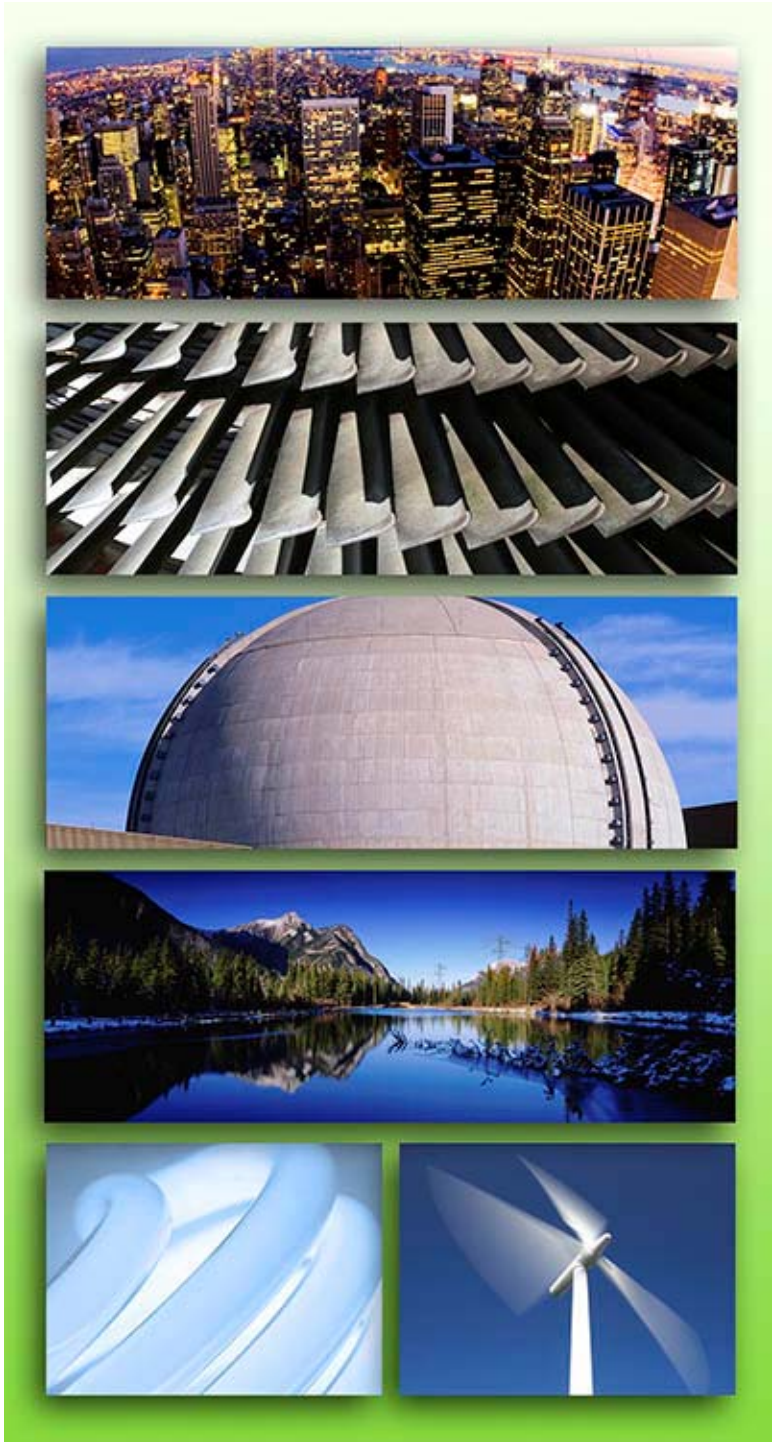

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Overview of Reduced Emissions from Deforestation and Degradation (REDD)

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Today's Topics

- Definition of REDD
- Role of REDD in global climate change
- Technical issues
  - Developing country institutional capacity / governance
  - Appropriate baselines
  - Measurement, monitoring and verification (MM&V)
  - National versus sub-national programs

What are RED, REDD and REDD+?

- RED = Reducing Emissions from **Deforestation**
- REDD = "…" **Deforestation** and (forest) **Degradation**
- REDD+ = "…" **Deforestation,** (forest) **Degradation +** other **forest carbon stock changes**
  - Deforestation is the *conversion of forest land to another land use*, such that there is a *long-term reduction of forest cover to below a 10% canopy* cover threshold.
  - Forest degradation refers to "…changes within the forest which *negatively affect the structure or function of the stand or site*, and thereby lower the capacity to supply products and/or services… [It] takes the form of *large canopy gaps, fragmentation, active fire, and burned area, [and] is often caused by selective logging operations*, which usually do not reduce canopy cover to as great an extent as full land conversion."

Notes: Definitions by CIFOR and FAO.

Key Role of LULUCF in Global Climate Change

- LULUCF is the 2nd largest source of annual global CO_2 emissions after fossil fuel consumption.[1]
  - Annual fossil CO_2 emissions = 26.4 $GtCO_2$ (2000-2005)
  - Annual LULUCF CO_2 emissions = 5.8 $GtCO_2$ (since 1990)
- LULUCF accounts for ~20% of annual global CO_2 emissions!
- FAO estimates global deforestation at 13 million ha/yr (1990-2005)[2].
  - Brazil accounted for ~50% of global deforestation in the humid tropics 2000-05
  - Amazonian deforestation accounted for ~60% of the total 2000-05

Notes: 1. IPPC 2008, AR4, Working Group 1.
2. FAO, Global Forests Resource Assessment 2005.

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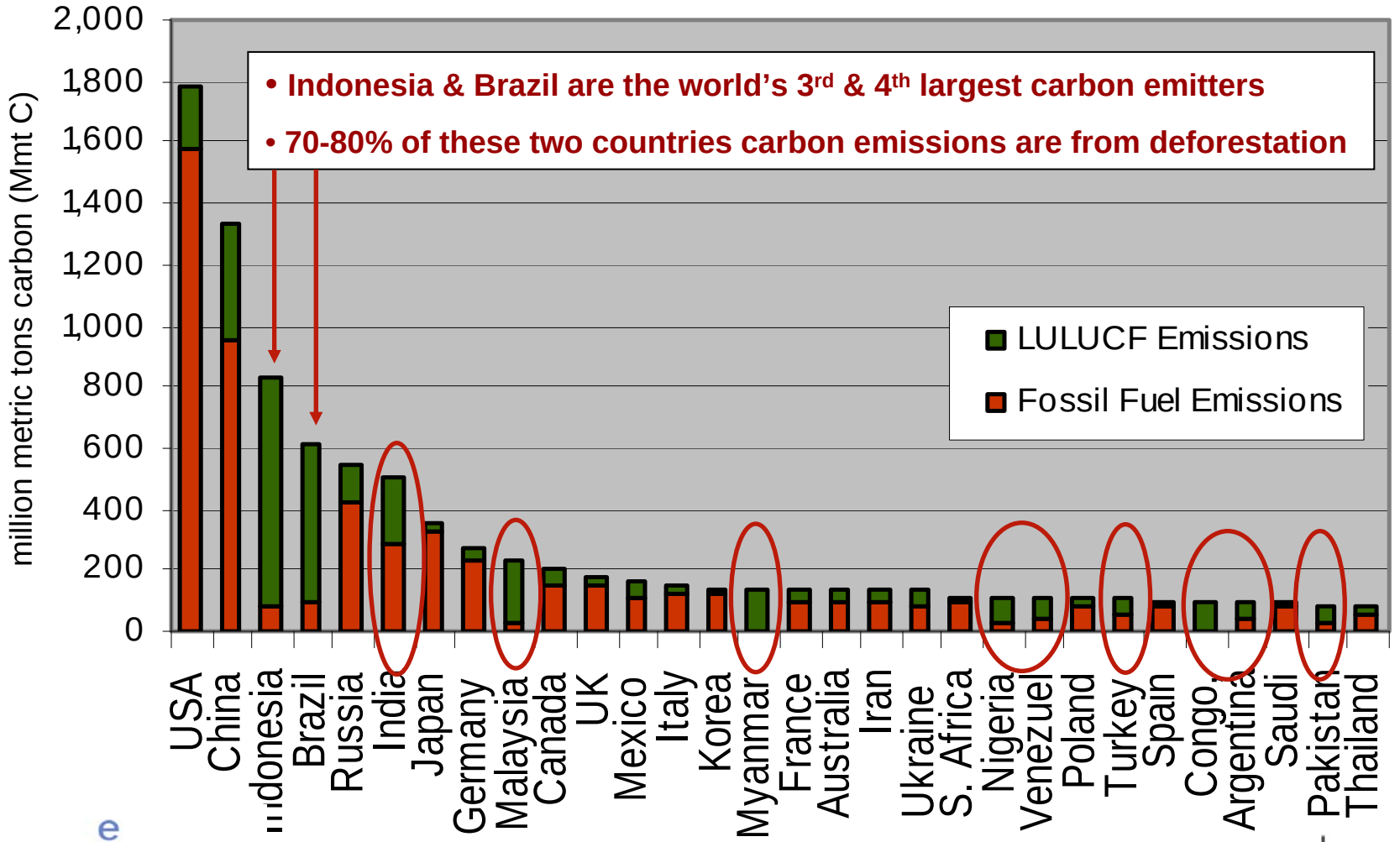
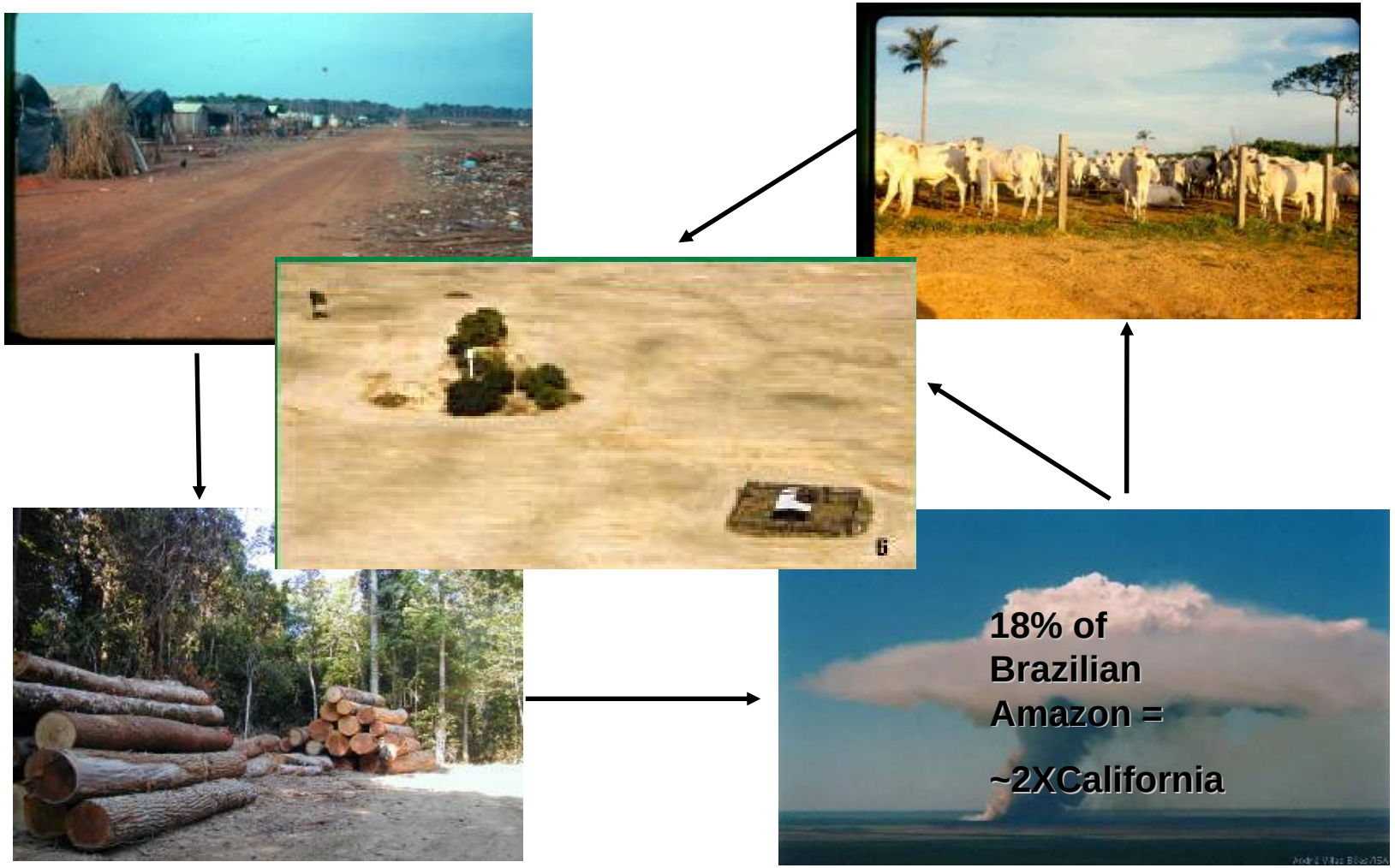
Carbon Emissions of Top 30 Countries in 2000



Drivers of Deforestation – Many Activities are Worth More Money Today Than Living Forest



Developing Countries Need Institutional Capacity & Effective Governance for REDD

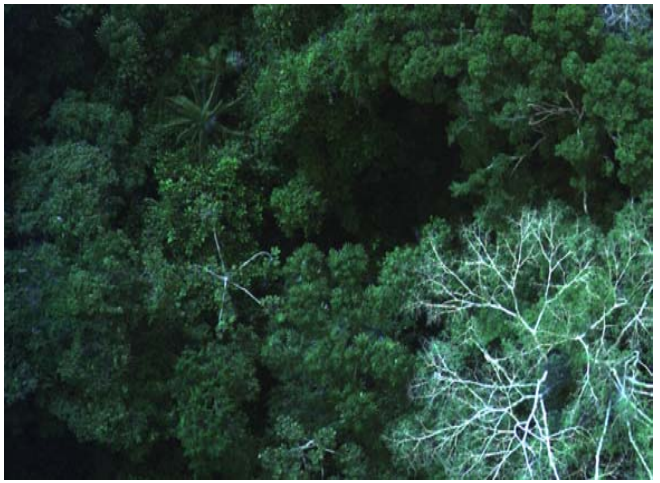
- Government stability
- Rule of law
- Enforcement capability
- Effective control of corruption
- Recognition and respect for private property rights
- Measurement, monitoring and verification
- Respect and inclusion of indigenous peoples

REDD Baselines

- Defining an appropriate baseline for deforestation rates and associated GHG emissions for countries participating in a REDD crediting mechanism is a fundamental challenge for creating REDD-based GHG offsets.
- There are several approaches to REDD baselines:
  - Historical average deforestation rates (e.g., last 5 years)
  - Stock / average emission baselines
  - Future Projections
    - *Model-based projections* which takes into account the drivers of deforestation and present and future responses under BAU
    - "*Economically rational*"' deforestation baseline
  - Policies designed to reduce or stop deforestation in a defined period of time (e.g., National Deforestation Emissions Baseline in the WM Discussion Draft)

Measurement, Monitoring & Verification (MMV)

- Many parties believe it is difficult – if not impossible – to accurately conduct MM&V to evaluate current rates of deforestation and potential future efforts to reduce deforestation.



- Two key issues:
  1. Can deforestation rates and avoided deforestation be accurately be measured and monitored?
  2. Can we use MM&V techniques to accurately measure GHG emissions from deforestation and REDD?
- What are the key technologies for doing REDD MM&V?
  - Remote sensing / satellite imagery
  - Aerial techniques
  - On-the-ground approaches

Emissions "Leakage"

- Efforts targeted to reduce [GHG] emissions in one place simply shift emissions to another location or sector where they remain *uncontrolled or uncounted*.[1]
  - For REDD, leakage can occur on a sub-national basis or across international borders
  - Recent modeling[2] demonstrates that climate policies that credit *only afforestation projects* (domestic and international) to generate GHG emission offsets, rather than afforestation, forest management and avoided deforestation, are likely to lead to increased deforestation in developing nations.

Notes:
1. Based on definition by Brian Murray, Nicholas Institute, EPRI Offsets Workshop 4, 2/19/09.
2. S. Rose and B. Sohngen, "Climate Policy Design and Forest Carbon Sequestration," working paper, April, 2009.

National v. Sub-national REDD Programs

- Key Question: Should REDD be conducted on a "national" or "sub-national" basis?
  - How can private capital be harnessed under a national program to fund REDD-based projects?
  - How can these projects generate offsets for use by compliance parties in a U.S. GHG cap and trade program?
- National – Require nations like Brazil to reduce emissions from deforestation on a national basis against a nationally established baseline.
- Sub-national – Allow sub-national activities and projects to be implemented that reduce deforestation and GHG emissions.

Key Insights

- LULUCF accounts for ~20% of global GHG emissions annually
  - It will be difficult to stabilize atmospheric levels of GHGs in the near term without substantially reducing global deforestation
  - Brazil and Indonesia are the world's 3rd and 4th largest annual GHG emitters if LULUCF emission are included
- Key technical challenges may make it difficult to achieve large-scale REDD in the near term:
  - Lack of developing country institutional capacity / governance
  - Baselines
  - Measurement, monitoring and verification
  - Leakage

Thank You

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