

# Policy Innovation on Climate

What conditions facilitate success?

7/7/2015

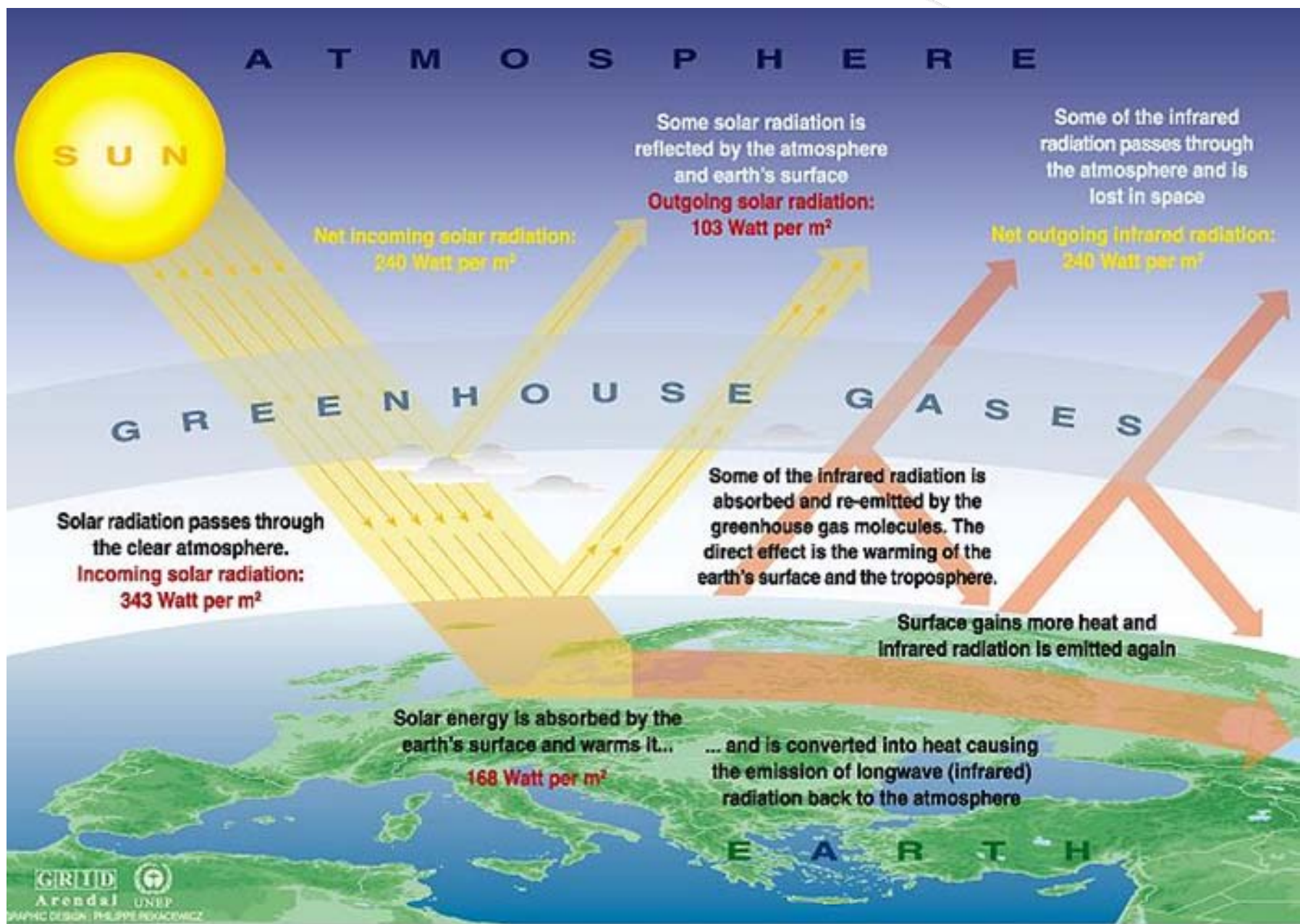
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Infrastructure and Environment Sector  
Climate Change and Sustainability Division



# Outline

- What is Climate Change?
- CC impacts in LAC
- Options for combating CC: Mitigation and Adaptation
- Where have we seen improvements?
- Why we have not seen more actions?
- Conclusions



Sources: Okanagan university college in Canada, Department of geography, University of Oxford, school of geography; United States Environmental Protection Agency (EPA), Washington; Climate change 1995, The science of climate change, contribution of working group 1 to the second assessment report of the intergovernmental panel on climate change, UNEP and WMO, Cambridge university press, 1996.

# International Context

- COP 15<sup>th</sup> (2009): agreement of goal of no more 2°C, or between 450ppm and 550ppm or 20GtCO<sub>2</sub>e by 2050
- 2tCO<sub>2</sub>e per capita (today in LAC: 7tCO<sub>2</sub>e)
- If no trajectory change: 9.3tCO<sub>2</sub>e by 2050, increasing the probability of more than 2°C with catastrophic impacts

**WHAT ARE  
THE IMPACTS  
OF CC?  
WHAT ARE  
THE COSTS?**



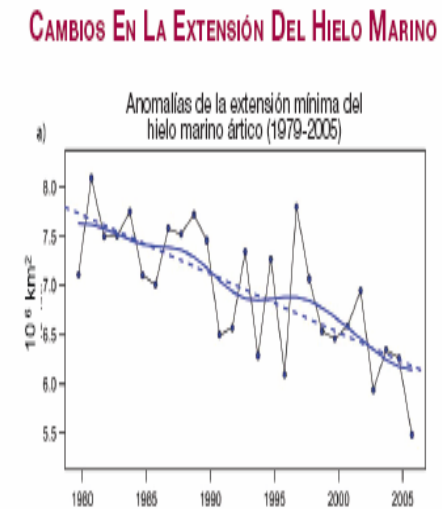
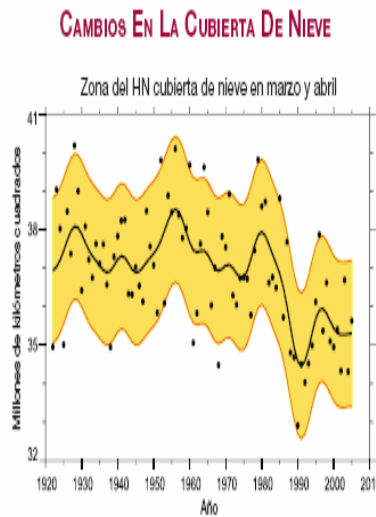
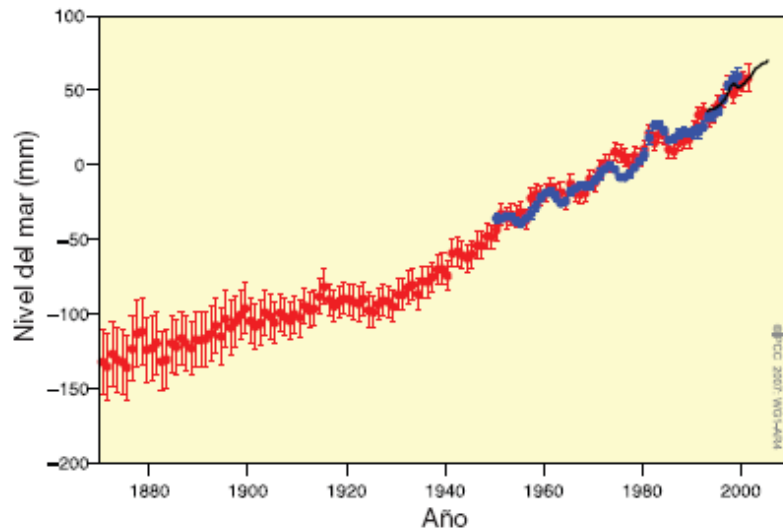
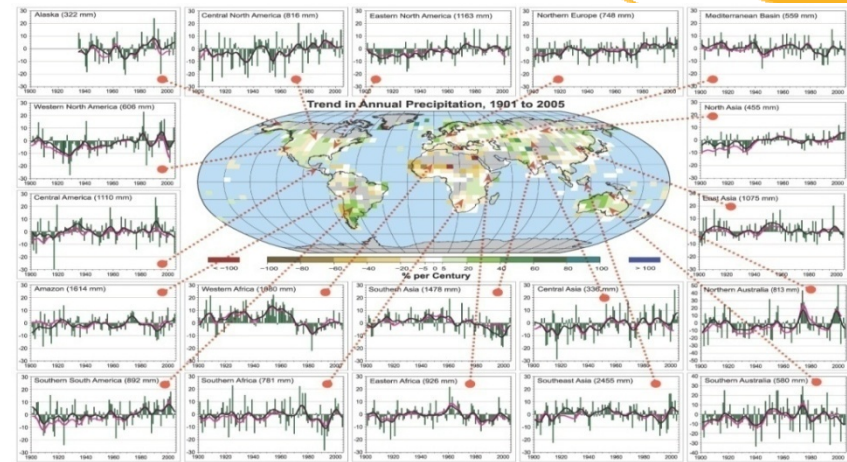
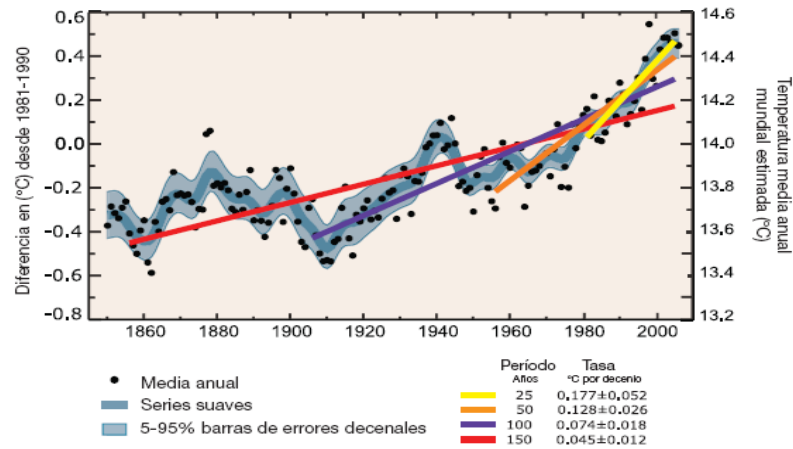
# IPCC 2014: New Evidence

Some would argue climate change is in the distant future so why should we act now?

Well,:

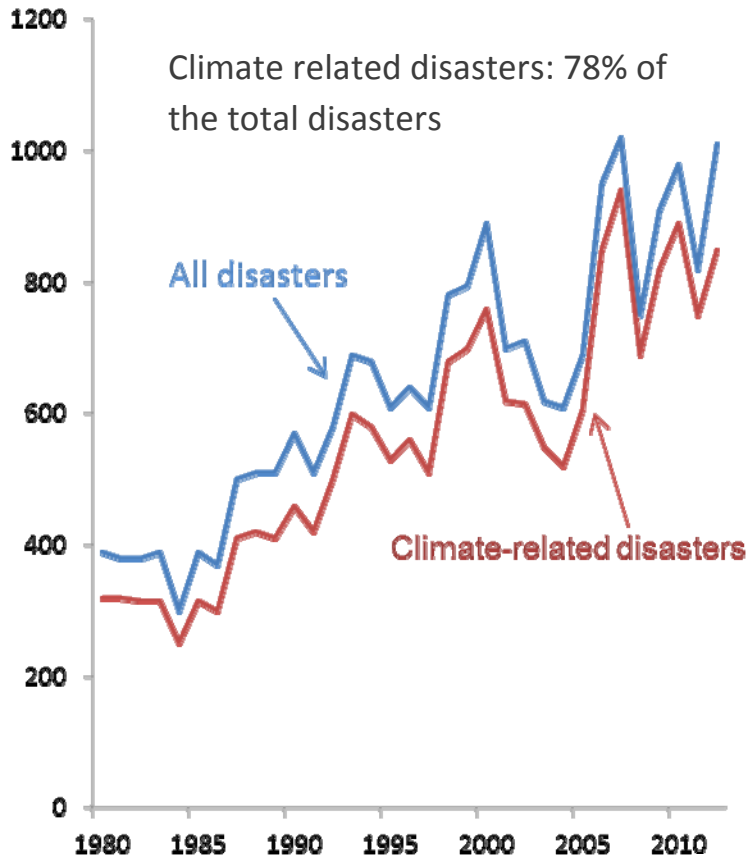
- we are seeing the effects today, with climate variability
- Points of no return, thresholds, sudden changes (Mayer, 2012)
- At the rate we are increasing the GHG emissions (400ppm), the initial 2050 timeline is becoming 2030
- the return on the investments that you do in the next years may be affected by the impacts of climate change sooner that we have anticipated
- Stranded Assets, it makes economic sense

# How do I “see” climate change?

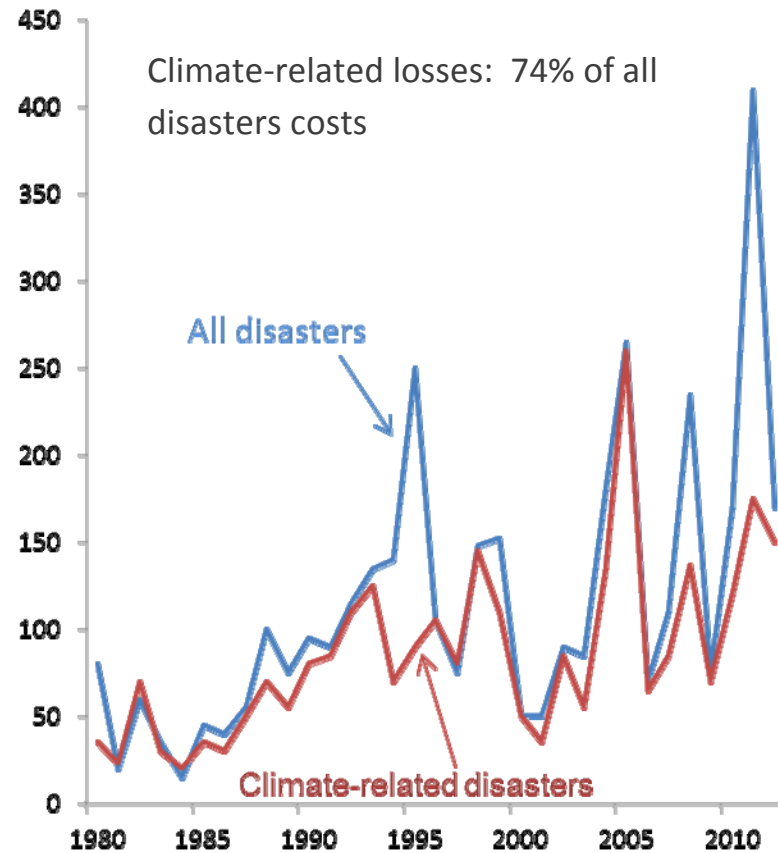


# How do I “see” climate change?

### Number of disasters worldwide (1980 – 2012)



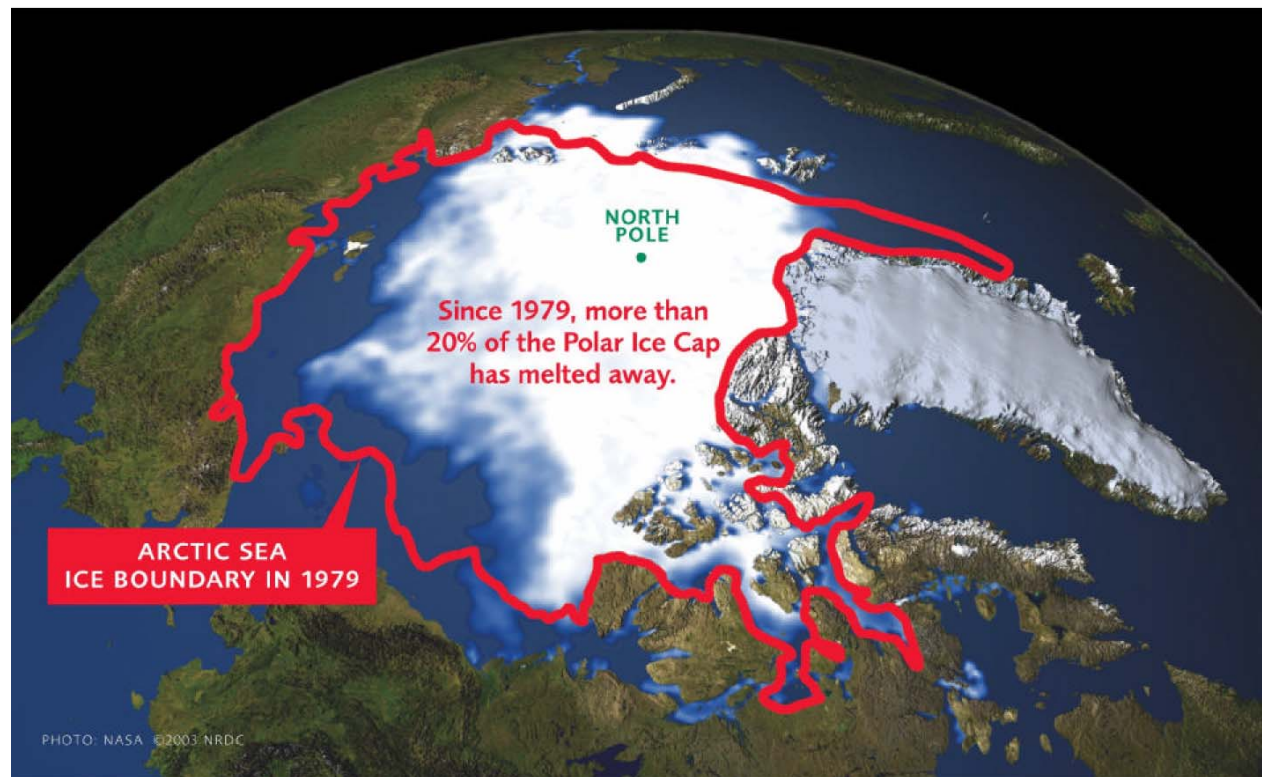
### Disaster-related losses (US\$ billion, 2012 values)





# How do I “see” climate change?

## What’s Wrong With This Picture?



# How do I “see” climate change? Impacts

Increase in daily temperatures

Change in rainfall patterns

Sea Level Rise, Increase sea surface temperature

- Coral bleaching
- Salinization of freshwater
- Increased extreme weather events

Changes in hydrology

Biodiversity loss

Others



# The Costs of Climate Change

**IDB estimated that adaptation costs in around \$80-\$110 billions annually by 2050, or 2.2% of LAC's GDP (2010)**

**ECLAC (2014) estimated the costs could be between 1.5 to 5 % of LAC GDP if the temperature increase more than 2.5°C**

\* Total reported must be considered as a range and a conservative estimate with caveats as: (i) estimations are gathered from different studies with variations in methodologies, assumptions and uncertainties, (ii) many costs are only partially presented and others are difficult to estimate, and (iii) non-monetary costs are not considered. See report for list of references



# IDB estimate costs of \$80-\$110b /yr by 2050 or 2.2% of LAC GDP (2010)

Impact	Area	Projected annual costs* (2005 \$ billion)	Projected cumulative costs	Source
Loss in net export agricultural revenues: wheat, soybean, maize, and rice	LAC	26–44		Fernandes et al. 2012 <sup>a</sup>
Sea-level rise (1m)	LAC	22		Dasgupta et al. 2007 <sup>b</sup>
Coral bleaching	Caribbean	8–11		Vergara et al. 2009 <sup>c</sup>
Intensification and frequency increase of extreme weather events	CARICOM	5		• Toba 2009 <sup>d</sup>
	Mexico's Gulf coast, Central America, and the Caribbean		110–149 for 2021–2025	Curry et al. 2009 <sup>e</sup>
Health (increase in incident cases of diarrhea and malnutrition)	LAC	1		Ebi 2008 <sup>f</sup>
Amazon dieback	Latin America	4–8		Authors' estimation <sup>g</sup>
Glacier retreat	Peru	1		Vergara et al. 2007 <sup>h</sup>
Loss of ecosystem services	Latin America		36	Authors' estimation <sup>i</sup>
Hydropower generation	Brazil	18		Authors' estimation <sup>j</sup>
Estimated total		85–110		
percent LAC GDP**		1.8–2.4		

# POLICY OPTIONS FOR CLIMATE



# Two main types of intervention:

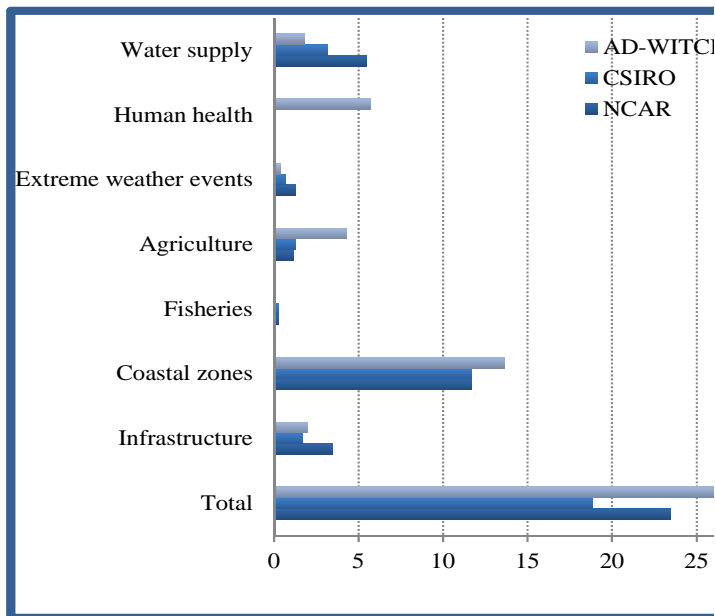
Mitigation

Adaptation

# Adaptation makes economic sense: IDB estimate costs of US\$17 –US\$27b /yr

Annual average adaptation costs estimates for Latin America and the Caribbean

(Billions of dollars)



**While not addressing all impacts, adaptation is cost effective because the \$1 in adaptation prevents up to \$4 in economic consequences**

# What needs to be done? Examples of Adaptation Measures

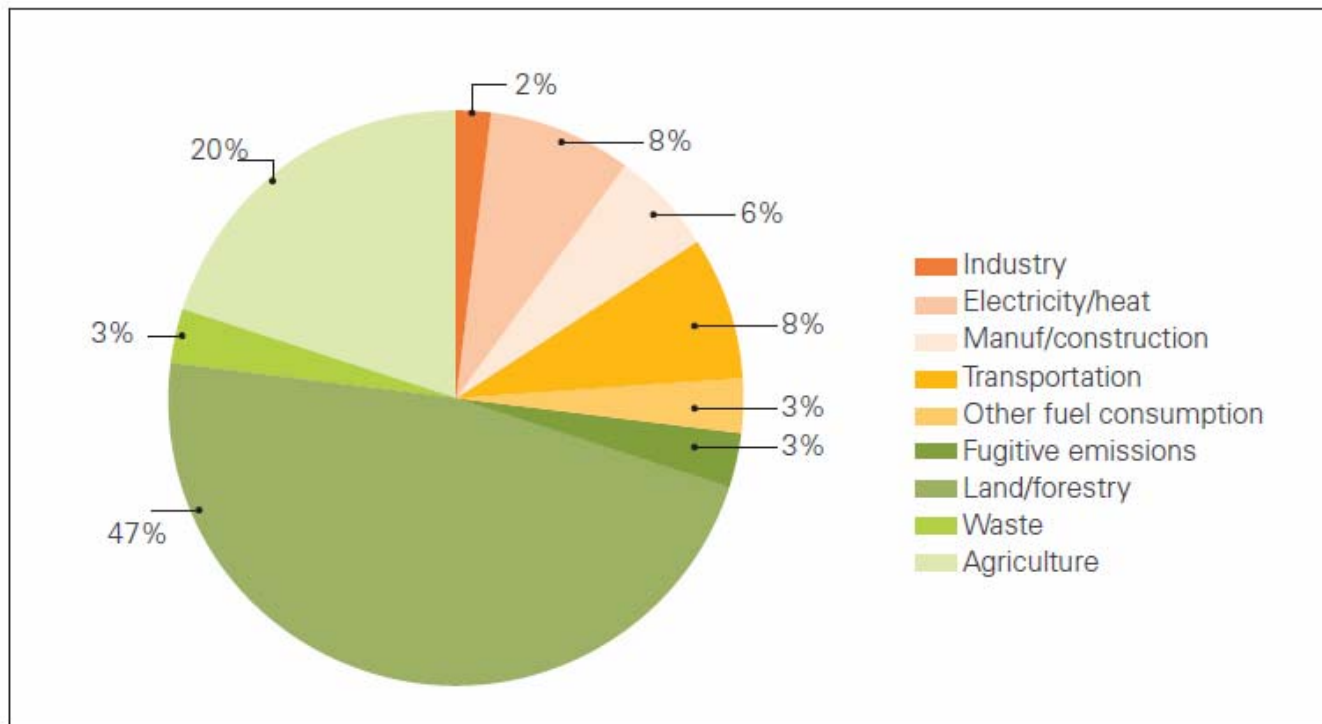


- Develop response measures to maintain water supply in key basins
- Make coastal zone management climate resilient
- Adapt agriculture to changes in temperatures and rainfall patterns
- Deploy ecosystem based adaptation



# Is this enough? How to avoid a 4°C Rise and its consequences?

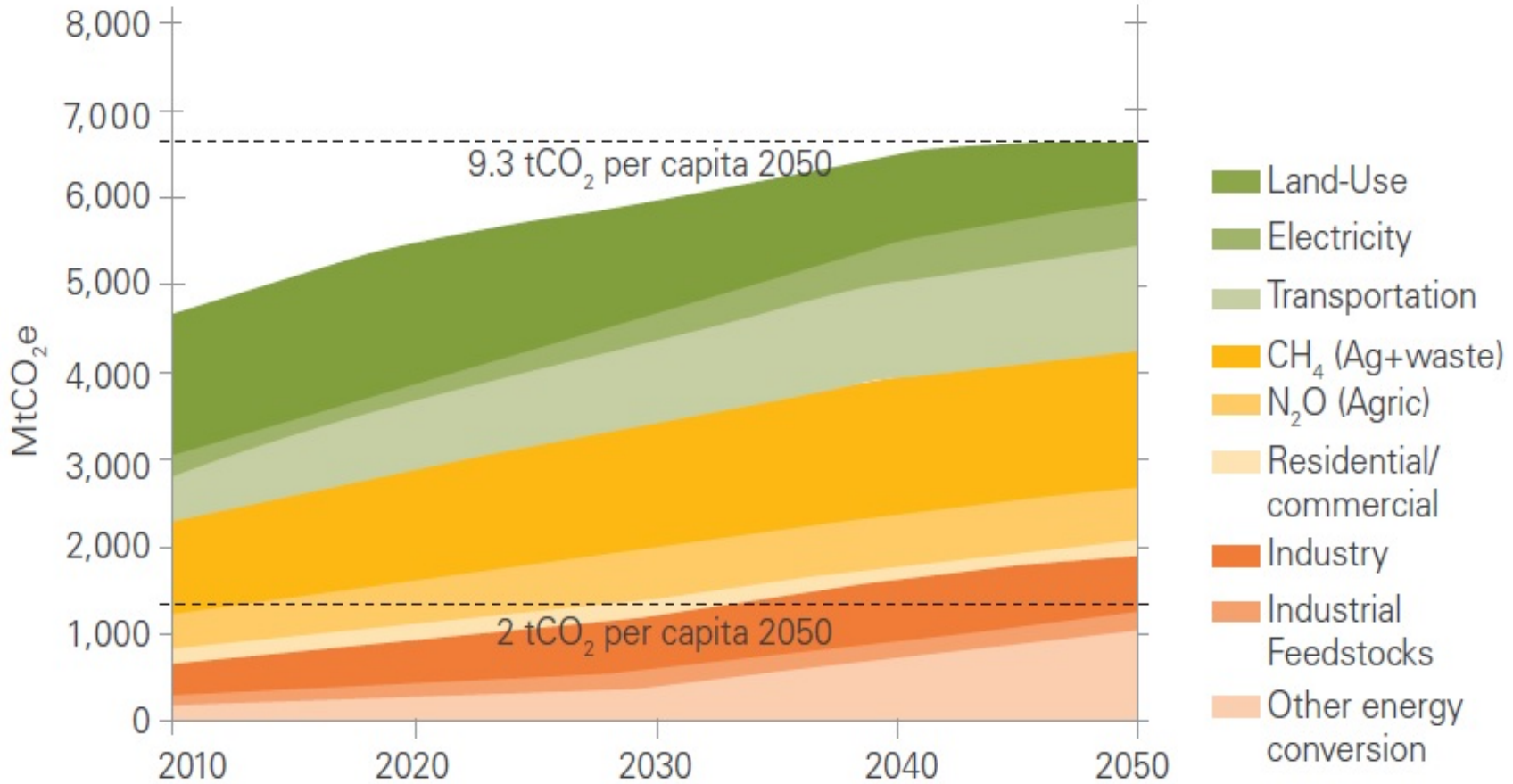
Figure 2.1 Sector Composition of Total Greenhouse Gas Emissions in LAC, 2005<sup>24</sup>



Source: Authors' compilation based on WRI (2012) data.

Note: The above sector contributions refer to percentage shares of total LAC GHG emissions. Therefore, while transportation, for example, accounts for 8 percent of the region's total emissions, as seen above, this sector accounts for 29 percent of LAC's energy emissions (which account for only 28 percent of LAC's total GHG emissions).

# Where is the region heading?



# What needs to be done? Examples of Mitigation Measures

- Zero out deforestation and decarbonize agriculture
- Decarbonize power sector
- Zero carbon transport systems
- 80% of the problem of emissions in the region



# ELEMENTS FOR SUCCESS (GGBP)



# Types of Policies

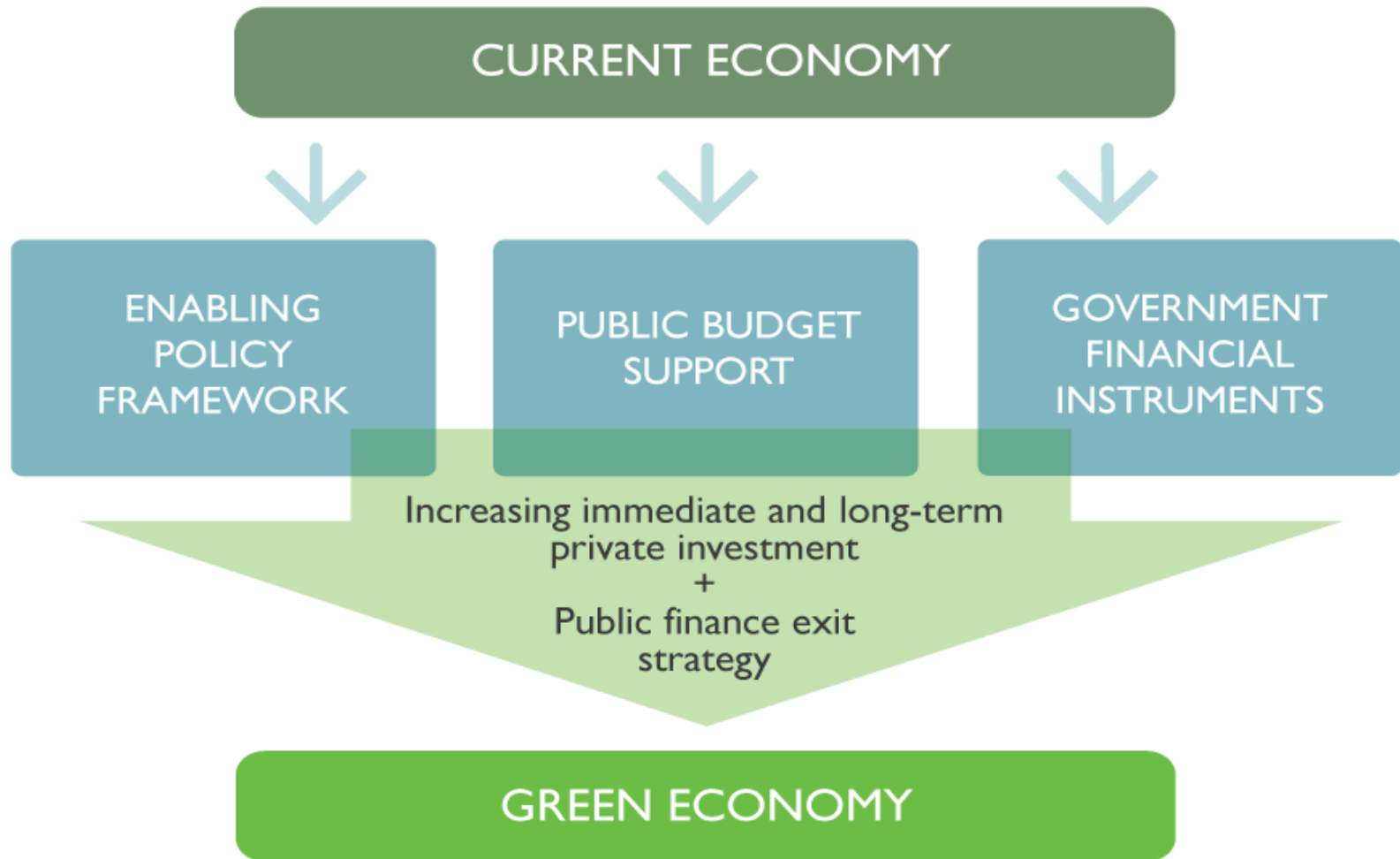
Both **economy-wide policies**, e.g. innovation and natural resource pricing, and **policy measures in key sectors**, e.g. transport and agriculture.

**Comprehensive *and* coherent policy portfolios** to enable transformational change and achieve low carbon growth across the economy

# Policy Design and Implementation



# Facilitating the funding of Climate Policy



# Planning and Coordination: Main Elements

1. Recognize trade-offs
2. Multisector work: coordination across ministries
3. Clear responsibilities between agencies
4. High level mandate facilitates actions
5. Targets, Monitoring and Evaluation
6. Special Dynamic at work when looking at economy wide change: Case of Mexico

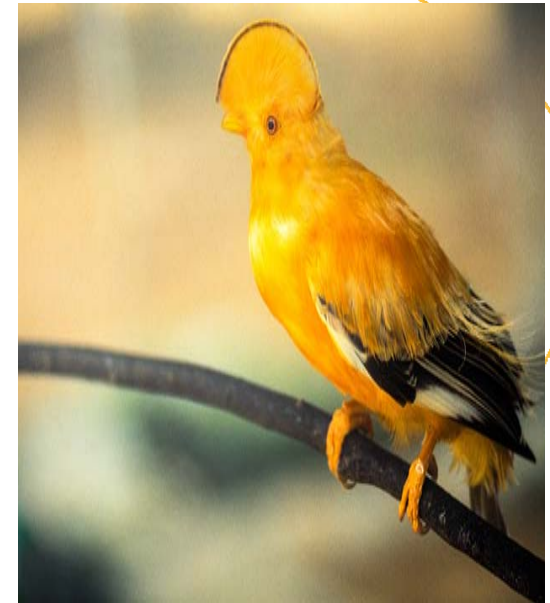
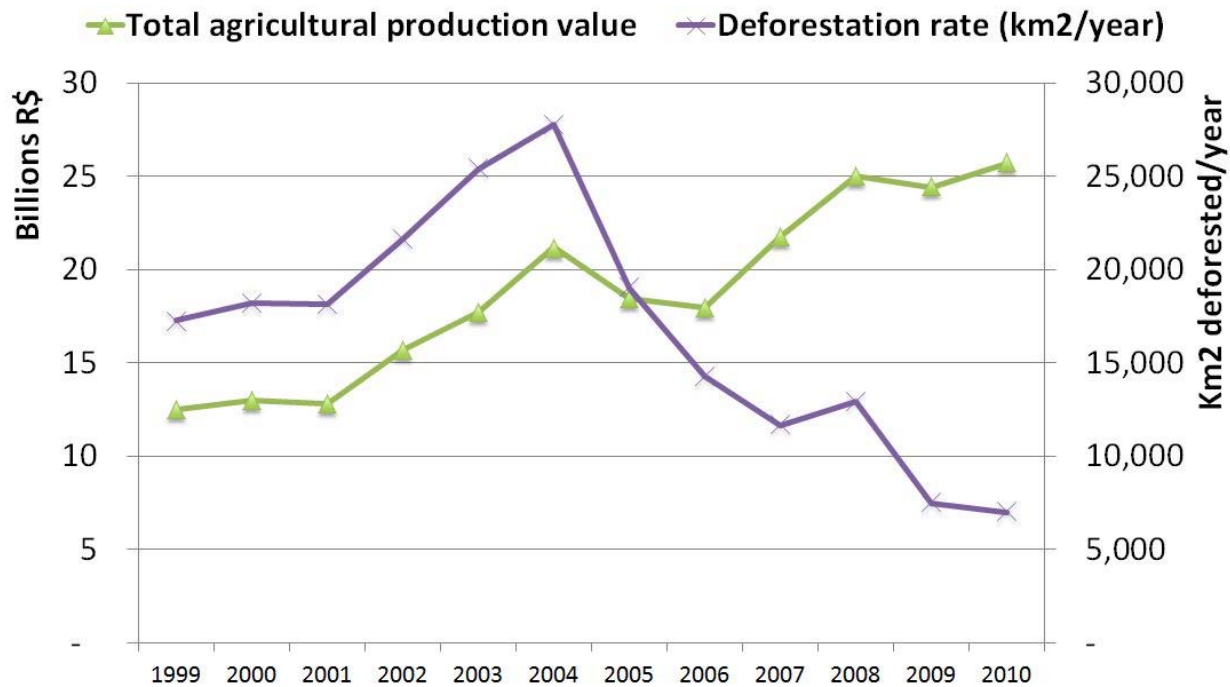


# EXAMPLES OF SECTOR POLICIES



# Avoiding Deforestation: Brazil

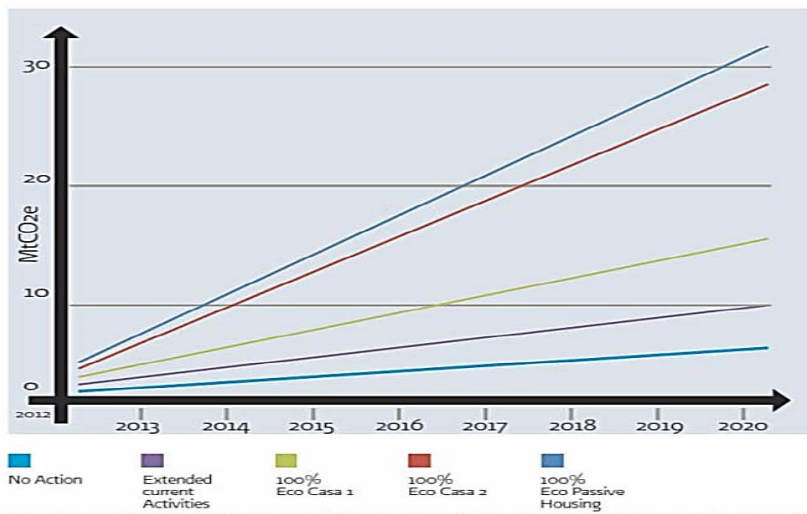
Economic growth and reduction of deforestation in recent years



# Sustainable Social Housing: Mexico



Figure 1: Emissions from newly built houses in Mexico and select mitigation Scenarios (MtCO<sub>2</sub>e)



## The Problem:

Housing sector represents 17% of total energy usage and 4.9% of CO<sub>2</sub> emissions in Mexico. The housing deficit is estimated in approximately 8.9 million homes — a number that increases annually by 200,000.

## Program Objective:

- Reduction of greenhouse emissions from the housing sector.
- Improvement of living conditions for low income families.

1.700 Green Mortgages

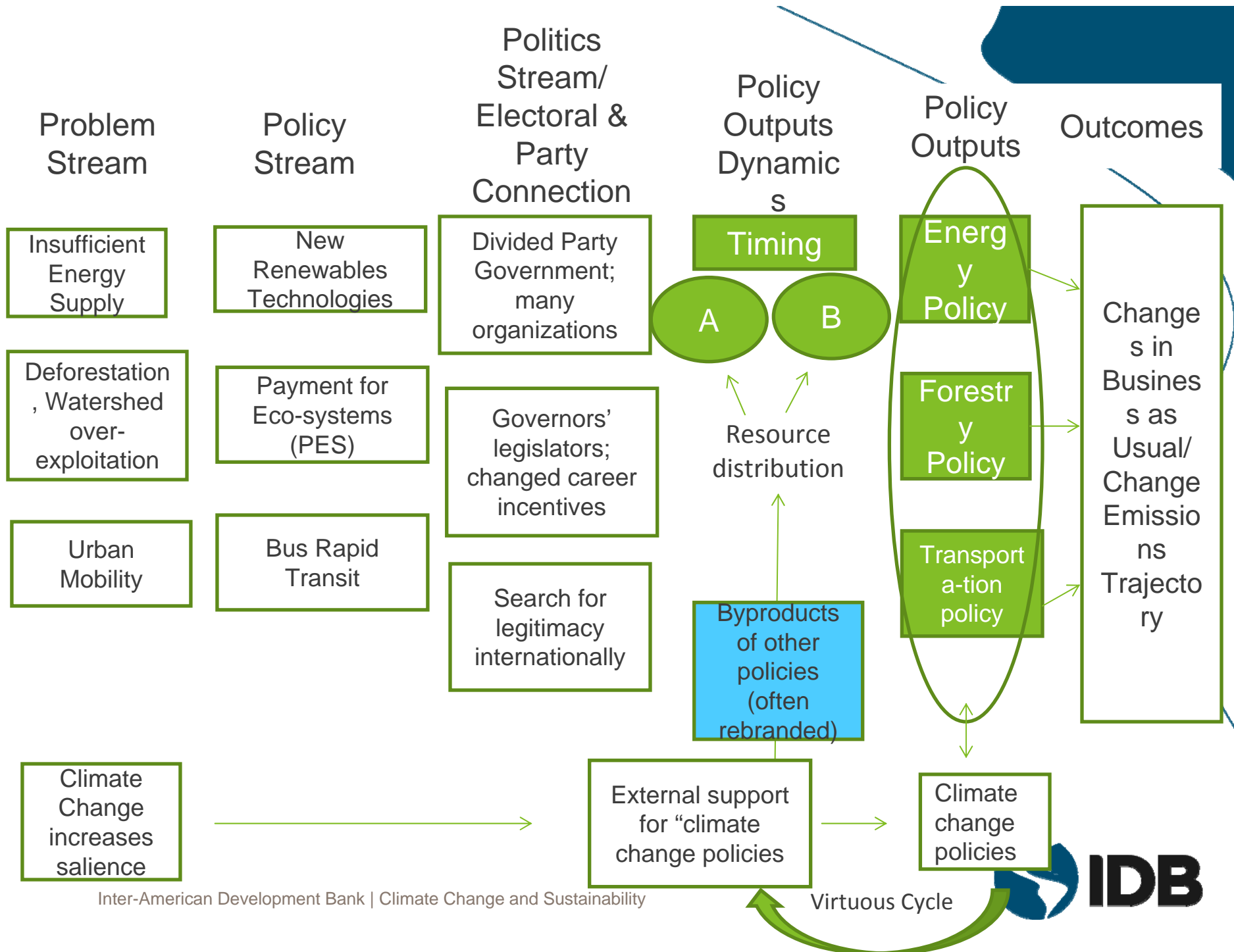
• Expected Mitigations Impact: 1 million tCO<sub>2</sub>e

• Improvement of comfort for households (20-25 °C average)



**WHY ARE WE  
STILL  
GROWING  
GHG? WHY  
ARE WE NOT  
READY?**





# Problems

- Plans, strategies, but not multi-stakeholders: lack of policy coherence
- Policies and Programs missing a holistic view of existing incentives
- International context creates unrealistic expectations
- lack of interest, lack of Execution

# CONCLUSIONS



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Let's talk about climate change and sustainability

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