

The Terrestrial Carbon Group

# Discussion Points for an Informal Dinner

*Scope, Reference Emission Levels, and Transition Pathways*

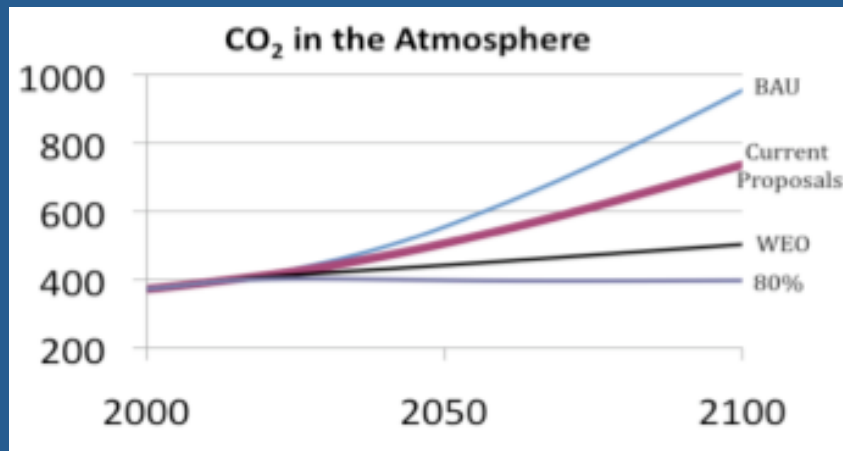
Presentation by **Ralph Ashton**

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28 March 2009, Bonn  
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# Context: How Are We Doing?

Atmospheric concentrations of CO<sub>2</sub> in 2007 were 385ppm, 37% above pre-industrial levels



Scenario	ppm CO <sub>2</sub> in 2100
BAU (calibrated to IPCC SRES A1FI)	950
Current commitments	750
80% reduction in global fossil fuel emissions from 1990 levels by 2050 plus a 90% reduction in land use emissions from 2009 levels by 2050	400

To avoid dangerous climate change, we need significant mitigation action (avoided emissions and new sequestration) in all sectors (industrial and AFOLU)

# Scope

Reference Emission Levels

Transition Pathways

Possible Questions for Discussion

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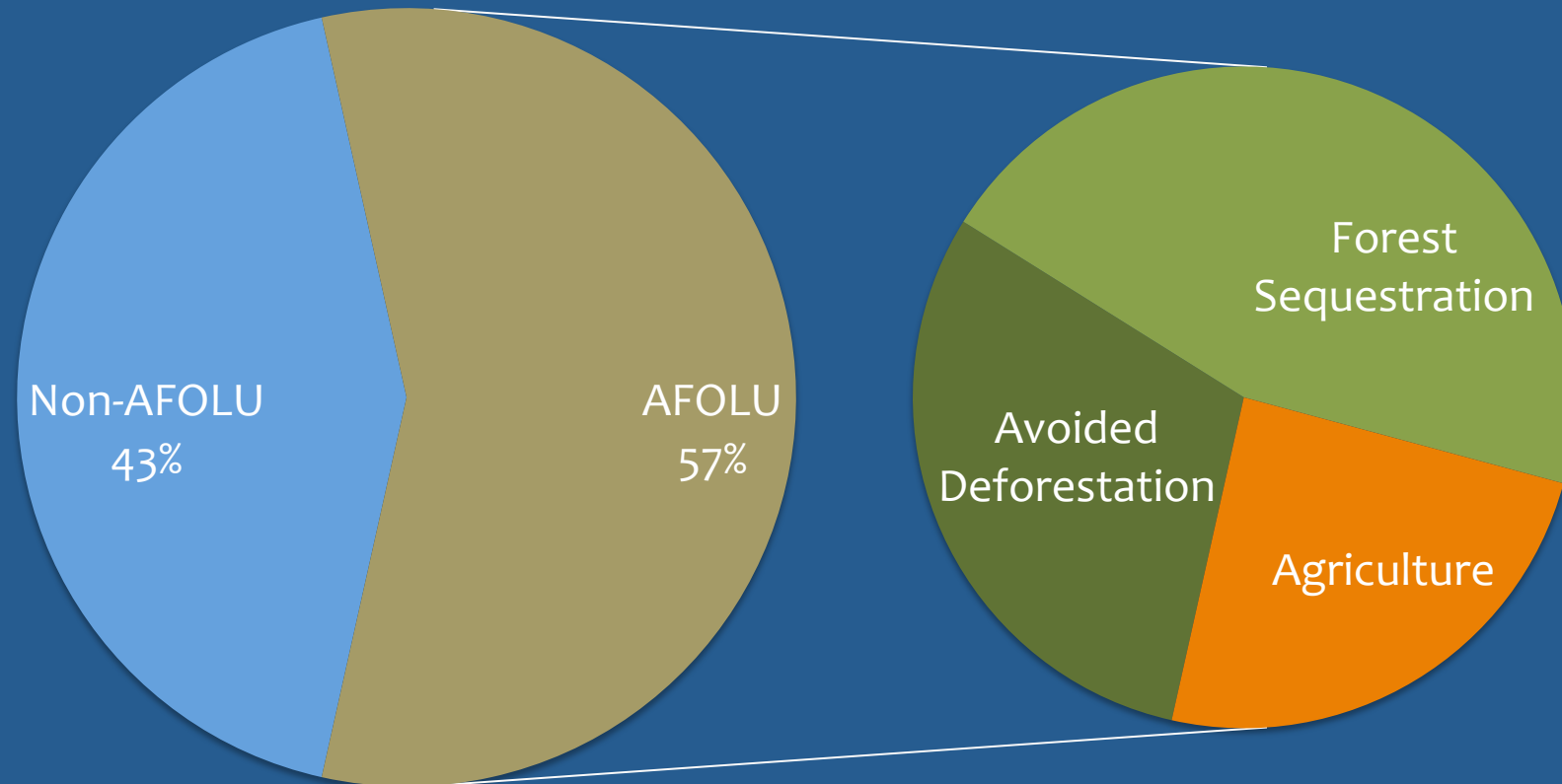
Assisting Making it Happen

Sources and Notes

# Developing Country Mitigation Potential

Overall Mitigation Potential

AFOLU = 12.5 GtCO<sub>2</sub>e pa (total)



Over half of developing world mitigation potential is in AFOLU. Need a comprehensive framework that includes avoided deforestation and forest sequestration now and builds in the whole AFOLU sector later?

# Select Country and NGO Stated Positions

## Deforestation (RED)

BRAZIL

EDF

GREENPEACE

## Deforestation & Degradation (REDD)

CfRN

INDONESIA



CANADA

CATIE

CHILE

MALAYSIA

EU

CISDL

COLOMBIA

MEXICO

JAPAN

CSERGE I

COSTA RICA

PARAGUAY<sup>^</sup>

NEW ZEALAND

CSERGE II



ECUADOR

JRC

WHRC

## Deforestation, Degradation & Enhancement (REDD+)

*Enhancement incorporates afforestation, reforestation and/ or sequestration*

COMESA \*



AUSTRALIA \*



TCG \*



COMIFAC

NORWAY

INDIA

USA \*



SURINAME

## Not Specified

GUYANA

\* Ultimate objective of comprehensive mechanism encompassing entire AFOLU sector

† Degradation should be voluntary

<sup>^</sup> On behalf of Argentina, Honduras, Panama, and Peru

Larger boxes denote submissions made on behalf of a number of countries

# Scope

Reference Emission Levels

Transition Pathways

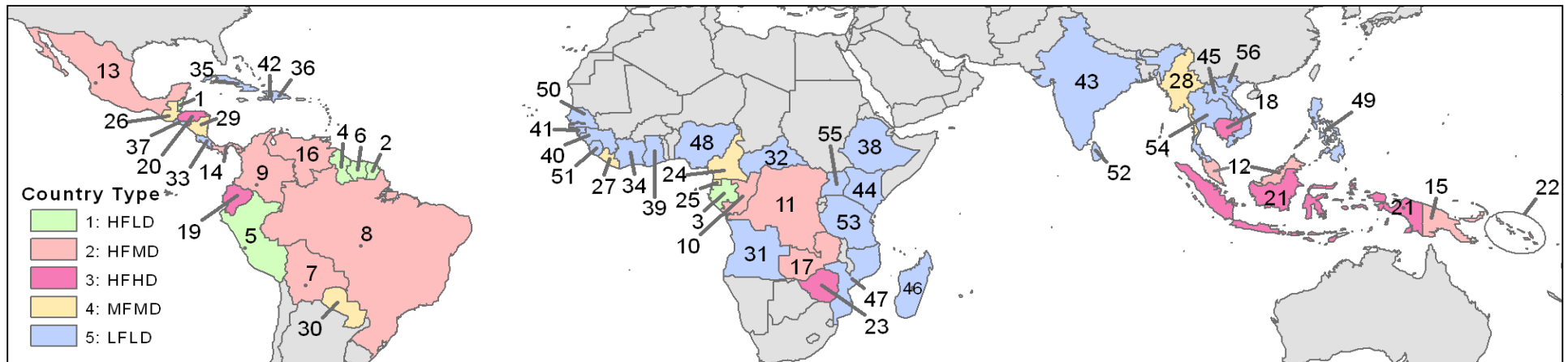
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# Different Circumstances / Different Views?



## Type 1: HFLD

- 1 - Belize
- 2 - French Guiana
- 3 - Gabon
- 4 - Guyana
- 5 - Peru
- 6 - Suriname

## Type 2: HFMD

- 7 - Bolivia
- 8 - Brazil
- 9 - Colombia
- 10 - Congo
- 11 - Congo, DRC
- 12 - Malaysia
- 13 - Mexico
- 14 - Panama
- 15 - Papua New Guinea
- 16 - Venezuela
- 17 - Zambia

## Type 3: HFHD

- 18 - Cambodia
- 19 - Ecuador
- 20 - Honduras
- 21 - Indonesia
- 22 - Solomon Is.
- 23 - Zimbabwe

## Type 4: MFMD

- 24 - Cameroon
- 25 - Equatorial Guinea
- 26 - Guatemala
- 27 - Liberia
- 28 - Myanmar
- 29 - Nicaragua
- 30 - Paraguay

## Type 5: LFLD

- 31 - Angola
- 32 - Central African Republic
- 33 - Costa Rica
- 34 - Cote d'Ivoire
- 35 - Cuba
- 36 - Dominican Republic
- 37 - El Salvador
- 38 - Ethiopia
- 39 - Ghana
- 40 - Guinea
- 41 - Guinea-Bissau
- 42 - Haiti
- 43 - India
- 44 - Kenya
- 45 - Laos
- 46 - Madagascar
- 47 - Mozambique
- 48 - Nigeria
- 49 - Philippines
- 50 - Senegal
- 51 - Sierra Leone
- 52 - Sri Lanka
- 53 - Tanzania
- 54 - Thailand
- 55 - Uganda
- 56 - Vietnam

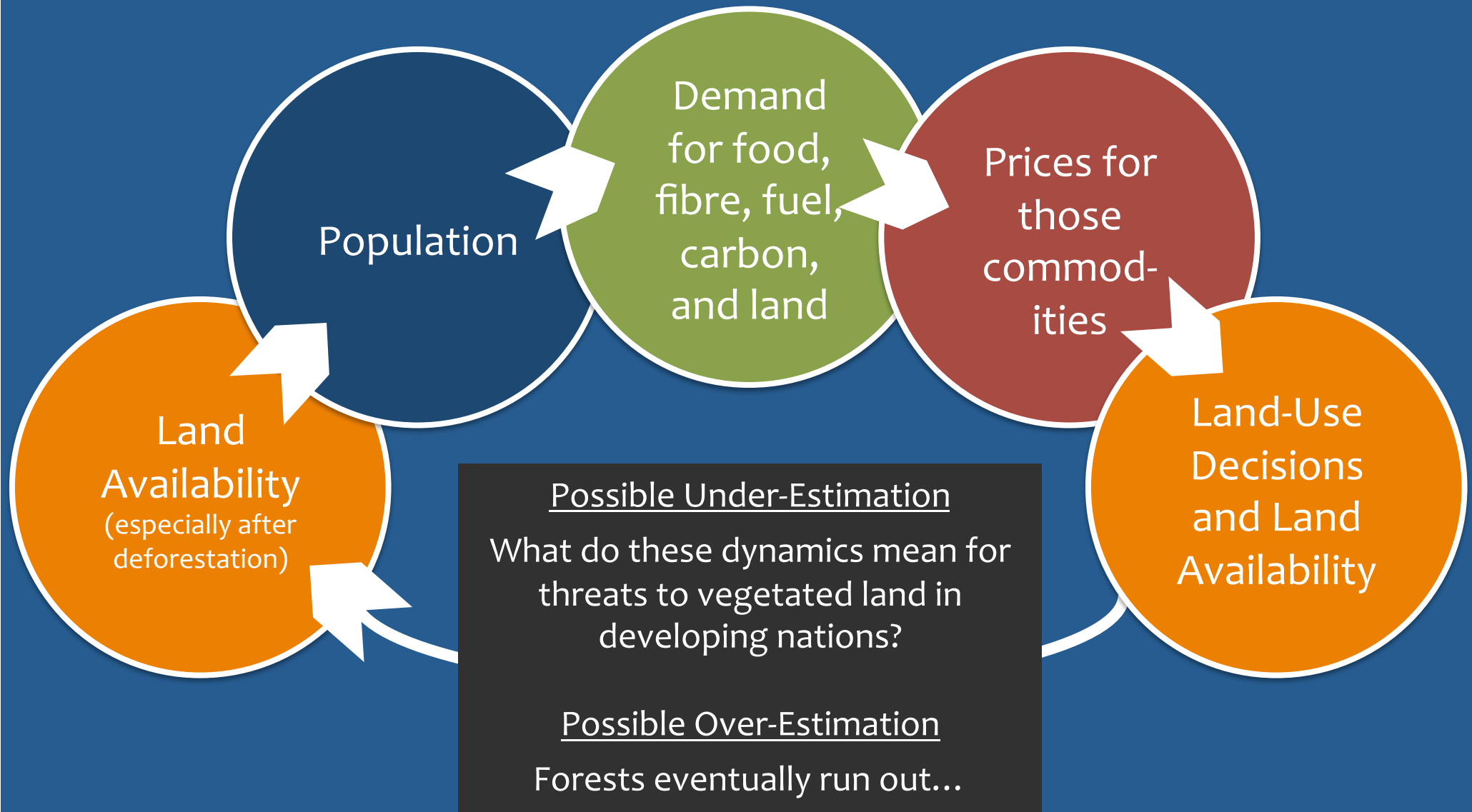
# Broad Participation is Required

- Broad participation is required for an effective system
- “There is greater risk of international leakage with limited participation”
- Participation can be broadened by providing incentives to most / all developing countries via reference emission levels and / or complementary measures, for example:
  - Projected / adjusted reference emission levels
  - Notional (higher) reference emission levels for historically low emitters
  - A stabilisation fund to reward / compensate carbon stocks

Should participation be considered in terms of the volume of carbon or the number of countries, or both?



# Is History a Good Guide?



# Select Country and NGO Stated Positions

	Historical	Projected / Adjusted	Not Specified
Sub-National		* COLOMBIA † * COMIFAC †	
National	BRAZIL CHILE † COSTA RICA † INDIA PARAGUAY^ † CATIE † CSERGE II EDF GREENPEACE JRC	* CfRN † GUYANA INDONESIA * AUSTRALIA * MEXICO † * EU † SURINAME * NORWAY † CISDL TCG †	ECUADOR † NEW ZEALAND † USA
Global	CSERGE I WHRC		

Not Specified

COMESA

MALAYSIA

CANADA

JAPAN

\* Incorporate “development adjustment factor” or similar  
 † Support a transitional approach from sub-national to national approach  
 ^ On behalf of Argentina, Honduras, Panama, and Peru  
 Larger boxes denote submissions made on behalf of a number of countries

# Setting Reference Emission Levels

Scale	Purpose	Method	Responsible
Sub-National and Project	<ul style="list-style-type: none"> <li>• Link between sub-national / project implementation and national carbon accounting</li> </ul>	<ul style="list-style-type: none"> <li>• Based on voluntary carbon market standards?</li> <li>• Other?</li> </ul>	National
<b>National</b> Focus of Discussion	<ul style="list-style-type: none"> <li>• Credible reflection of likely emissions</li> <li>• Building trust / believability</li> </ul>	<ul style="list-style-type: none"> <li>• Uniform formula for all countries?</li> <li>• Negotiated table of numbers?</li> </ul>	International
Aggregate of Participating Nations	<ul style="list-style-type: none"> <li>• Minimise “hot air”</li> <li>• Understand implication of offsets for global carbon budget (all sectors)</li> </ul>	<ul style="list-style-type: none"> <li>• Sum of all national RELs compared to expected global sector net emissions and sequestration?</li> <li>• Other?</li> </ul>	International
Global All Sectors (industrial and AFOLU)	<ul style="list-style-type: none"> <li>• Reach ultimate objective of UNFCCC</li> <li>• Avoid dangerous climate change</li> </ul>	<ul style="list-style-type: none"> <li>• Sum of all possible offsets compared with overall, all-sector mitigation effort</li> </ul>	International

How do you mediate a credible and effective negotiated outcome?  
 UNFCCC, COP, SBSTA, IPCC, new body?

Scope

Reference Emission Levels

Transition Pathways

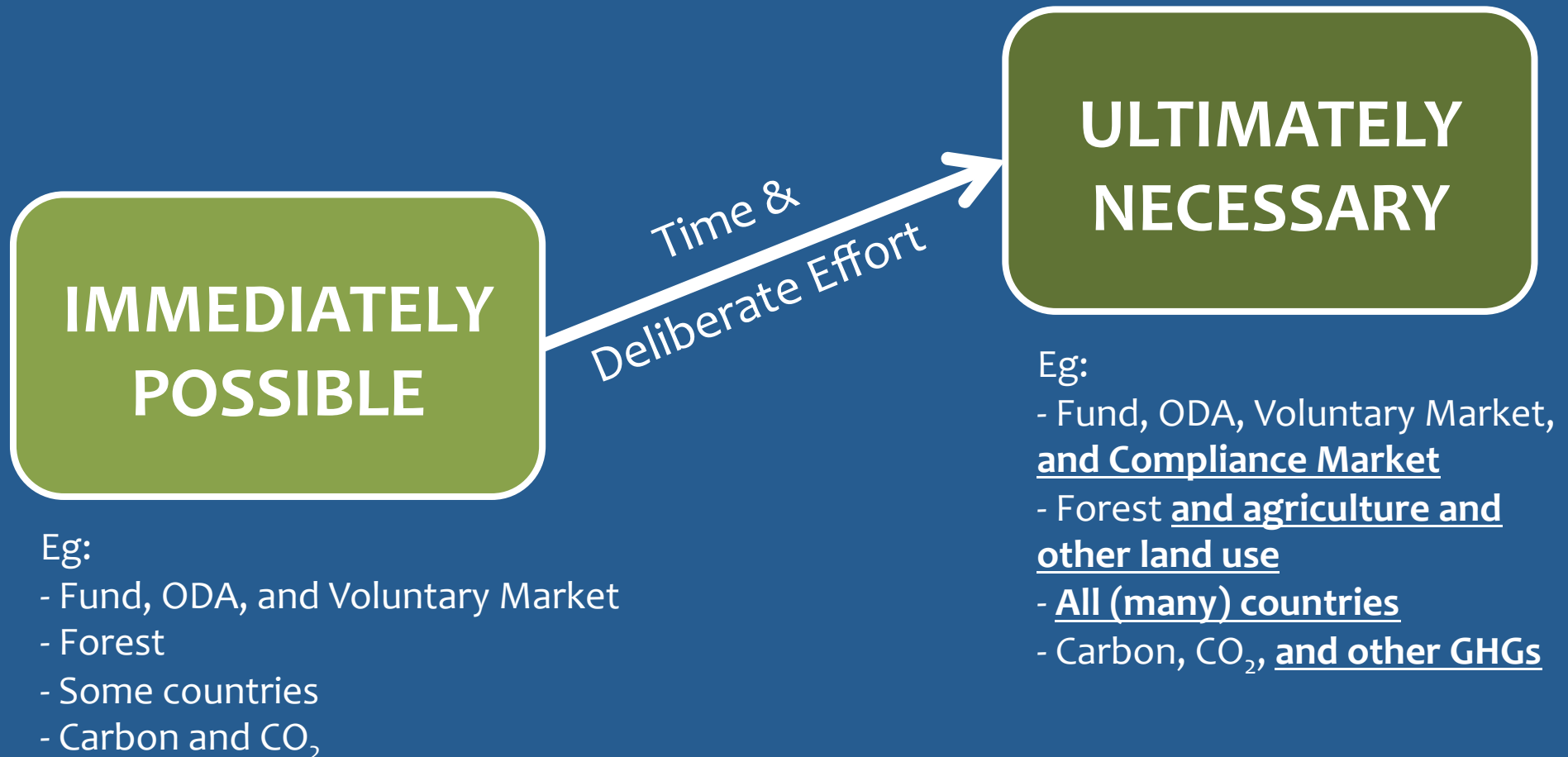
Possible Questions for Discussion

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Sources and Notes

# Why Have Transition Pathways?

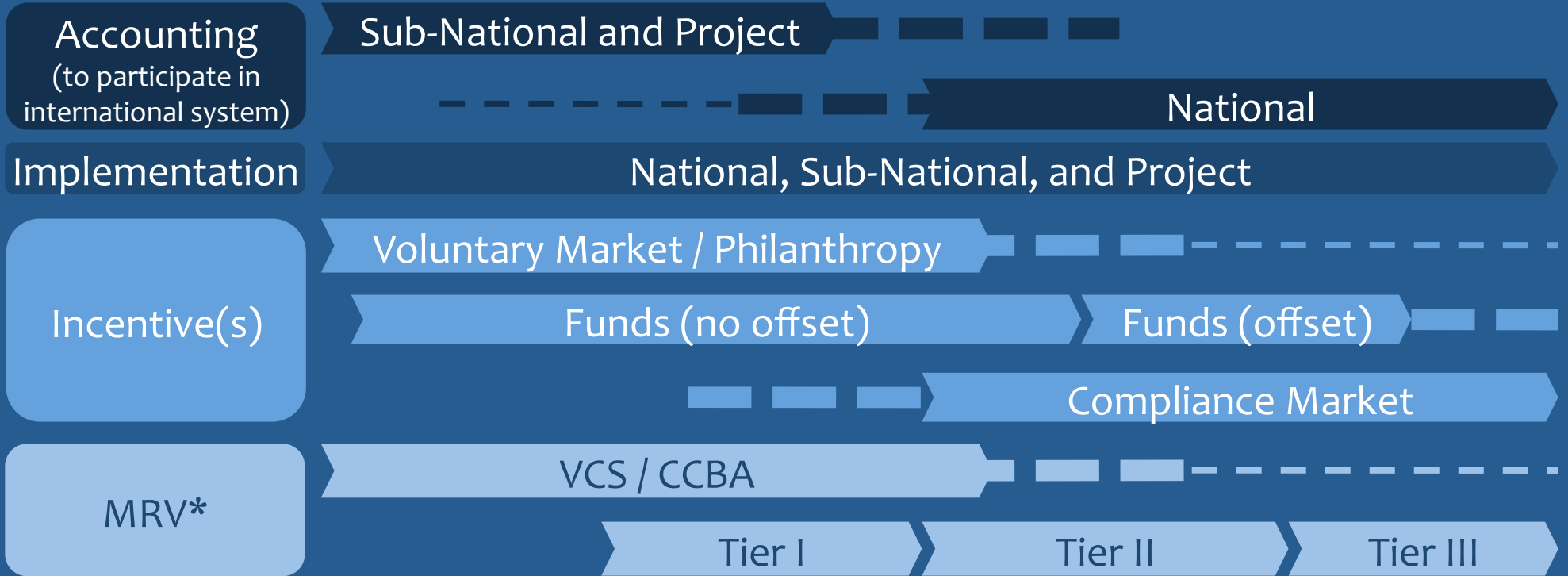


“Upward Compatibility”: Nest the Immediately Possible in a **framework** of the Ultimately Necessary

# Possible Transition Pathways

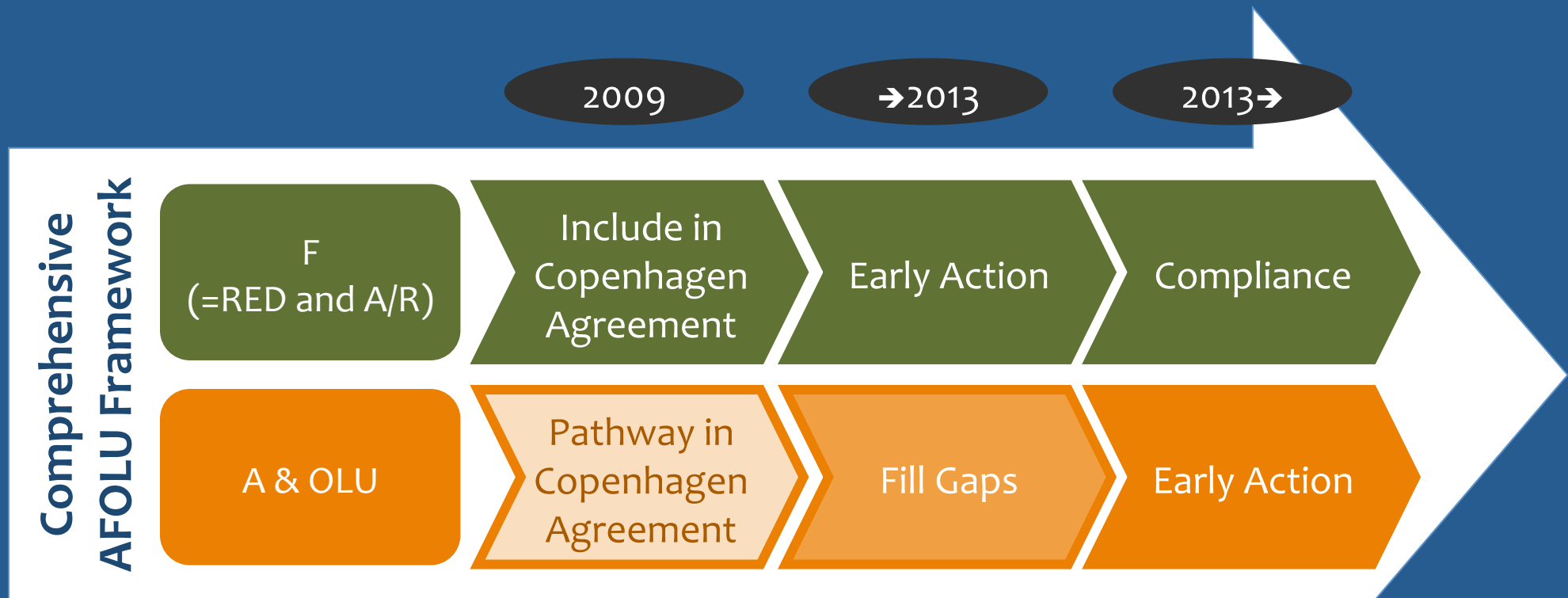


Everything is not linear and sequential: can have parallel tracks, and different countries can move at different speeds



\* Different for offset credits (whether Fund or Market) and other incentives? Different for national accounting and project level accounting?

# Transition Pathway from F to AFOLU



Scope

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## Scope

- Is AFOLU (or terrestrial carbon, or biocarbon) the medium- to long-term vision?
- What is influencing parties' submissions / positions? A fear of “derailing RED”? Lack of comprehensive information?
- How can you seize the opportunity of forestry now and work towards an approach that incorporates all AFOLU (or terrestrial carbon, or biocarbon)?

## Reference Emission Level

- Is a development adjustment factor another way reach a projected reference emission level, a way to get broad participation, and / or something else?
- Is historical data proposed because this represents the future, because of data availability, or because incentives should be based on recent past?
- How do you ensure permanence after the incentives? Should reference emission levels be adjusted over time? If so, how? Stabilisation fund? Paying for stocks?

## MRV

- Different requirements for offset credits (whether Fund or Market) vs other (non-offset) incentives? Different for national accounting vs project-level implementation accounting? Different for national communications (ie, managing the global carbon budget)?

Are different words and methods used to mean the same thing?

Scope

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# Terrestrial Carbon Group in 2009

Working with governments, academia, and civil society on:

## National-scale system demonstration(s)

### New information and analysis to support informed decision making

- Collaborative Modelling Initiative (OSIRIS) – modelling of multiple proposed “RED” approaches
- Detailed modelling of the Terrestrial Carbon Group approach
- Improving the C-ROADS terrestrial component
- Biodiversity & REDD analysis

### Trajectory

- Implementation Roadmap 2010-2020: what are all the things that need to happen, and in what sequence / parallel tracks
- MRV options paper
- State of the science, and research needs, for RED to AFOLU implementation

### Tools for implementation

- Methodologies, data requirements, and models for determining a credible reference emission level
- Regulatory building blocks for national implementation

# Global Terrestrial Carbon Institute

Establish a Global Terrestrial Carbon Institute to work with existing organisations to:

- Coordinate and undertake awareness-raising, education, and research on climate change mitigation and adaptation, and agricultural productivity
- Develop methodologies
- Suggest policy solutions
- Coordinate and foster technology transfer (South-South and North-South)
- Provide in-country assistance to developing countries
- Advise on demonstration activities
- Work on international and national institutional and regulatory design and capacity-building
- Facilitate agreement between parties on issues such as reference emission levels

Support the transition to a global land-use paradigm that provides sufficient food, fibre, fuel, and other values to a burgeoning global population in a carbon-constrained world

# Sources and Notes

Slide: “Context: How Are We Doing?”

- C-ROADS (Climate Rapid Overview And Decision Support) simulation tool developed by MIT Sloan School of Management, Sustainability Institute, Ventana Systems, and The H. John Heinz Center for Science, Economics and the Environment (2009). See [climateinteractive.org](http://climateinteractive.org).

Slides: “Developing Country Mitigation Potential”

- Pie chart with split between AFOLU and non-AFOLU mitigation potential in developing countries is based on mitigation potential in developing countries at less than Euro 60 / tCO<sub>2</sub> in 2020 according to McKinsey & Company’s Cost Curve 2 (2009). Note that this data is not entirely consistent with the break-out pie chart with splits between Avoided Deforestation, Forest Sequestration and Agriculture (see next bullet point).
- Break-out pie chart with splits between Avoided Deforestation, Forest Sequestration and Agriculture show mitigation potential at less than US\$100 / tCO<sub>2</sub> in 2030 based on forest carbon; agricultural sequestration; and avoidance of N<sub>2</sub>O and CH<sub>4</sub> emissions, mainly from livestock (< 0.1 Gt). Developing countries = Non-OECD / Non-EIT. Smith et al., 2007 (Figure 8.5: Total technical mitigation potentials (all practices, all GHGs: MtCO<sub>2</sub>-eq/yr) for each region by 2030, showing mean estimates); Nabuurs et al, 2007 (Table 9.3: Potential of mitigation measures of global forestry activities. Global model results indicate annual amount sequestered or emissions avoided, above business as usual, in 2030 for carbon prices 100 US\$/tCO<sub>2</sub> and less); both from Climate Change 2007: Mitigation. Contribution of working group III to the 4th assessment report of the IPCC.

Slide: “Agriculture is Leading Driver of Deforestation Emissions”

- McKinsey & Company analysis for Project Catalyst (2009) based on interviews; Houghton; Houghton and Hackler; Geist and Lambin; FAO FAOSTAT.

Slides: “Select Country and NGO Stated Positions”

- Terrestrial Carbon Group analysis of submissions to UNFCCC and other public statements available as at 25 March 2009, building on Prince’s Rainforests Project analysis as presented in the Global Canopy Programme’s “Little REDD Book” (2008).

Slide: “Different Circumstances / Different Views?”

- The Nature Conservancy (2009), based on remaining forest in 1996 compared with original forest cover, and mean annual rate of forest cover loss 1990-2005 as a percentage of original forest cover.

Slide: “Broad Participation is Required”

- Collaborative Modeling Initiative’s OSIRIS model (2009) and analysis for Meridian Institute’s “REDD Options Assessment Report” (2009) prepared for the Norwegian Government.

# The Terrestrial Carbon Group

*Science, Economics, Public Policy*

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Bernardo Strassburg

The Terrestrial Carbon Group's paper is now available in 5 languages at [terrestrialcarbon.org](http://terrestrialcarbon.org)

Bahasa Indonesia

English

Español

Français

Português do Brasil

† RIP 2008

