligible project types
  - Carbon market focused on “carbon” value only
- Carbon finance forestry projects can deliver additional benefits e.g.
  - Community development (jobs, income)
  - Biodiversity conservation (restoration/protection)
  - Watershed protection
  - Soil stabilization

LULUCF and the regulatory environment

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- For the last decade, LULUCF has been at the margin of the negotiation of the major climate change related regulatory frameworks.
- There is a recognition of the LULUCF sector
  - As large source of GHG emissions (mainly through deforestation)
  - As mitigation opportunity through the uptake of CO2 from the atmosphere (sinks)
- *However* the focus of the Kyoto Protocol as well as the EU ETS is on the reduction of fossil fuel based and industrial emissions, LULUCF is mainly seen as
  - Increasing the flexibility to meet negotiated or assigned targets (pro-sinks)
  - Diverting the attention from the main goals of the regulatory instruments (anti-sinks)

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Post-Kyoto negotiations

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There is a **need** for comprehensive system that rewards

- Decreasing deforestation
- Sustainable forest management
- Restoring forests
- Sustainable production and use of biomass
- Soil carbon management in agriculture

Tools: Reform of the LULUCF CDM. Design of new approaches and mechanisms to include emissions from deforestation and land degradation. Full accounting for land-use emissions.

Differences compared to 1997 when the KP was negotiated:

- Scientific basis more robust
- Political will incl from developing countries to address the problem of GHG emissions from deforestation
- Acknowledgement of the opportunity provided by the carbon market
- Active discussion on various proposals

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Issues

Measuring and Monitoring

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Uncertainties

- There was no agreed methodological basis for measuring and monitoring emission reduction relating to land use projects

Recent Developments

- IPCC's GPG-LULUCF
- 2006 IPCC Guidelines for National Greenhouse Gas Inventories
- Data and analytical methods for monitoring change in land cover using remote sensing and field based techniques (GOFC-Gold report series, FAO, Winrock International)
- Third party validation and verification of measurement and monitoring required in all mandatory schemes

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Additionality

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Uncertainties

- The reforestation activity and hence carbon benefits would have occurred anyway in the 'business-as-usual' scenario

Recent Developments

- Large areas of degraded and deforested lands continue to exist in the tropics and sub-tropics which are not viable to reforest without carbon financing

- UNFCCC Tool on Additionality in A/R CDM Projects:
  - projects require carbon finance for the viability of the project *or*
  - projects required to identify other barriers which would prevent the project activity from taking place

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Leakage

Uncertainties

- The implementation of project will lead to an increase in GHG emissions in another area outside the project boundary

Recent Developments

- Sources of leakage can be identified using a conservative approach that ensures they are not underestimated
- Leakage can be minimized. When it does occur it can be quantified and deducted from a projects carbon balance sheet
- Specific baseline methodologies approved under the CDM to deal with displacement of specific activities e.g cattle grazing, agriculture etc

Permanence

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Uncertainties

- Biological sinks could be reversed and their longevity could not be ensured

Recent Developments

- Loss of carbon benefits are monitored and deducted on carbon balance sheet
- On the ground experience of strategies to reduce and address the risk of loss of permanence e.g. fire breaks, pest control, community initiatives
- The risk of loss from a natural event in a managed forest is small – averaging 0.04% of loss per year (Hancock)
- Non permanence has been addressed for CDM A/R projects by means of temporary crediting
- Insurance (eg AIG) and reserve buffers (eg CCX) can be established to cope with unforeseen loss in carbon stocks

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Project Types

CDM Afforestation/Reforestation (A/R) Projects

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- In practice no real difference between Afforestation and Reforestation
- HC definition of “forest” must be met
- Project start after 2000
- Land deforested on 31 Dec 1989
- Crediting Period: 20 years renewable twice (total 60 years), or 30 years (not renewable), retroactive crediting allowed
- “Permanence risk” (i.e. loss of forest): Dealt with by creating “tCERs” and “lCERs” that need to be constantly re-issued or re-verified

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A/R under Voluntary Carbon Standard

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- No need to meet definition of “forest”
- There is no 1989 date similar to CDM
  - Need to demonstrate that forest not cleared to get VCS credits and that previous forest cleared at least 10 years prior to project start date
- Additionality test is more flexible than the CDM
- Crediting period is 20 – 100 years
- Permanence risk addressed using “buffer approach”

VCS buffer approach

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- Applicable to all VCS forest projects
- Permanence risk is assessed by two validators using a number of “risk factors”
- Based on project’s risks a % of credits are set aside in a buffer account
- Future verification is optional, but demonstrating permanence over time will “release” some of the credits that have been set aside
- Results in permanent, fully fungible Voluntary Carbon Units being issued for the project

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Reducing Emissions from Deforestation and Degradation (REDD)

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Environmental Problem

- Forests store about 638 gigatonnes (Gt) of carbon
- 50% more carbon than in the atmosphere
- Gross deforestation averages 13m ha/year (net loss 7.3 million ha/year)
- Responsible for 20% - 25% of global CO_2 emissions

Challenges to a Solution

- Scary scale
- Uncertainty: methodological issues, leakage, permanence etc
- Sovereignty issues and country specific circumstances
- Environmental, social and socio-economic effects

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REDD projects

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- Design elements
  - Forest
  - Deforestation (conversion of forest to non-forest)
  - Activity that reduces deforestation
  - Management of permanence and leakage
- Host country endorsement preferable to mitigate political risk
- VCS eligible methodologies currently under development

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REDD: complex krachtenveld

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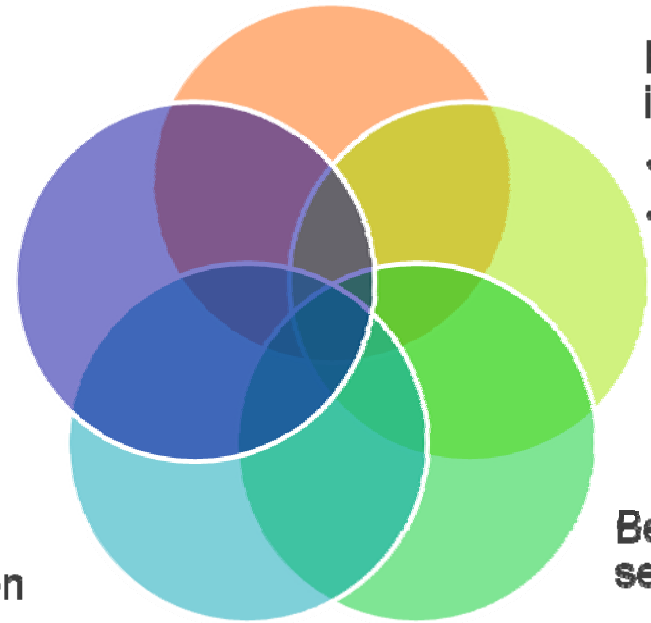
Financiering van bosbehoud;

- emissiehandel of fondsen
- project- of landniveau
- samenhang met ontwikkelingshulp
- rol van multilaterale organisaties

Soevereiniteit tropische boslanden: baas in eigen bos?



Emissiedoelstellingen industrielanden

- hoeveel reductie
- hoeveel compensatie door REDD

Emissiehandel: REDD-credits een vloek of een zegen?

Betrokkenheid van private sector

- uitvoering van projecten
- toegang tot REDD-credits

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Improved Forest Management (IFM) project types

- Improved forest management activities are carried out on forests that remain as forests.
- Project categories:
  - Conversion from conventional logging to reduced impact logging
  - Conversion of logged forests to protected forests:
    - protecting currently logged or degraded forests from further logging; and
    - protecting unlogged forests that would be logged in the absence of carbon finance.
  - Extending the rotation age of evenly aged managed forests

IFM project types

- Project categories continued:
  - Conversion of low-productive forests to productive forests (improving the stocking of poorly stocked forests)
    - introduction of better tree species and/or silvicultural techniques;
    - improved fire management;
    - improved grazing management;
    - improved fuel wood management
- Similar issues of permanence, leakage, additionality of other projects

Example of IFM project

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Before

Few years later

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Status of the Market

Current Compliance Market for Forestry Projects

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- Only 3 CDM forestry projects registered to date
- tCERs and lCERs valued at a fraction of regular CERs
- No demand from EU private sector because not allowed in EU ETS
  - Canada also indicated will not allow international forest credits (but will allow domestic)
- Currently no compliance market for REDD, IFM, Peat lands

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Future Compliance Markets?

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Future domestic trading schemes

- US State
  - RGGI: allows local forestry offsets and does not exclude international (but international credits not defined yet)
  - California: expected to allow local forestry offsets
- US Federal
  - Will dwarf EU market
  - Not expected to pass until 2009 or 2010 at the earliest, coming into affect ~2012 or later
  - Expected to allow domestic and international forestry
    - L-W allowed 10% int. forestry offsets and 5% for all other categories
- US potential
  - Significant potential for IFM, limited A/R and REDD because of land prices

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Future Compliance Markets?

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Future domestic trading schemes cont.

- Australia
  - Federal ETS under development, but NSW trading scheme already has domestic forestry
- New Zealand
  - Federal under development, domestic forestry will be recognized, but int. forestry?
- EU
  - Efforts underway for a number of years to lift ban

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Future Compliance Markets?

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Post-2012 agreement

- REDD may be included in future trading regime
  - Most countries push for inclusion
  - Unclear how it may be included and treated
- Possible revision of CDM A/R?
  - Possible expansion to IFM and other land use related project types
  - Some calls for reform of A/R rules
  - Unclear if these reforms will occur (not much traction yet?)

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Status of the Voluntary Market

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Voluntary Market

- Most forestry projects developed for voluntary market
- Some criticism for bad projects/permanence risks

Transaction Volumes and Values, 2006 and 2007[1]

Markets	Volume ($MtCO_2e$)		Value (US$million)	
	2006	2007	2006	2007
Voluntary OTC Market	14.3	42.1	58.5	258.4
CCX	10.3	22.9	38.3	72.4
Total Voluntary Markets	**24.6**	**65.0**	**96.7**	**330.8**

Source: Ecosystem Marketplace, New Carbon Finance

- Market still small compared to compliance market - risk of market flooding if large volumes of new supply enters the market
- CCX prices and volumes increased significantly in 2008

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Risks and Hurdles

- Lack of project finance
  - Over-estimating revenue
  - Under-estimating costs
- Project too small
- Not conducting legal due diligence
- Lack of technical expertise
- Lack of host country support

Summarising

- Market for forestry carbon still very small, and mostly voluntary
- Post-Kyoto agreement: will give a greater role to forestry, but still unclear how
- Individual project developers: there is more to a forestry project than only having a forest

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