Reducing emissions from deforestation in developing countries under the UNFCCC. A new opportunity for promoting forest conservation?

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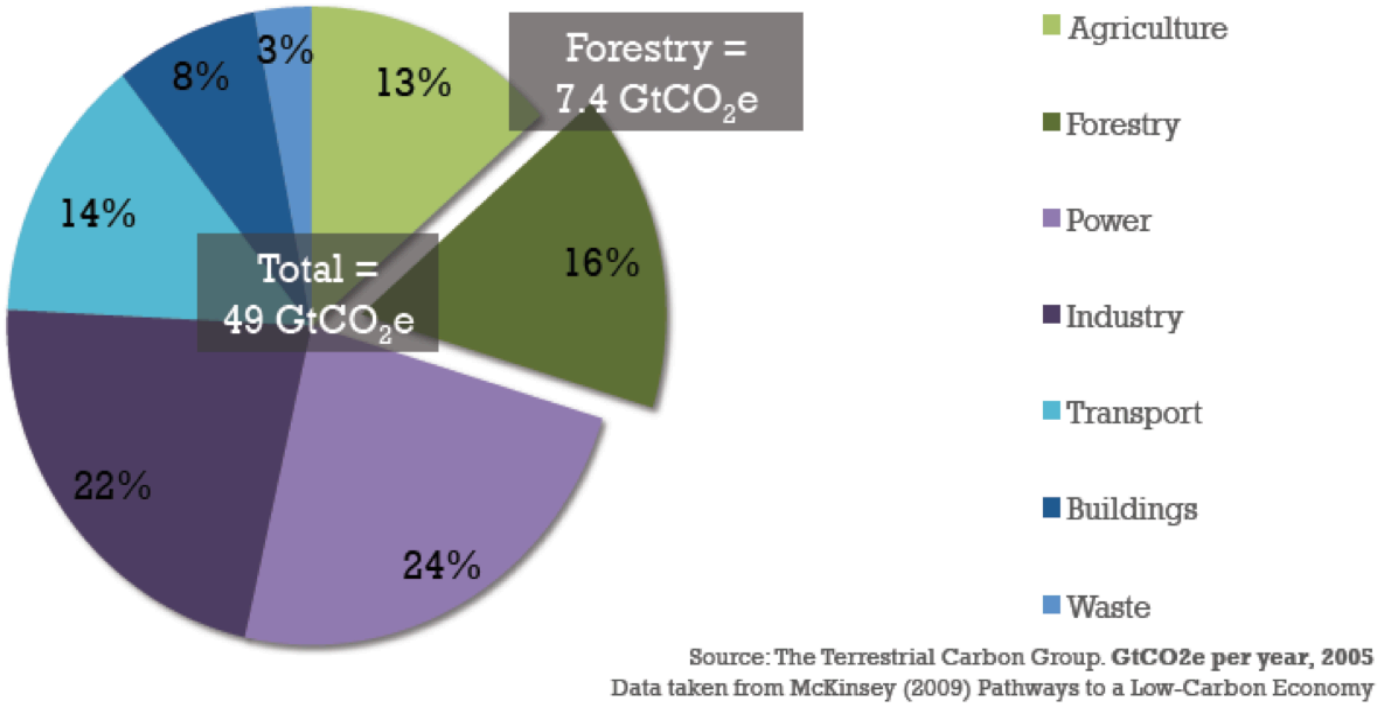
Summary

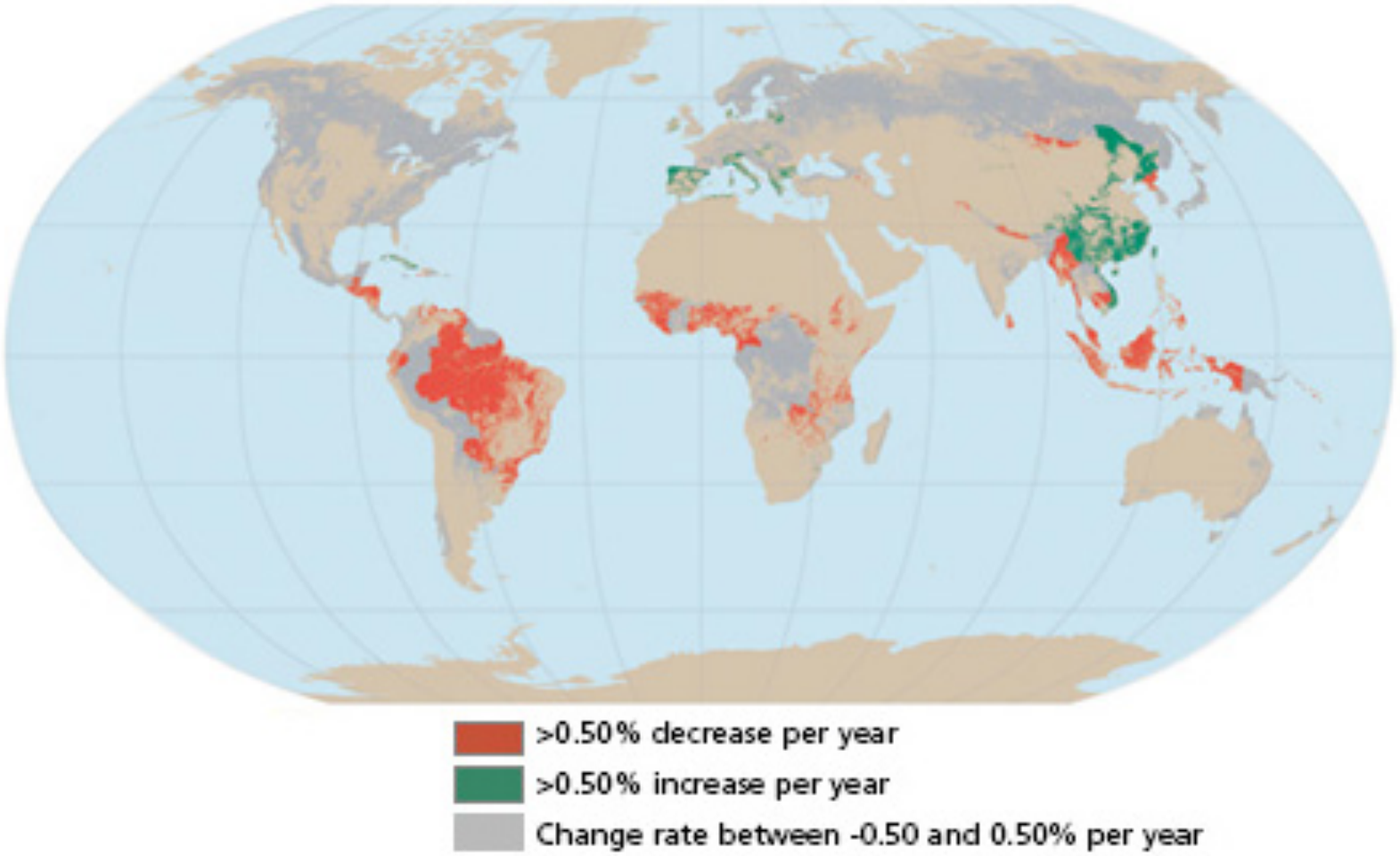
1. Forests, deforestation and climate change
2. Forests and the UNFCCC: the story so far
3. REDD+ design and implications for biodiversity conservation
4. REDD+ as PES
5. Conclusions

Deforestation is a major source of CO2 emissions

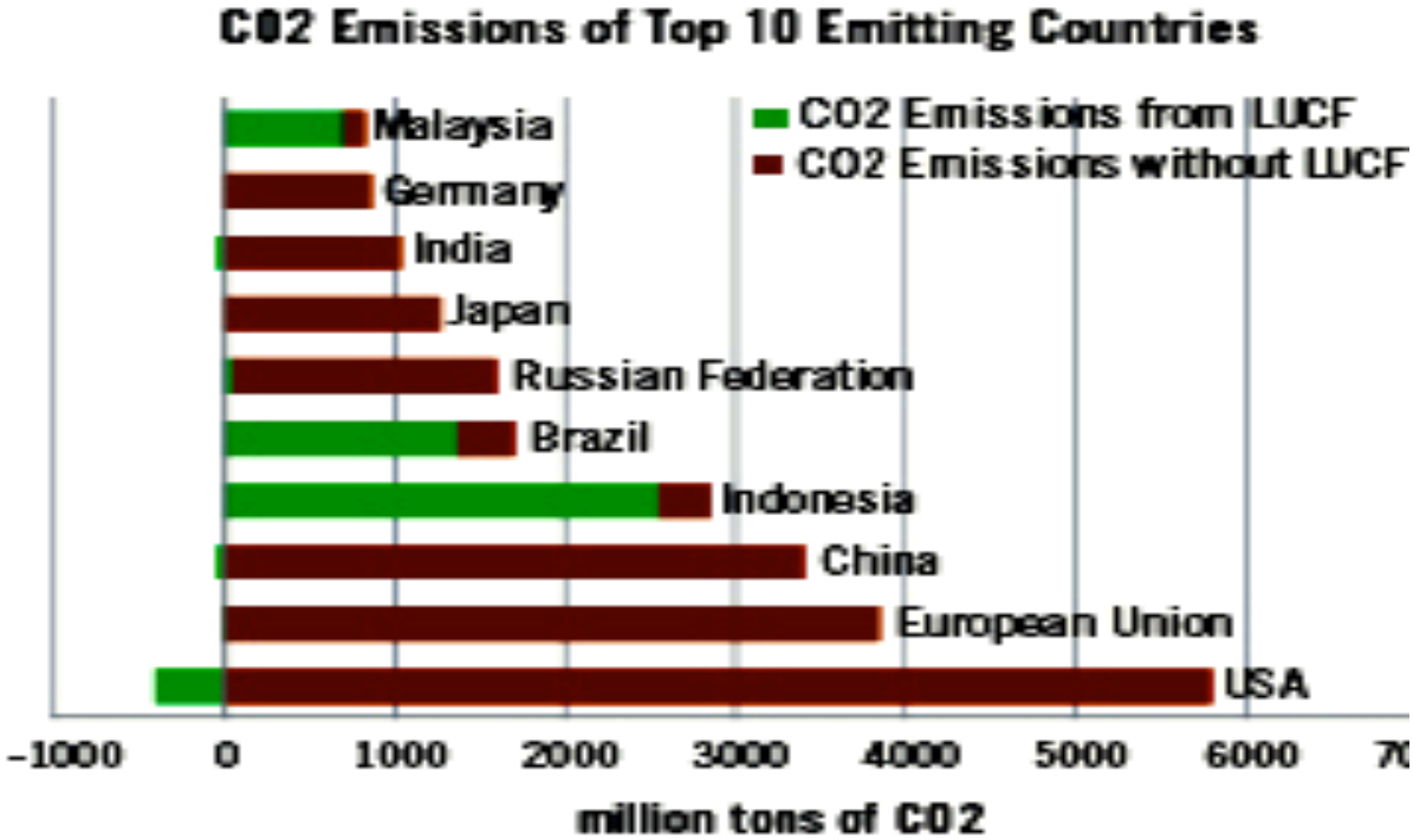


Source: The Terrestrial Carbon Group. **GtCO2e per year, 2005**
Data taken from McKinsey (2009) Pathways to a Low-Carbon Economy

Deforestation is concentrated in the tropics

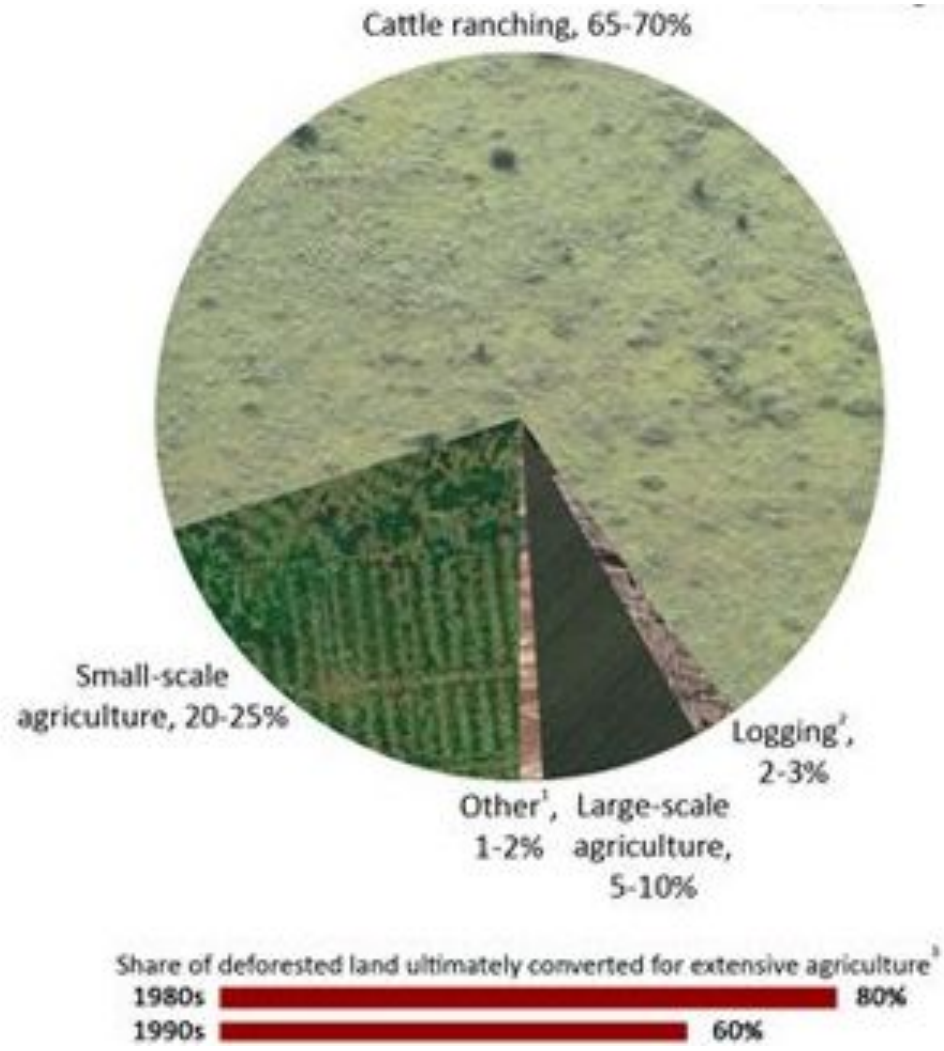


Top 10 Emitting Countries



Source: IIED, 2009

The Drivers of Deforestation in the Amazon 2000-2005



Mongabay, 2009

Deforestation as a market failure

”Deforestation takes place because the **public goods** that forests provide are undervalued in markets.” (Humphrey, 2008)

“The hypothesis that people benefit from the forest, and would conserve it if they controlled it, may not hold when alternative land uses provide higher benefits than forests.” (Tacconi, 2007)

One way of improving the protection of forests is to **remunerate the ecosystem (environmental) services provided by forests**

Costa Rica – Forestry Law 7575 (1996)

- "Forests, forest plantations and other ecosystems offer services essential to the citizens and to economic activities, at the local, national and global levels".
- **Environmental Services Payment Program**: a financial mechanism created to recognize the environmental services provided by forests to the society.
- Economic compensation to land owners to guarantee the conservation and sustainable management of forest resources.

Forests in International Law

- **The Non-Legally Binding Instrument on All Types of Forest** (UNGA, 2007)
- **EU Forest Law Enforcement, Governance and Trade** (FLEGT, initiated in 2003)
- **UN Convention to Combat Desertification** (1996)
- **Convention on Biological Diversity** (1992)

Forests in International Law (2)

- Forests are **natural resources** subject to State's sovereignty
- Some services and benefits forests provide (e.g. climate regulation, carbon storage, biodiversity conservation) may be viewed as **public goods**

Forests as public goods

"*The environmental **services that forests ecosystems provide** to the atmosphere by sequestering and fixing GHG **must be recognized by the international community and valued***"

(Government of Bolivia, submission to the UNFCCC, 2006)

"*Forests are a **planetary asset** and no longer the concern of individual countries*"

(Martin Mabala, Environment Minister, Gabon, 11 March 2010)

Forests and the UNFCCC. The Story so Far

- "*Stabilization of greenhouse-gas concentrations in the atmosphere at a level that would prevent dangerous atmospheric interference with the climate system. Such a level should be achieved* ***within a time frame sufficient to allow*** **ecosystems** ***to adapt naturally to climate change.***" (Art.2)

- Policies and measures to deal with climate change should "*be* ***comprehensive, cover all relevant sources, sinks*** *and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors*" (Art. 3.3)

➢ So far, this mandate has only been partially fulfilled in connection with forests

Forests under the Kyoto Protocol

Article 3.3 KP

The **net changes in greenhouse gas emissions** by sources and removals by sinks resulting **from** direct **human-induced land-use change and forestry activities (LULUCF),** limited to **afforestation, reforestation and deforestation** since 1990, measured as verifiable changes in carbon stocks in each commitment period, **shall be used to meet the commitments under this Article of each Party included in Annex I.**

Forests and the CDM

Reforestation: direct human-induced conversion of non-forested land to forested land through planting, seeding, and/or human-induced promotion of natural seed sources, on land that was forested but that has been converted to non-forested land.

Afforestation: direct human-induced conversion of land that has not been forested for a period of at least 50 years

Afforestation/Reforestation VS Avoided deforestation

- Afforestation and Reforestation sequester carbon and credit generation is based on increases in carbon stocks *(**increased carbon sequestration**)*
- Avoided deforestation is about reducing emissions by cutting deforestation below a certain baseline scenario - a bit like with industrial emissions under the KP (***reduced carbon loss***)

➢ **Presently NOT included in the CDM**

Avoided deforestation and the UNFCCC: The beginnings

In 2005 a group of tropical forest countries (the so-called Rainforest Coalition) suggested to incentivise the reduction of tropical deforestation (REDD) under the UNFCCC, **either by inserting them in the Kyoto Protocol or through an additional Protocol to the UNFCCC**

Rationale for REDD

"Curbing deforestation is a highly **cost-effective way** of reducing greenhouse gas emissions and has the potential to offer significant reductions fairly quickly" (Stern Review, 2006)

➢REDD makes economic sense, as a relatively cheap option to mitigate climate change quickly

"Reduced deforestation and degradation is the forest mitigation option with the **largest and most immediate carbon** stock impact in the short term per ha and per year globally" (IPPC III WG. 2007, 14).

➢REDD is a way of "**buying time**" while measures to reduce emissions in other sectors are being devised.

Rationale for REDD (2)

- "Stabilization of GHG in the atmosphere (…) will be more difficult and costly unless both industrialized and **developing countries actively contribute to emissions reductions**" (PNG and Costa Rica, Submission to the UNFCCC, 2005).

➢ REDD is a way to get developing countries to contribute directly to climate change mitigation– and perhaps even accept caps on their emissions?

➢ But how?

REDD Design Implications for Biodiversity

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Scope of REDD

a) Reducing emissions from deforestation (**RED**);
b) Reducing emissions from forest degradation (**REDD**);
c) Conservation of forest carbon stocks;
d) Sustainable management of forest;
e) Enhancement of forest carbon stocks (**REDD+**)

- REDD+ could benefit countries that are already effectively protecting their forests, and not only the ones that are currently experiencing high deforestation and forest degradation. This would prevent the displacement of emissions from one place to the other (so called leakage)
- The actual scope of these activities depends greatly on their **definition**, and the **definition of forest**

The definition of forest

Marrakesh Accords

"an area of more than 0.5–1.0 ha with a minimum "tree" crown cover of 10–30%, with "tree" defined as a plant with the capability of growing to be more than 2–5 m tall."

- encompasses **major variations in forest types and conditions**, with considerable differences in species composition, ecology, biodiversity value and safety in carbon storage

➢fails to distinguish between natural forests and **plantations**

➢Definition elaborated for the purposes of **carbon accounting**

Definition of forest and REDD+

If REDD+ used the definition of forest outlined in the Marrakesh Accords , a wide range of forest contexts may fall within REDD+

- *primary forests*
- *modified natural forests*
- *plantation forests*
- *non-forest land uses*

(Harvey et al., 2010)

Activities that may fall within REDD+

- **Reduced Deforestation**

  i.e. "*direct human-induced conversion of forested land to non-forested land*" (MA)

- **Reduced Forest Degradation**

  i.e. "*direct human-induced long-term loss of at least Y per cent of forest carbon stocks since time (T) and not qualifying as deforestation*" (IPCC)

Activities that may fall within REDD+ (2)

- **Sustainable Forest Management**
  i.e., "a system of practices for stewardship and use of forest land aimed at fulfilling relevant ecological (including biological diversity), economic and social functions of the forest in a sustainable manner." (MA)
- **Conservation of Forest Carbon Stocks**
  i.e. protected areas?
- **Enhancement of Existing Forest Carbon Stocks**
  i.e. afforestation and reforestation?

Potential impact on biodiversity of REDD+ activities

- ***Reduced Deforestation***
- ***Reduced Forest Degradation***
- ***Conservation of Forest Carbon Stocks***

- no harm to biodiversity, at a minimum, and may provide substantial ecological co benefits.
- **HOWEVER**, they may induce a shift in agricultural and pasture expansion from forests to low-biomass native ecosystems, potentially with severe damage to biodiversity

Potential impact on biodiversity (2)

- ***Enhance existing forest carbon stocks***
- ➢ Afforestation and reforestation may lead to the replacement of native ecosystems by monocultural tree plantations
- ➢ The REDD+ mechanism should require a balanced appraisal of tree plantations to discern their benefits and ecological costs
- ***Sustainable Forest Management***
- ➢ potential degradation of intact primary forests
- ➢ sustainable forest management activities **should not affect primary forests** and should instead target areas already subject to intensive land use

Biodiversity safeguards for REDD+

Countries participating in REDD+

- should be **prohibited from clearing native vegetation or 'high conservation value' terrestrial ecosystems** for agricultural expansion or for the establishment of plantation forests
- should be **obliged to keep track of conversions** of intact forest to non forest land uses
- could be required to **demonstrate that measures to protect areas of high biodiversity have been undertaken**

Biodiversity safeguards so far

REDD+ demonstration activities

"*should be consistent with **sustainable forest management**, noting, inter alia, the relevant provisions of the United Nations Forum on Forests, the United Nations Convention to Combat Desertification and the Convention on Biological Diversity*." 2/COP13

"*complement or be consistent with the objectives of **national forest programmes and relevant international conventions and agreements***." draft decision 4/COP15

Negotiating Text

Chapter 6, 2(e)

(..) when undertaking activities referred to in paragraph 3 below, the following safeguards should be [promoted and supported] [ensured]:

[Actions that are consistent with the conservation of natural forests and biological diversity, ensuring that actions referred to in paragraph 3 below ***are not used for the conversion of natural forests [into plantations****, as monoculture plantations are not forest], but are instead used to* ***incentivize the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits****;]*

REDD and PES

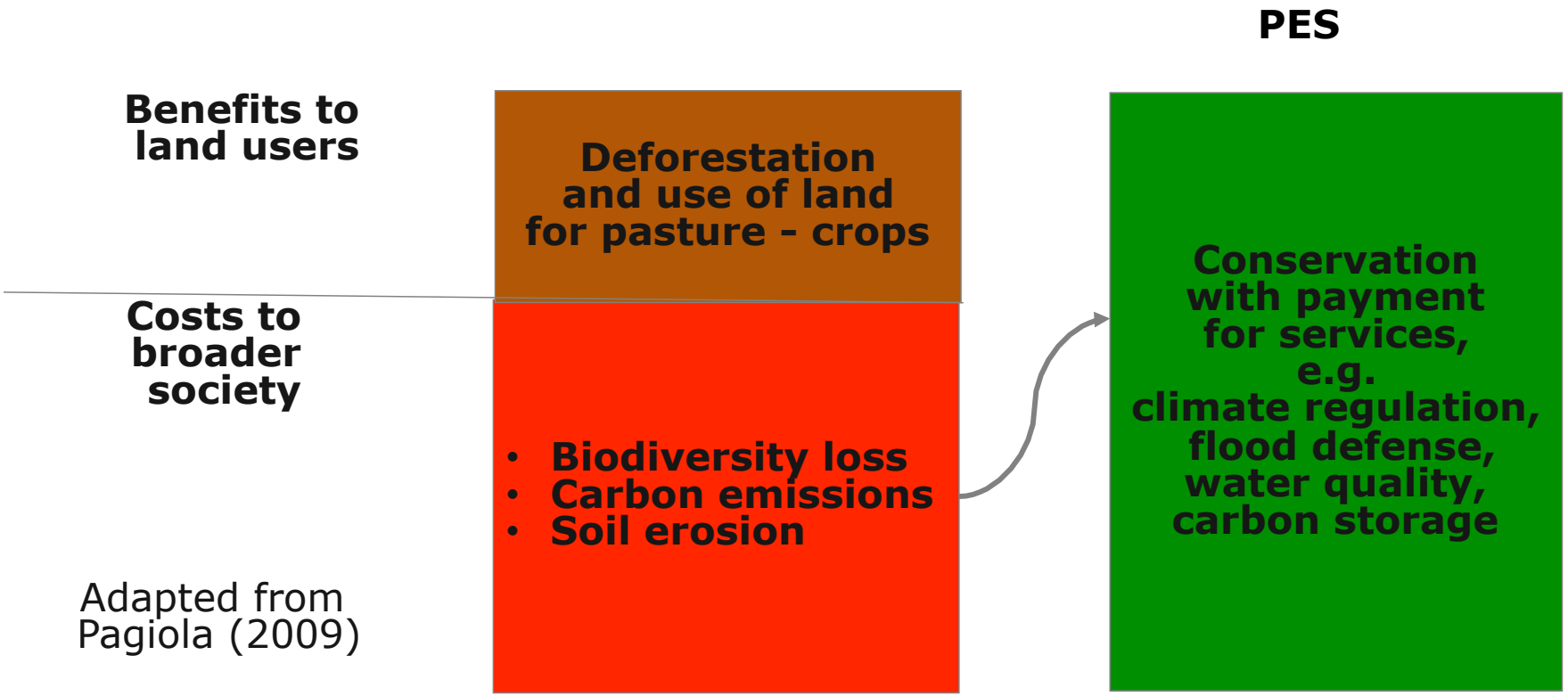
- Reducing biodiversity loss in forests requires particular efforts from biodiversity-rich developing countries, many of which cannot afford the investments required

➢ Principle of *common but differentiated responsibilities* (CBD, UNFCCC): **developed countries should provide funding for undertaking biodiversity conservation and climate change mitigation endeavours**

➢ REDD+ as opportunity for establishing an international system for the payment of the ecosystem services provided by tropical forests?

Payments for Ecosystem Services (PES)

Payments for ecosystem services, i.e., "*benefits people obtain from ecosystems*"



Adapted from Pagiola (2009)

REDD+ as PES. The advantages

- REDD+ could provide funding for the **conservation of tropical forests** far greater than existing international conservation funding

- Funding would be **performance-based** and only accrue to Parties that demonstrate their success in maintaining forests

REDD+ as PES. The challenges

- **Not all PES protect or conserve biodiversity**. A focus on maximising the provision of just one service (e.g. carbon storage) may have negative impacts on the provision of other ecosystem services

➢ While REDD+ may bring about positive gains for tropical forest and biodiversity conservation, the extent of these gains will depend on its *design and implementation.*

Defining REDD+ Ecological Integrity

- **Definition of forest and REDD activities**
- **Baselines,** i.e. selecting reference levels against which to measure increases/decreases in emissions AND biodiversity co benefits.
- **Leakage** i.e. how to prevent the displacement of deforestation and biodiversity loss from an area credited for avoiding deforestation to another place or time.
- **Additionality**, i.e. ensuring that REDD+ activities result in emissions reductions beyond business-as-usual, and also that they generate additional funding for forest conservation.
- **Monitoring and Verifiability** i.e. establishing internationally agreed methodologies to monitor and verify emission reductions and their biodiversity co benefits

CCBA Social and Environmental Standards

Climate, Community and Biodiversity Alliance (CCBA)

- the REDD+ program "*maintains and enhances biodiversity and ecosystem services*"
- ecosystem services potentially affected by the REDD + program must be "*identified, prioritized and mapped*"
- the program must be aimed at "*making a significant contribution to maintaining and enhancing biodiversity and ecosystem services*"
- the program "*does not lead to the conversion of natural forests or other areas that important for maintaining and enhancing the identified biodiversity and ecosystem service priorities*"

Ensuring REDD+ Co benefits for biodiversity

- In forest landscapes **subject to ongoing clearing and forest degradation**, climate change mitigation and biodiversity conservation can be achieved by **reducing deforestation and forest degradation and improving forest management**.
- In forest landscapes that **currently experience little deforestation** or forest degradation, the **conservation of existing primary forests** is critical both for protecting carbon stocks and for conserving biodiversity.
- In forest landscapes **that have already been largely cleared and degraded**, climate change mitigation and biodiversity conservation can be achieved by **enhancing carbon stocks through restoration and improved forest management.**

Caveats

- Forest carbon sequestration may lead to **perverse biodiversity outcomes**, so it is crucial to integrate biodiversity safeguards in REDD+
- So far, this issue has not been fully addressed by Parties and ambiguities remain
- Risk of a *de minimis* agreement at COP16?
- Adding biodiversity concerns to this already **troubled negotiating process** may further impede swift action to ensure forest carbon sequestration
- The overall impact of REDD+ will depend on the extent to which **agricultural needs** can be met outside of the tropical forest frontier.

Conclusions

- REDD+ is **no panacea** for biodiversity loss
- REDD+ needs to be assisted by **clear safeguards** to avoid potential negative effects on biodiversity
- The potential rewards from getting it right stretch beyond emission reductions and include the **conservation** of some of the world's richest forest ecosystems.

Figure 11.3 ENVIRONMENTAL ISSUES look different to people and governments in the rich and in the poor nations. (Cartoon by Scott Willis of the *San Jose Mercury News*.)

Thank you!

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