



Agriculture and Land Use, Land Use Change, and Forestry (LULUCF)

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Outline

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- ❑ Existing Emissions.
- ❑ Abatement Potential & Mitigation Strategies.
- ❑ Barriers.
- ❑ Recommendations.



Defining LULUCF & Agriculture

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- ❑ “A greenhouse gas inventory sector that covers emissions and removals of greenhouse gases resulting from direct human-induced land use, land use change and forestry activities” (UNFCCC 2012).
- ❑ Agriculture involves the cultivation of soil, production of arable crops, and livestock rearing.
- ❑ AFOLU: Agriculture, Forestry, and other Land Use.

Current Emissions



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By the Numbers

Major Sources of Emissions

> 5.94 Gt Agricultural Emissions

> 2.57 Gt Land-Use & Forestry Emissions

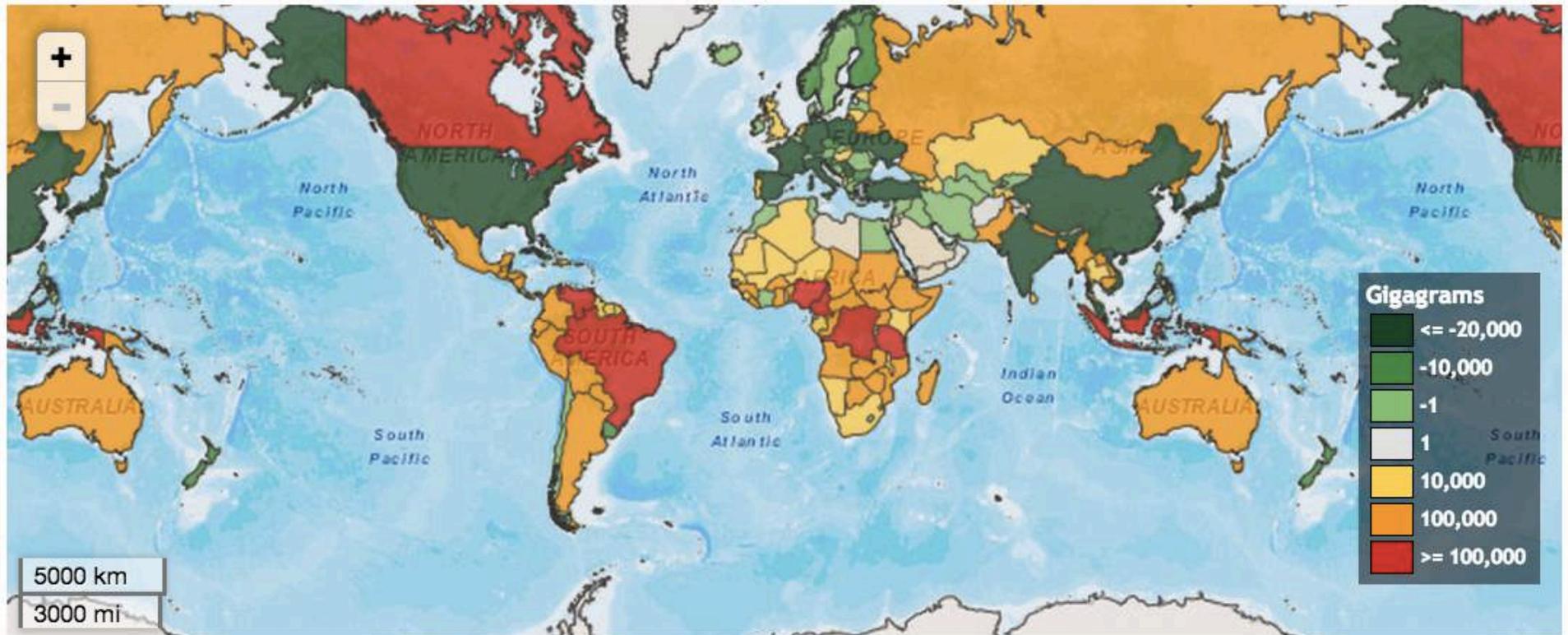
> ~16% Total GHG

Source : CAIT 2009

Deforestation of the rainforest for soybean fields in Brazil

Land-use & Forestry Emissions

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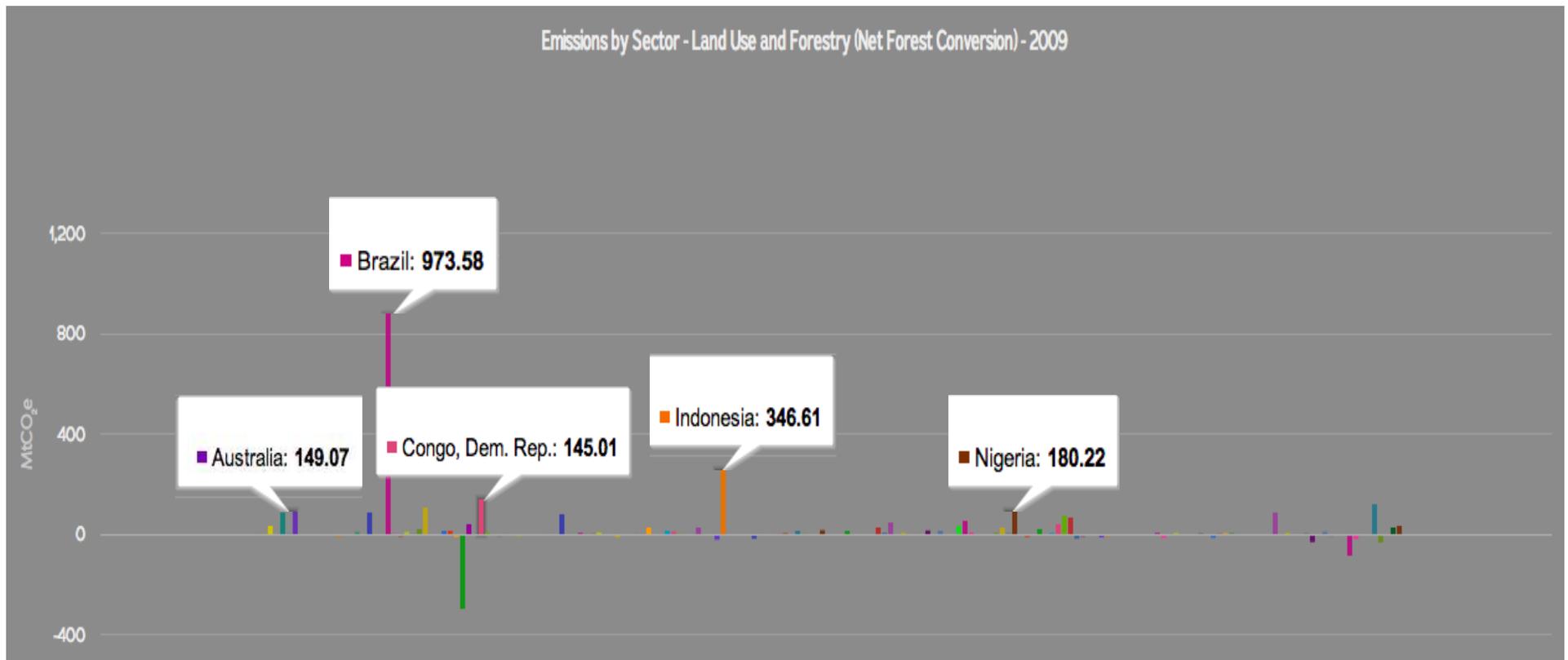


Source: FAO 2011

Land-use & Forestry - Country Level

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Top Five Emitters (as of 2009)

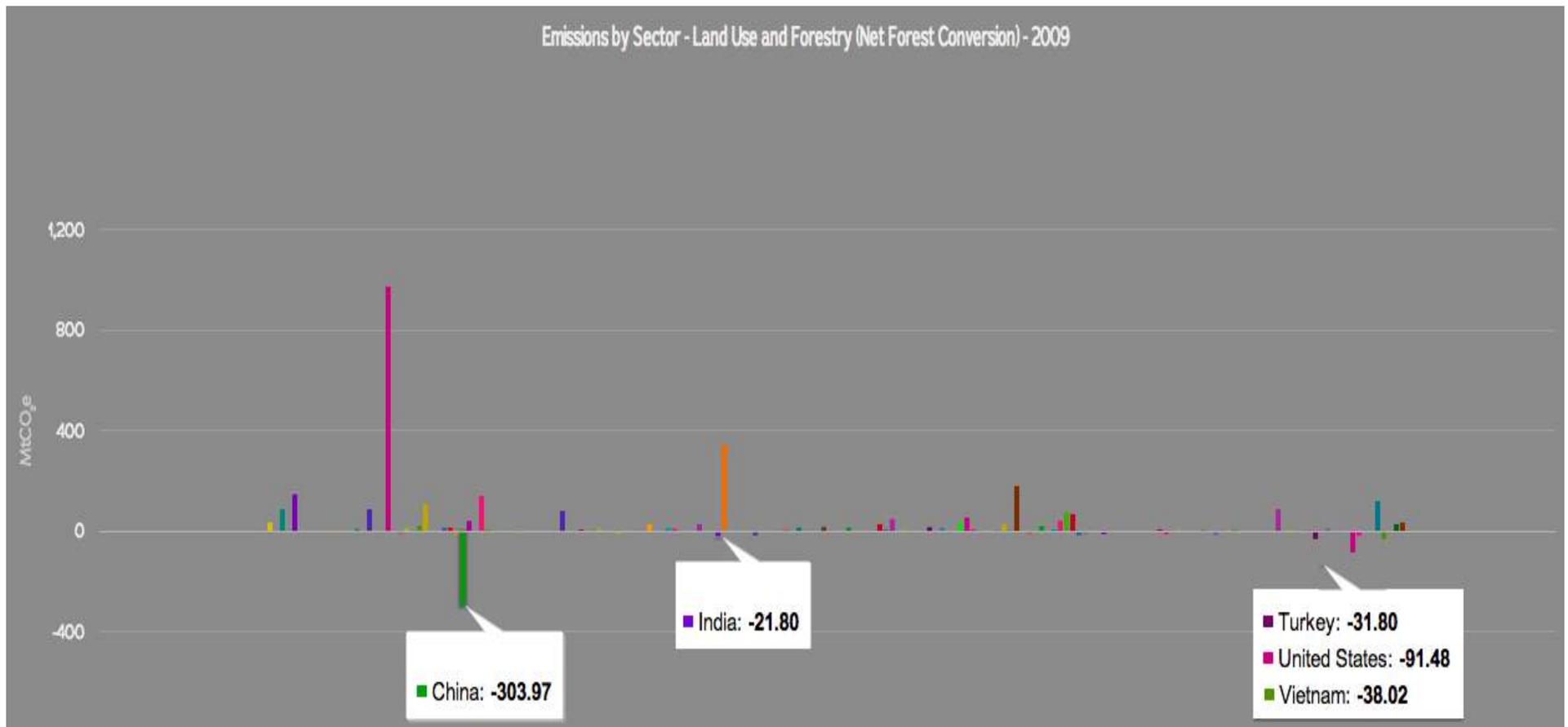


Source: CAIT 2009

Land-use & Forestry - Country Level

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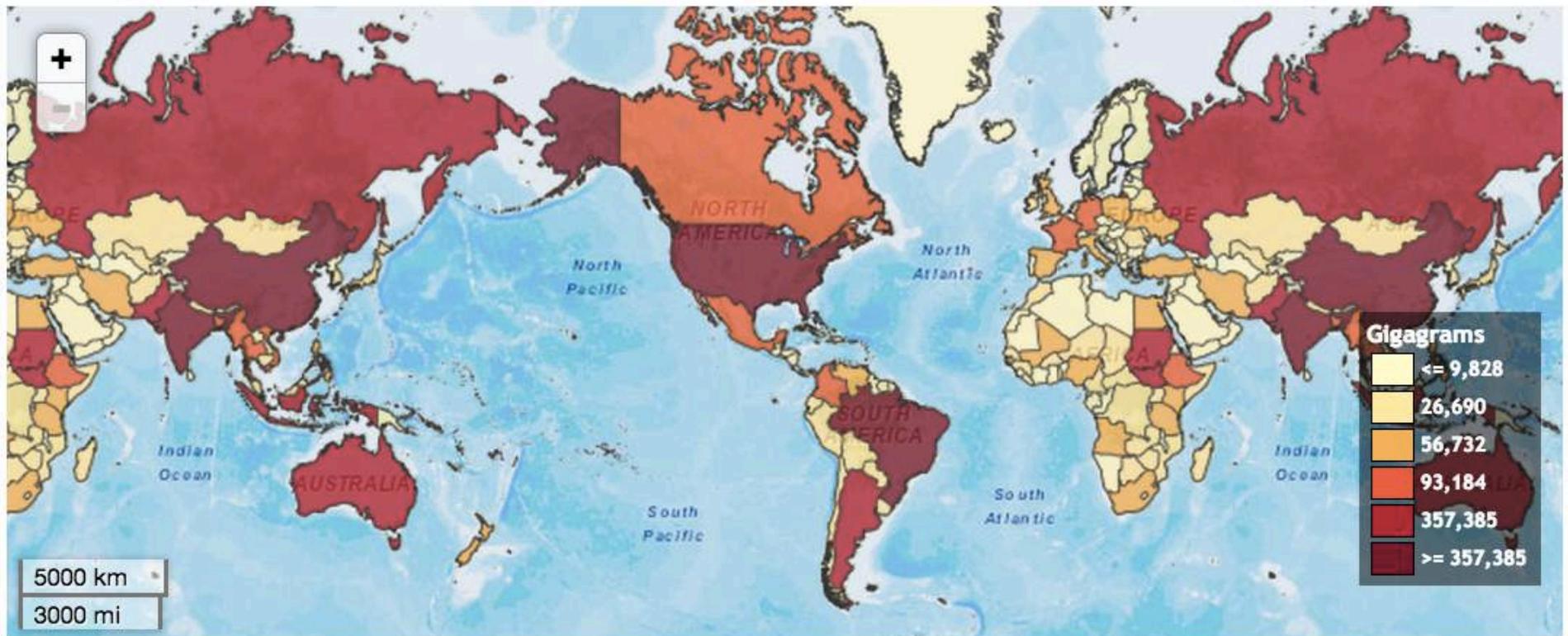
Top Five Sinks (as of 2009)



Source: CAIT 2009

Agricultural Emissions - Country Level

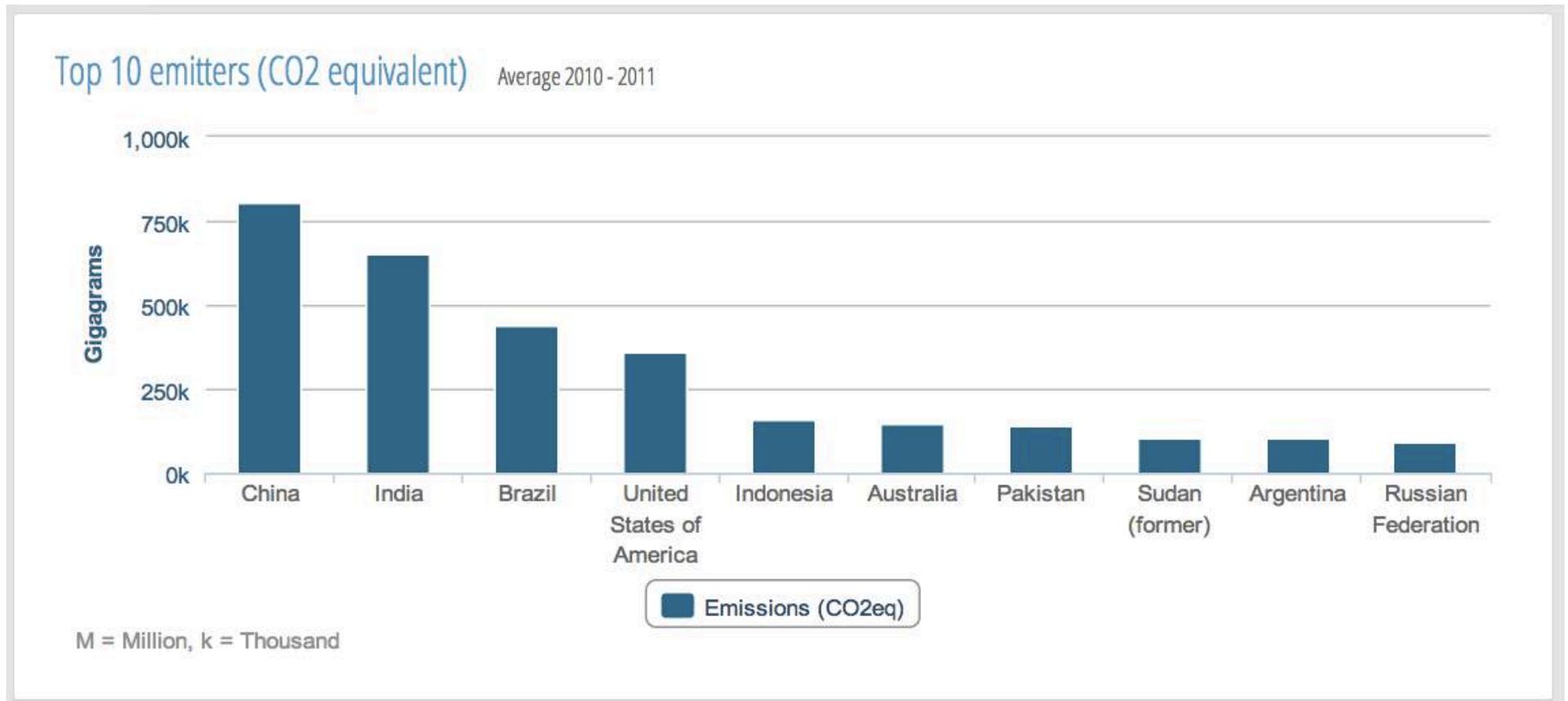
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Source: FAO 2011

Agricultural Emissions - Country Level

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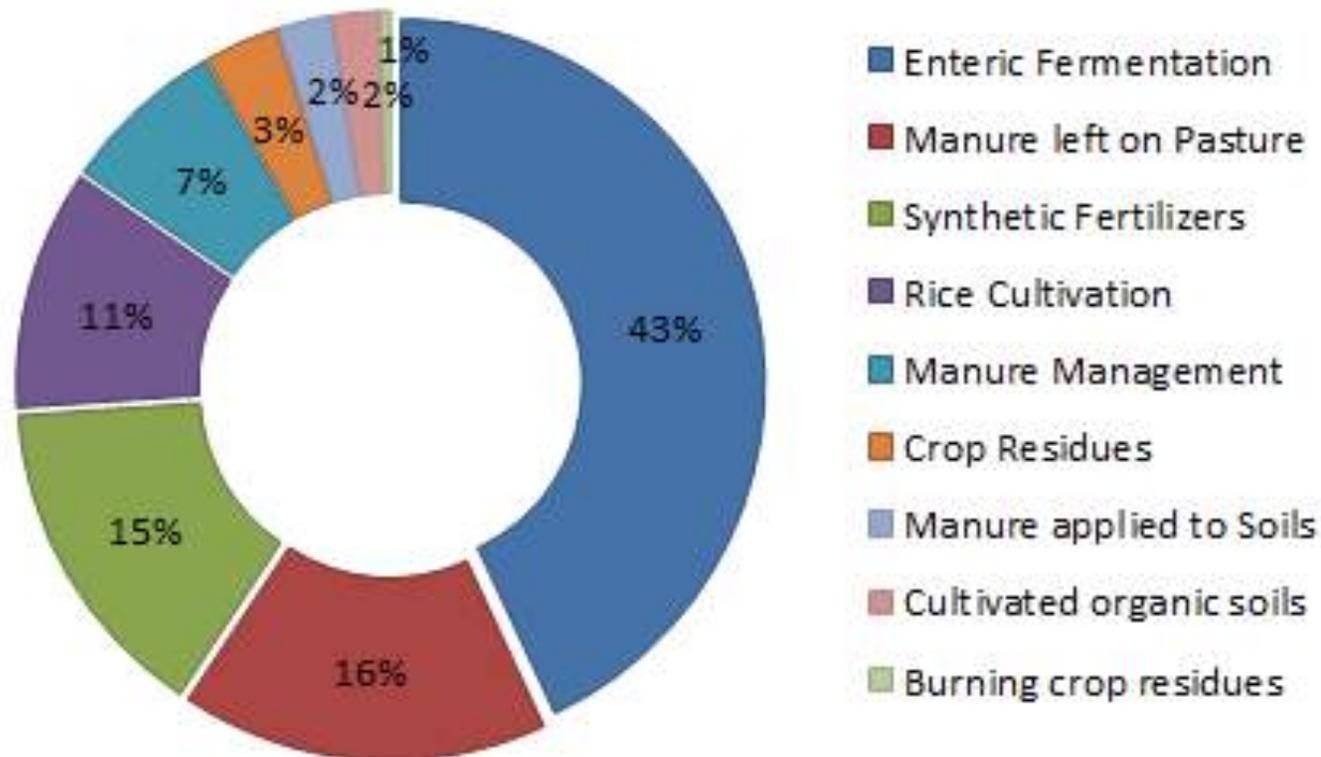


Source: FAO 2011

Agricultural Emissions – Sector Level

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2010 GHG Emissions: Total = 5.94 GtCO₂eq



Source : FAOSTAT

Existing Funding Mechanisms

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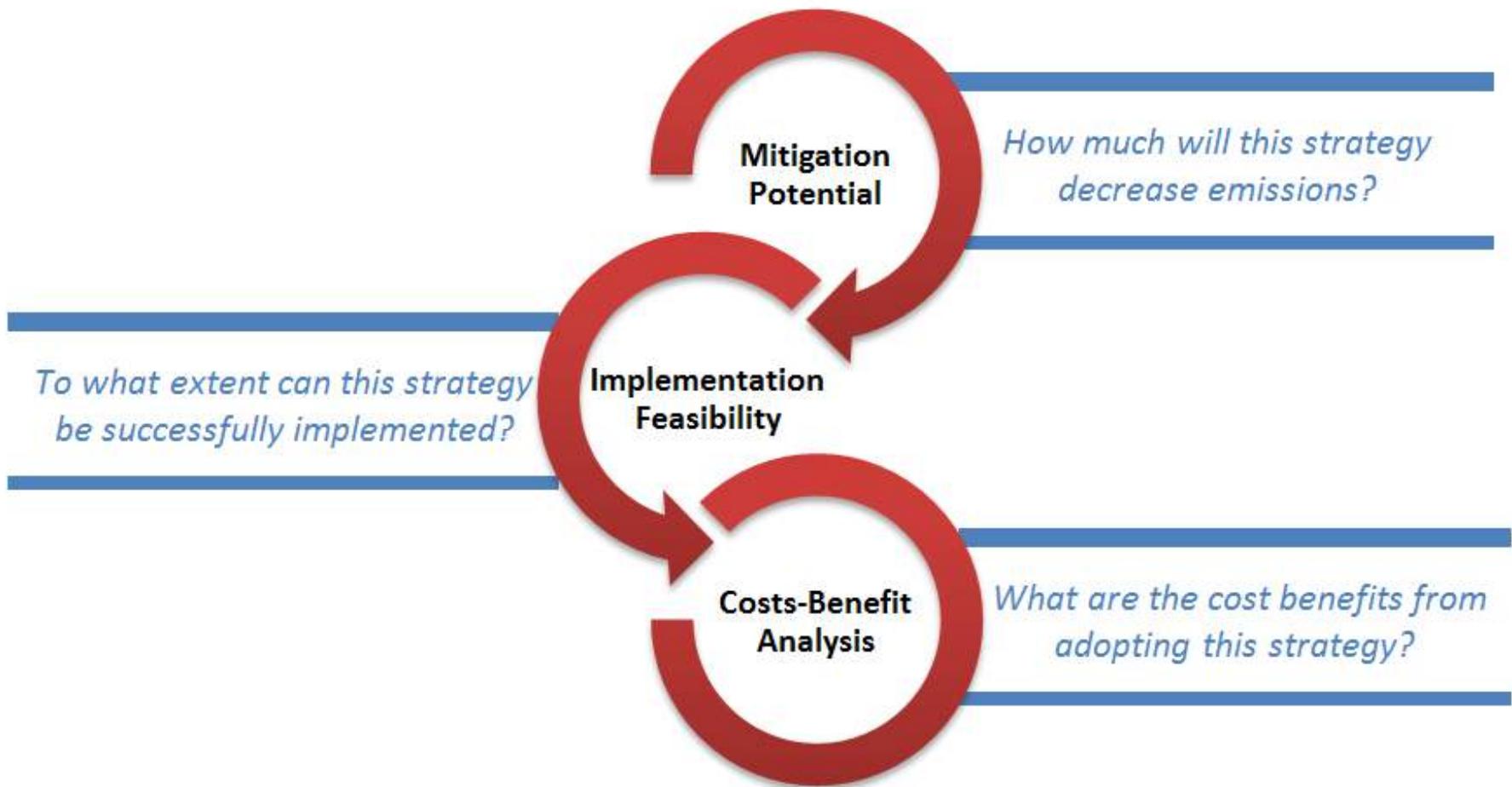
- UN-REDD Programme and REDD+.
- Forest Investment Program (FIP): \$639 million to date.
- Forest Carbon Partnership Facility (FCPF): \$160 million to date.

Abatement Potential & Mitigation Strategies



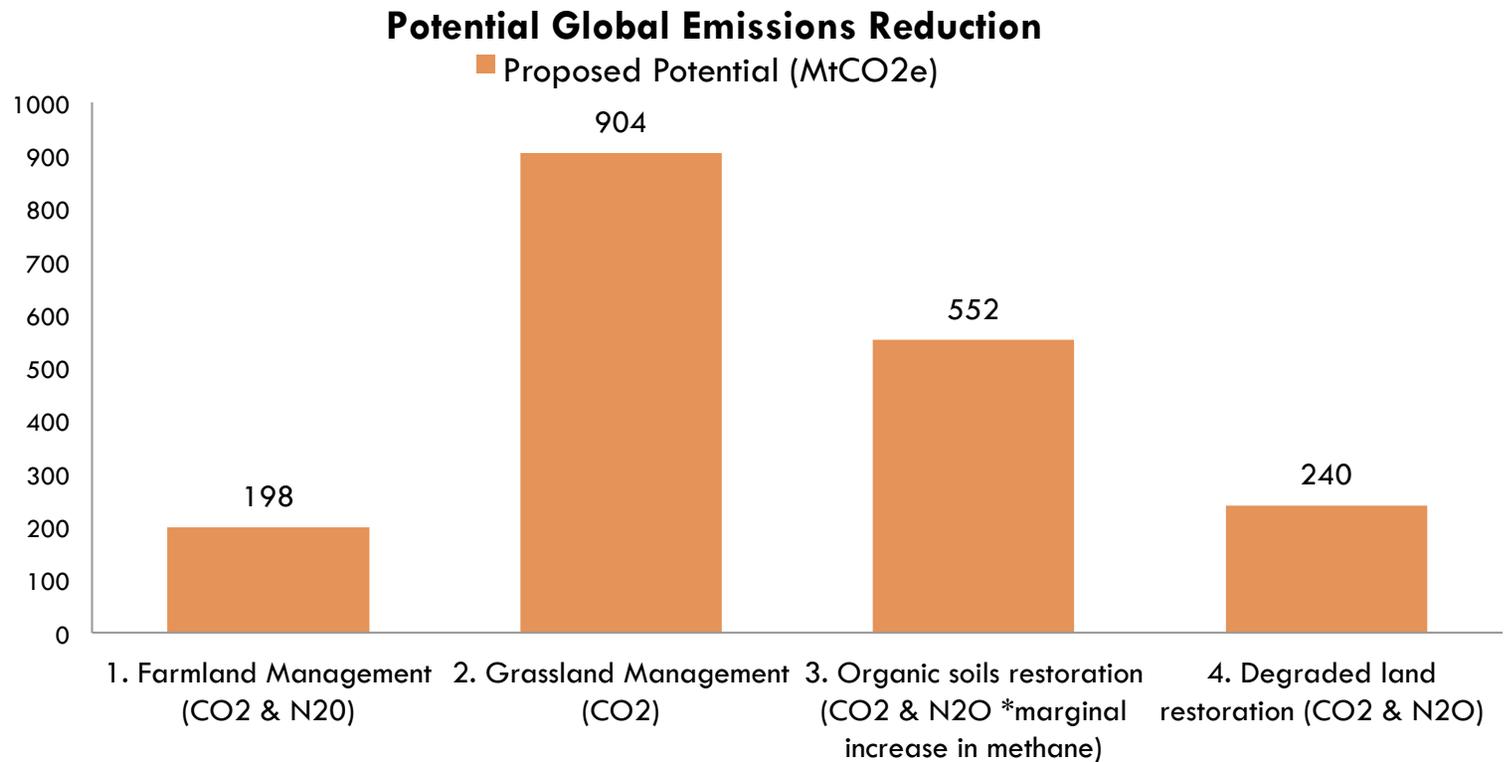
Selection Rationale

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Proposed Agricultural Strategies - Potential

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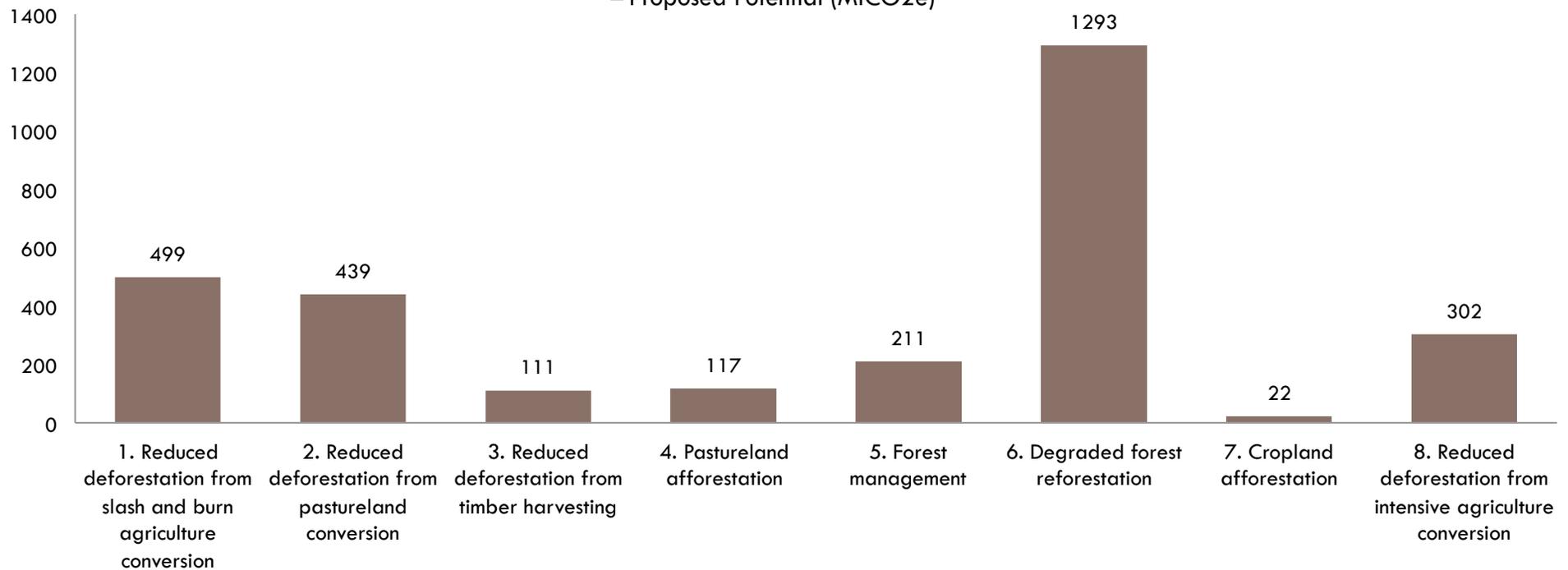
- Total Technical Potential from 4 Agriculture Mitigation Strategies : 3273 MtCO₂e.
- Proposed Potential : 1896 MtCO₂e (58% of total potential).
- Cost Savings on global, national and local level - \$8bn (2020), \$3bn (2030).

Proposed LULUCF Strategies - Potential

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Potential Global Emissions Reduction

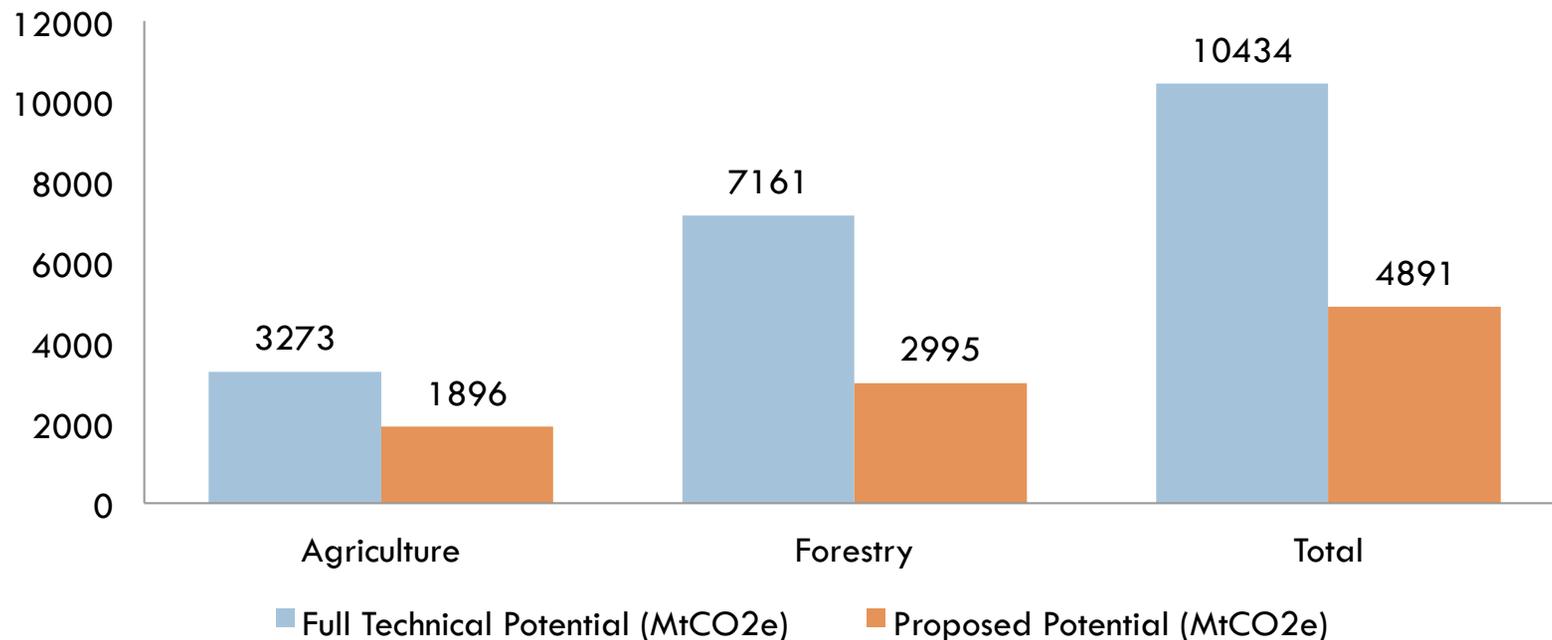
■ Proposed Potential (MtCO₂e)



- Total Technical Potential from 8 Agriculture Mitigation Strategies : 7161 MtCO₂e.
- Proposed Potential : 2995 MtCO₂e.

Proposed Mitigation Strategies – Total

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- Total Technical Potential from 12 Mitigation Strategies : 10434 MtCO₂e.
- Proposed Potential : 4891 MtCO₂e (47% of total potential).

Barriers & Recommendations



Agriculture - Barriers

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- ❑ Uncertainty, risk, and high upfront costs for smallholders.
- ❑ Politically motivated subsidies.
- ❑ Poor R&D, lack of access to information, and lack of locally informed professionals in developing world.
- ❑ Industrial and political dominance of large agribusiness and fertilizer companies.

Agriculture - Recommendations

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- Short-to-medium time frame (present – 2030).
 - ▣ Leverage cost savings opportunities in agriculture.
 - ▣ Leverage abatement potential in major economies (US, China and India) to drive funding, research, technical assistance and capacity building.
- China & India: Incentivize smallholder farmers through access to credit, insurance, supply-chain support.
- Incentivize better corporate behavior through taxation policies and support NGO lobbying for improvements of supply chain for food and beverage industry.

Forestry - Barriers

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- ❑ Difficulty in institutionalizing and devolving MRV practices.
- ❑ Physical, market, and financial pressures from land-use regulation and macroeconomic policies.
- ❑ Activities other than reforestation/afforestation are not included under the CDM.
- ❑ REDD does not fund local level projects which could inform national action plans.

Forestry - Recommendations

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- Increasing funding for technology transfers and MRV, including Landsat forest cover monitoring systems, at the local, regional, and national levels.
- Federal governments can incentivize public-private partnerships at subnational level to realize national level plans.
- Expanding the CDM's mandate to apply to other LULUCF-related activities.

Conclusion

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- ❑ Must overcome barriers by:
 - ❑ Changing incentives for supply chain actors.
 - ❑ Influencing the market.
 - ❑ Improving monitoring, reporting and valuation.
 - ❑ Building on existing initiatives: expand REDD+.
- ❑ Agriculture & LULUCF is a story about Brazil, Indonesia, China, U.S.
 - ❑ DRC & CAR: Impetus for political stability.

