Mitigation Potential and Costs
Land-Use Options

Daniel Martino

(Carbosur, Uruguay)

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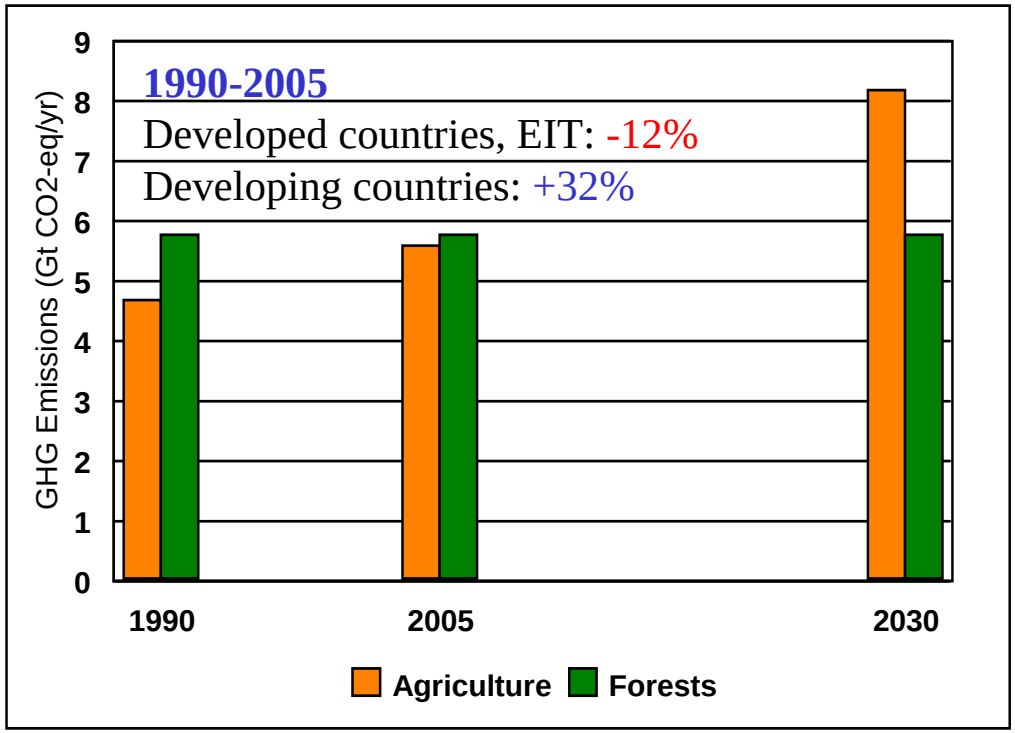
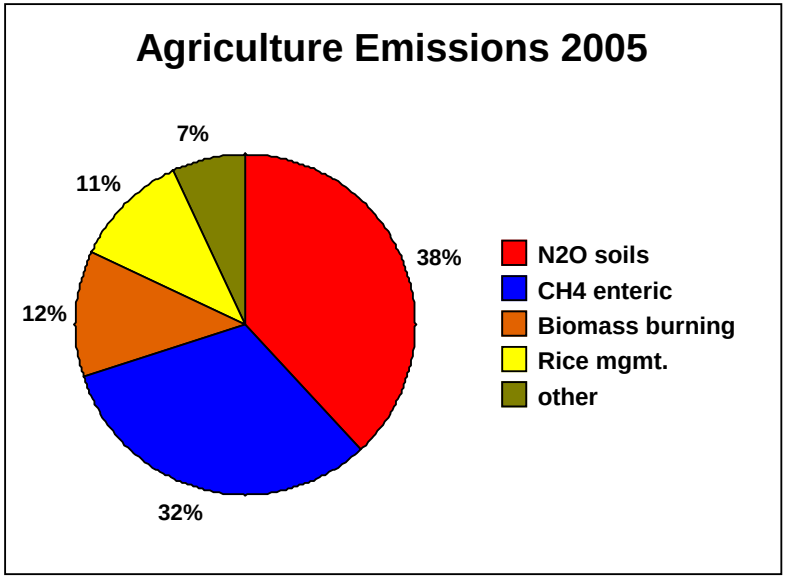
Baseline emissions



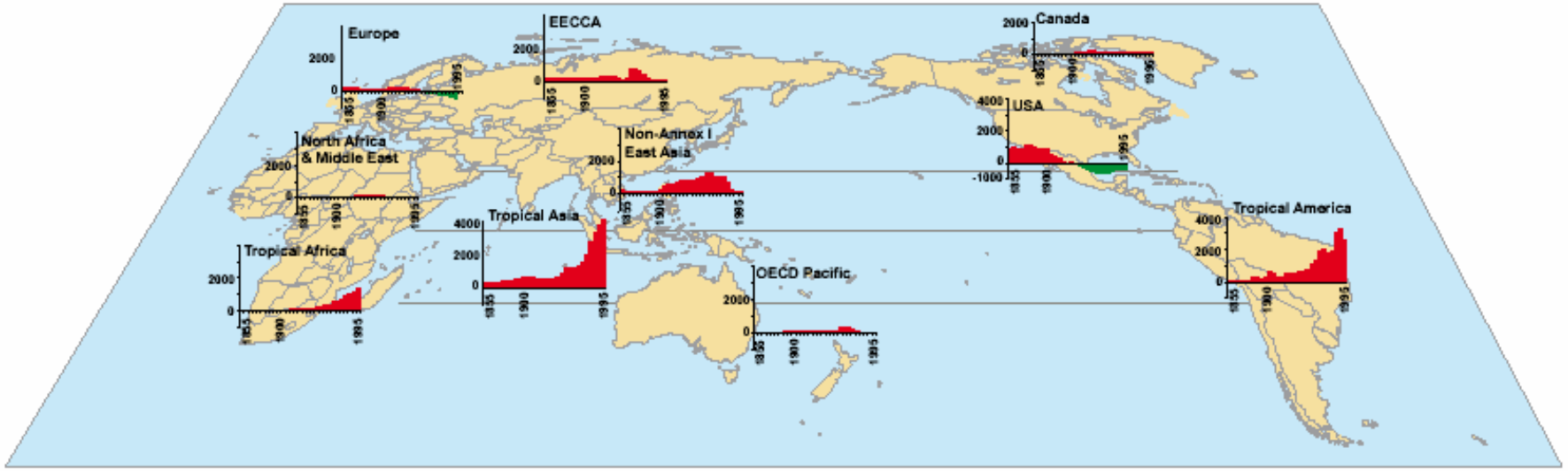


Forest and agriculture sinks not included in graph

Main drivers

- Increase in GHGs: population pressure, income increse, diet changes, technological changes
- Decrease in GHGs: increased land productivity, conservation tillage, non-climate policies (AI), forest sinks (temperate/boreal)

Baseline emissions: Forests



Economic Mitigation Potential

	Economic Potential 2030 ($GtCO_2$-eq/yr)	
Carbon price (US/tCO_2-eq)	**Agriculture**	**Forests**
20	**1.6** (0.3-2.4)	**1.2** (0.5-1.8)
50	**2.7** (1.5-3.9)	**2.1** (0.9-3.2)
100	**4.4** (2.3-6.4)	**2.7** (1.3-4.2)
Emissions 2030	**8.2**	**5.8**

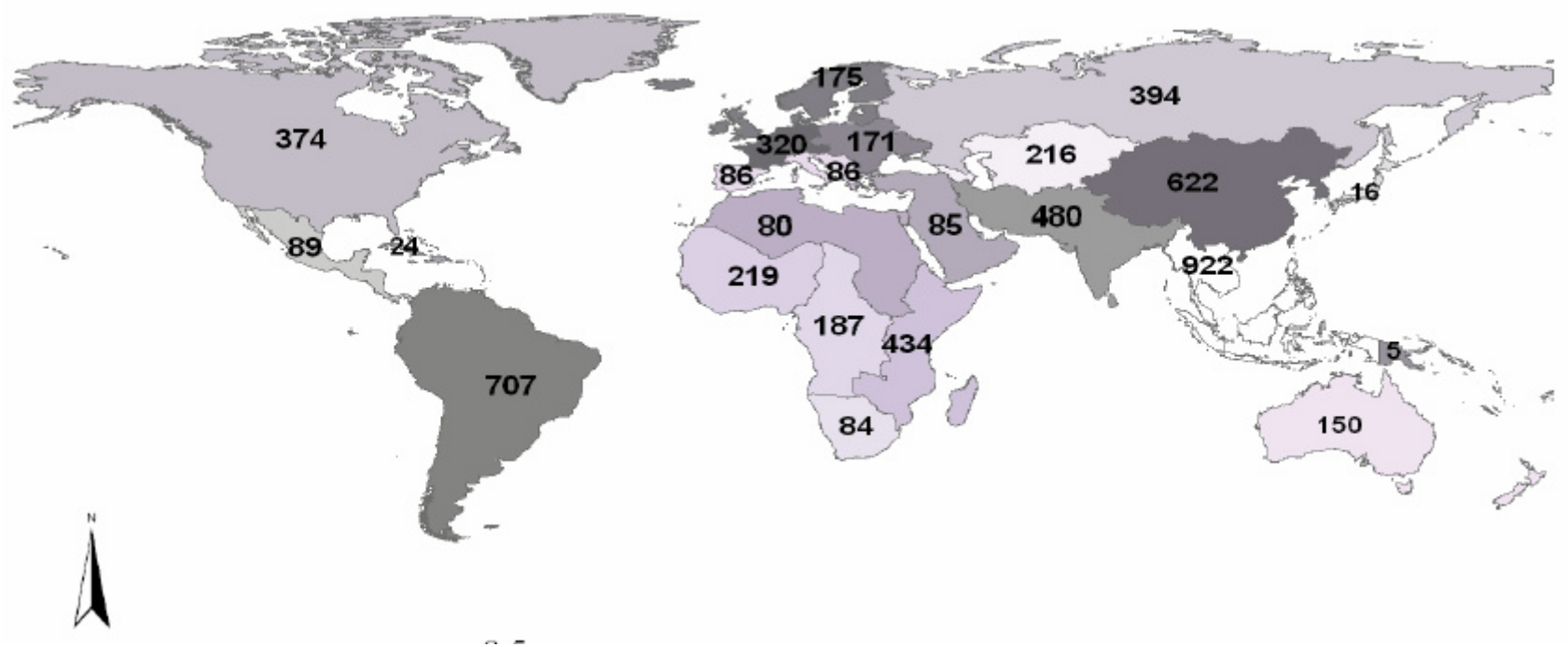
Mitigation practices in Agriculture

Cropland management; Restoration of organic soils; Rice management; Grazing land management – 90% of potential is carbon sequestration

Mitigation practices in Forests

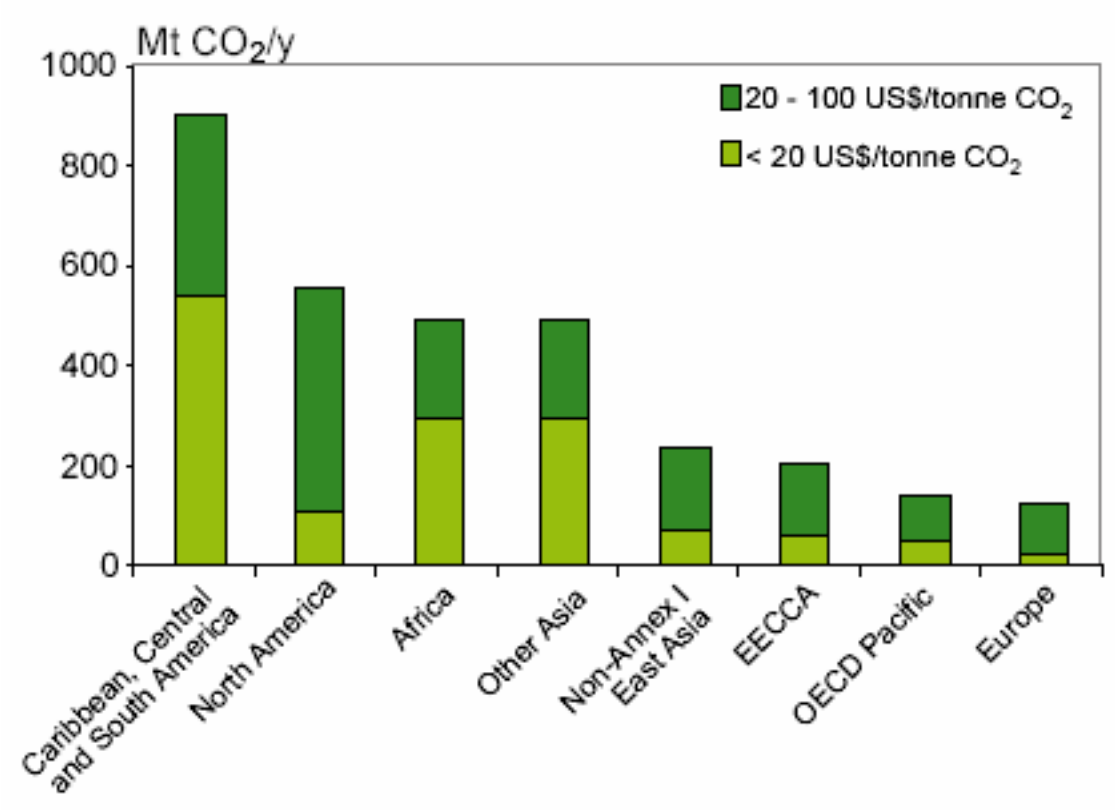
Reduced emissions from deforestation; afforestation; forest management

Agriculture: Regional Distribution of Economic Potential (US$ 100/tCO_2-eq)



70% of potential is in developing regions

Forests: Regional Distribution of Economic Potential (US$ 100/tCO_2-eq)



65% of potential is in developing regions
Developing countries: reduced deforestation 40% of potential
Developed countries, EIT: forest management 63-72% of potential

Biomass as Feedstock for Energy

- Agriculture:
  - Biomass for energy produced in agricultural land may cause indirect emissions reductions of 70-1,260 Mt CO_2-eq./yr (at US$ 20/tCO_2) by 2030.
  - In addition, emissions reductions of 770 Mt CO_2-eq./yr can be achieved through energy efficiency
- Forests:
  - Indirect emissions reductions of 40-4,000 Mt CO_2-eq./yr (at US$ 20/tCO_2) can be achieved by 2030.
  - Increasing stocks of harvested wood products can also contribute (not estimated in the report).

Final Remarks (1)

- Developing regions:
  - where most emissions occur (both in agriculture and forests)
  - where emissions tend to increase (agriculture)
  - where ca. 2/3 of economic mitigation potential can be achieved.
- Developed regions, EIT:
  - agriculture emissions tend to decrease
  - forest sector is a net sink
  - large potential for carbon sequestration through forest management and carbon sequestration in soils in some areas

Final Remarks (2)

- C sequestration represents 90% of potential in agriculture, and 60% in forests
  - high uncertainty of estimates (baseline and potentials)
  - uncertainty on long-term effects (about sink enhancement or reversal due to climate change)
- Agriculture and forests may also contribute to mitigation in energy sector through production of biomass feedstocks and energy efficiency measures
  - Competition with other land uses, positive or negative environmental impacts, implications for food security
- Most mitigation practices in agriculture and forests have synergies with sustainable development and interactions with adaptation.