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PRESENTATION ON ENVIRONMENTAL SUSTAINABILITY
THE WORLD BANK

Low Carbon, High Growth: Latin American Responses to Climate Change



January 14, 2009

Outline

- Consequences of climate change are already with us
- Significant risks of severe impacts in the future
- Why LAC should be part of the solution
- LAC has already made important contributions
- Priorities for LAC to become a bigger part of the solution
- International pre-conditions for LAC to play its role
- Summary of main findings

Significant climate change impacts on LAC are already observable

- Melting of Andean glaciers
 - Most low altitude glaciers will disappear within next 20 years
 - Severe impact on unique ecosystems (drying of *páramos*) and water supply
- Caribbean corals are bleaching and dying
 - 30% have already died since 1980s; they could all be dead by 2060
 - Large impact on biodiversity, fisheries, tourism, coastal protection
- Increased risk of natural disasters
 - Tenfold increase in hurricane damages in Mexico by 2025; three to fourfold increases in other Caribbean countries
 - Climate-related natural disasters (storms, droughts and floods) cost, on average, 0.6 percent of GDP in affected countries
- Increased mortality & morbidity from tropical diseases, for example dengue and malaria
 - From 400 to 800 cases of malaria/100,000 in Colombia (70s vs. 90s)

Threat of even more severe damages during the 21st century

- Warming threatens LAC's rich biodiversity
 - Mexico, for example, could lose up to 26% of mammals by 2050
- Amazon rainforest could shrink by 20–80% for 2-3°C warming
 - A possible 50% reduction in rainfall could trigger “savannization”
 - Impact on biodiversity and rainfall of whole hemisphere
- Some areas may face collapse in agricultural productivity
 - Reductions of 12% to 50% by 2100 in South America
 - Mexico: total loss of economic productivity in 30- 85% of farms (2100)
 - With impacts on world food supply (LAC is 12% of world exports)
- Increase in the number of people under water stress by 6 to 20 million by 2055
- Small islands in the Caribbean can suffer from multiple impacts
 - Natural disasters, sea level rise, agriculture yields, loss of corals, etc.
 - Losses could reach 7 to 18% of GDP by 2080

LAC *should* be part of the solution: to ensure global effectiveness and efficiency

- *Effectiveness*: to keep warming under 3°C, for example...
 - Even if rich countries reduce their GHG emissions to zero...
 - Up to 28% reduction in the per capita emissions of developing countries will still be needed by 2050

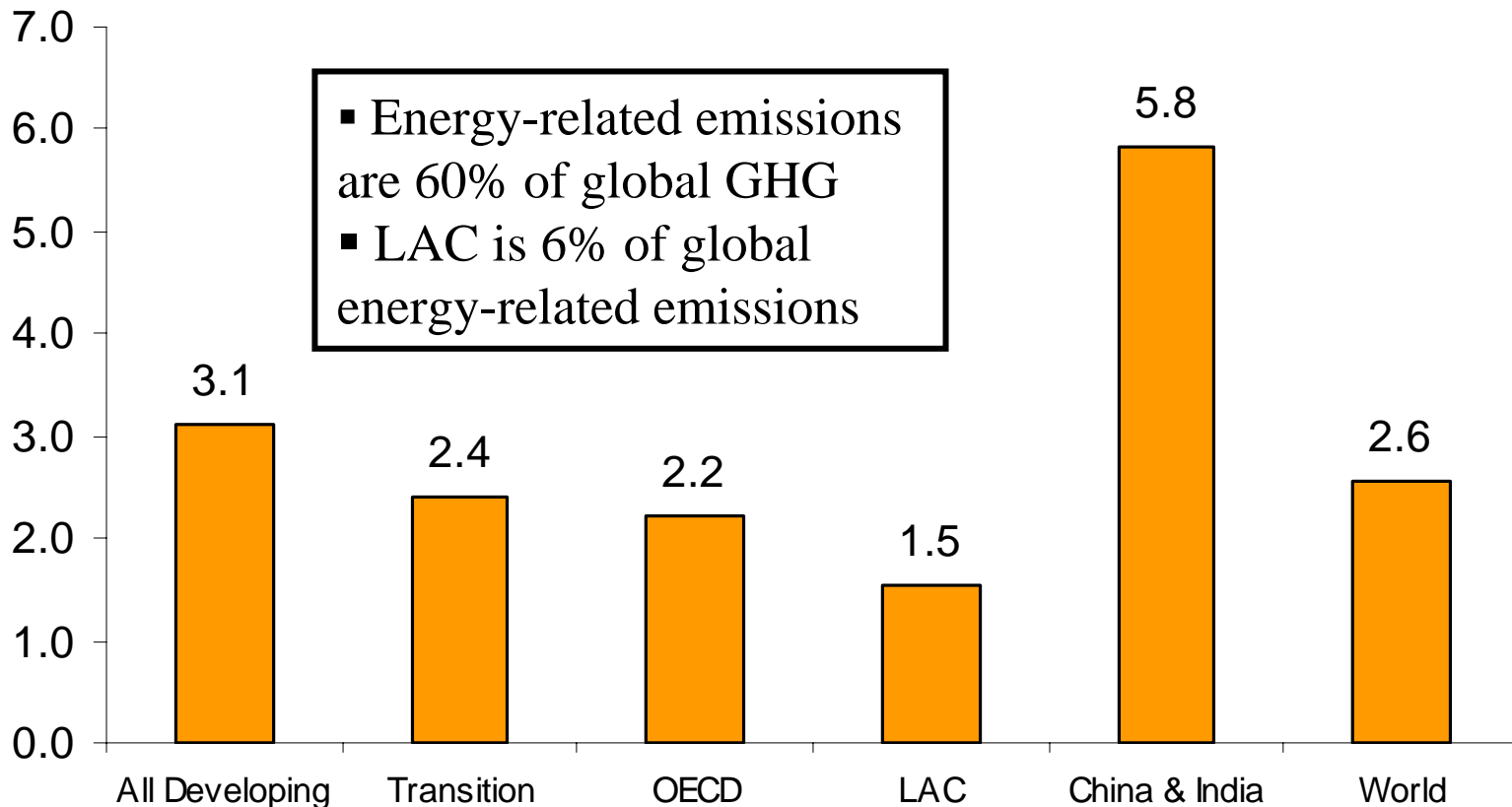
- *Efficiency* also requires developing country participation
 - Explore low cost mitigation options first
 - More than 50% of the options for emission reductions at carbon prices under US\$100/tCO₂e are in developing countries
 - Almost 70% in industry, agriculture, forestry

To some extent LAC *has already been* part of the solution...

- LAC's energy emissions are well below the world's average both in per capita terms and as fraction of the region's GDP ▶
- But, with business as usual, LAC is projected to shift to a higher carbon growth path ▶
- And although this is not necessarily surprising, beyond energy LAC emissions are higher than usually thought
 - Emissions from land use change
 - Non-CO2 emissions, mainly from agriculture ▶

LAC's low carbon growth: emissions intensity of energy is well below the world's average

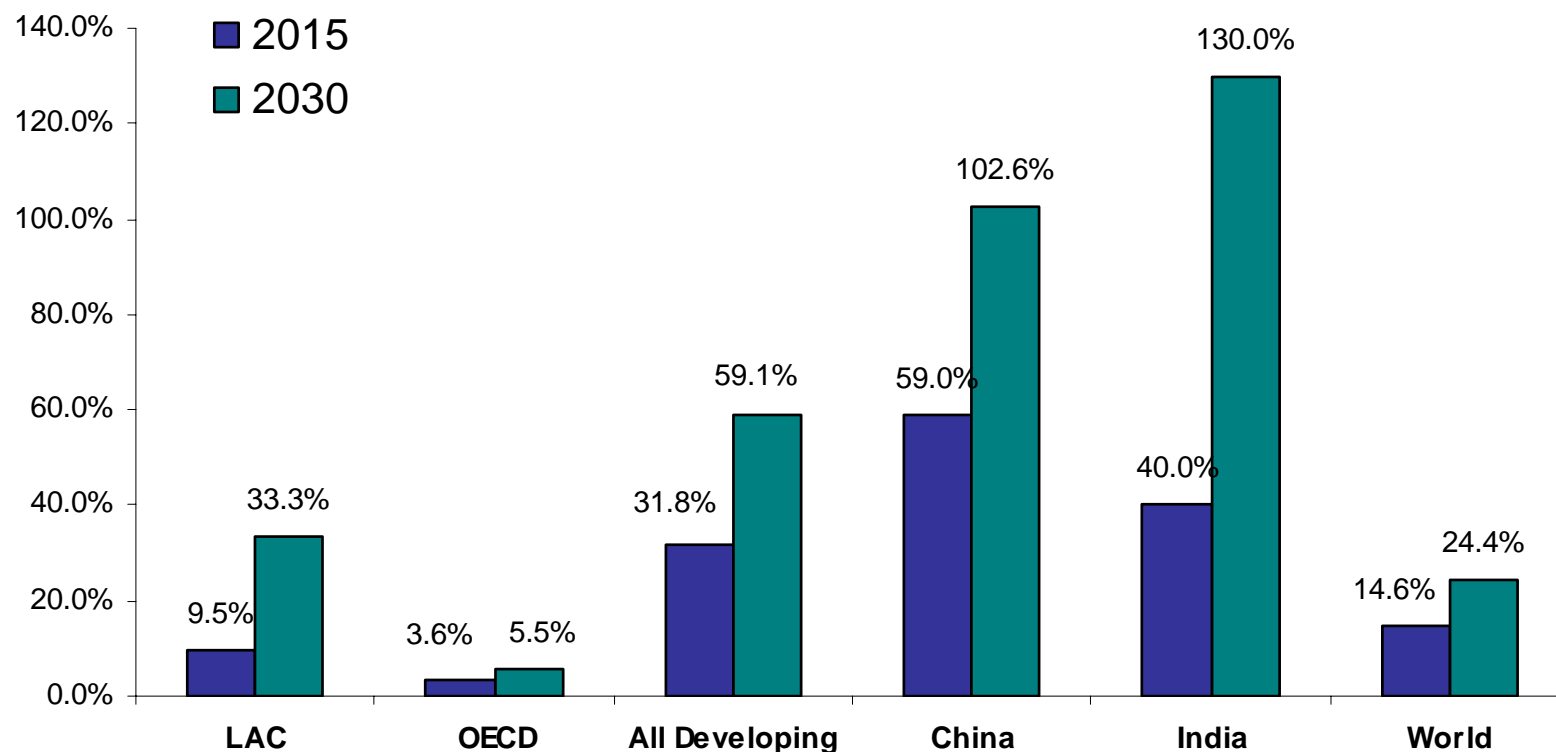
Carbon Intensity of Power (Mt CO₂/Mtoe), 2005



LAC's energy-related emissions to grow faster than the world average after 2015

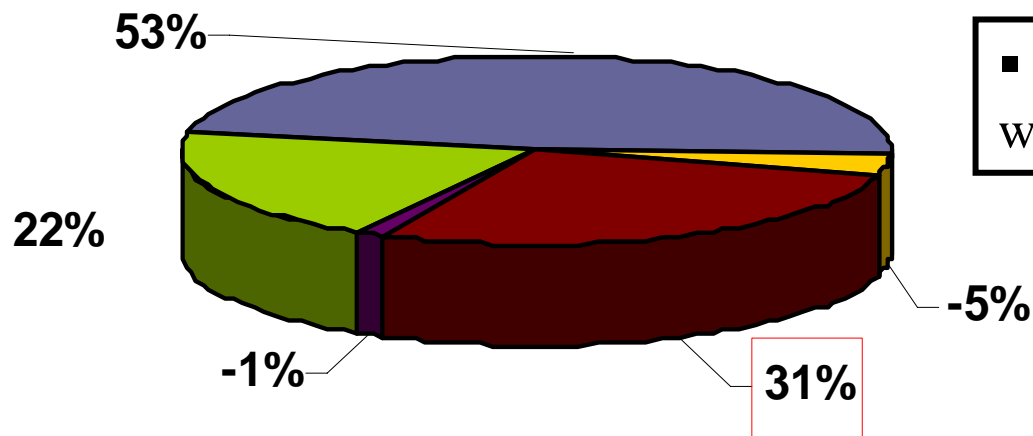


**Projected Growth in per capita CO2 Energy Emissions
(2005-2015 and 2005-2030; business as usual)**



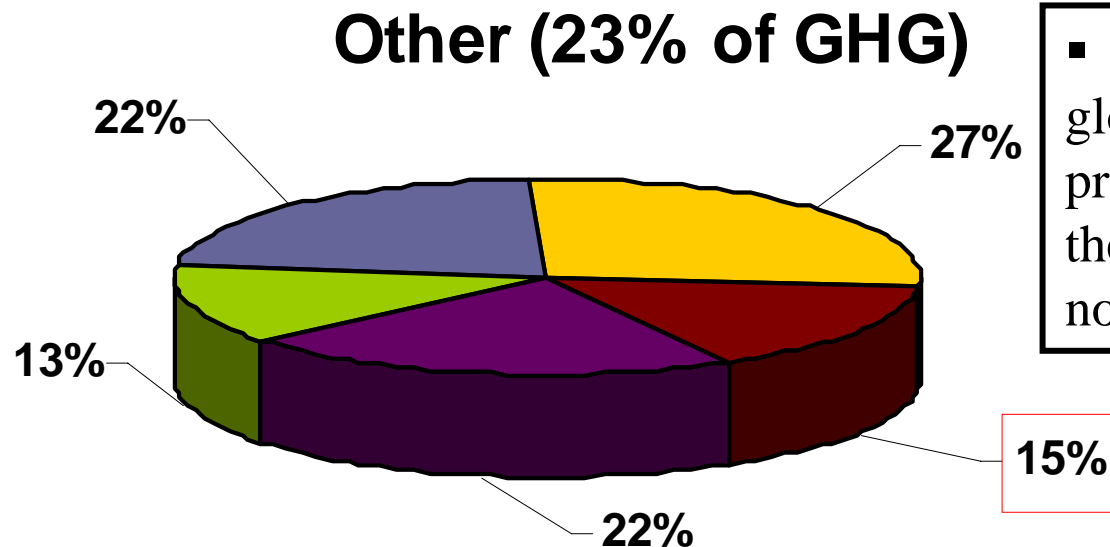
LAC emissions from land use change are understandably high

Land use change (18 % of GHG)



- Low Income
- Middle income (excluding LAC, China & India)
- High Income
- LAC
- China & India

LAC's non-CO2 emissions are also high, driven mainly by agriculture...

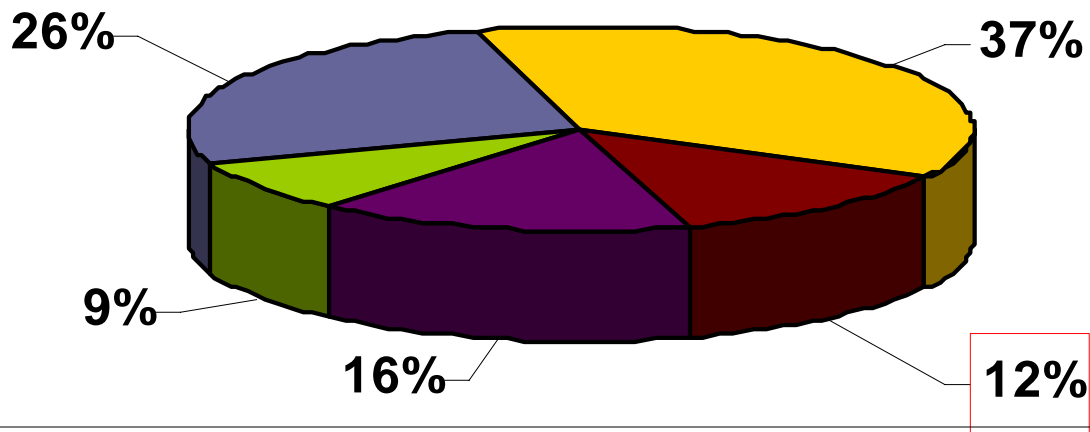


▪ LAC has 12% of global agricultural production, which is the source of most non-CO2 emissions

- Low Income
- Middle income (excluding LAC, China & India)
- High Income
- LAC
- China & India

All things considered...LAC has 12% of global GHG emissions...(vs. 6% of energy)

Total (100% of GHG)



- Low Income
- Middle income (excluding LAC, China & India)
- High Income
- LAC
- China & India

Priorities for LAC to be a bigger part of the solution, mostly with “no regrets” (I)

- Reduce emissions from deforestation
 - Avoid “tragedy of the commons” by assigning clear land ownership or management responsibility
 - Continue to take advantage of innovative financing instruments for forest conservation

- Avoid shift to “dirtier” energy sources, especially by taking advantage of low impact hydroelectricity
 - Consider hydro in light of global benefits of emission reductions
 - Make use of increased experience and better tools to avoid negative environmental and social impacts: e.g., *strategic* impact assessments
 - Intensify efforts to exploit other sources of renewable energy (e.g. wind)
 - Continue to take advantage of low cost and sustainable biofuels (taking into account direct and indirect land use change effects)

Priorities for LAC to be a bigger part of the solution, mostly with “no regrets” (II)

- Improve energy efficiency
 - Promote efficiency labeling, standards, information programs
 - Reduce level and improve targeting of fossil fuel subsidies
 - Design incentives for energy saving technologies, e.g., co-generation
 - Improve energy efficiency in the public sector
- Transform urban transport with integrated policy approach
 - Integrate policies for transport sector with urban planning
 - For example, through fostering dense urban development along main public transport corridors
 - Increase attractiveness of public and non-motorized transport relative to private automobiles
 - For ex., Bus Rapid and Rail Based transit systems, inter-modal integration
 - Improve fuel efficiency in private, public and freight transport
 - For ex., through new efficiency standards, low-carbon fuels, and programs to improve fleet maintenance and driver behavior

Adaptation will still be inevitable given inertia of climate system

- Many adaptation priorities are also “no-regrets”: increasing resiliency, flexibility and mobility of households also promotes growth and poverty reduction
 - Enhancing weather monitoring/forecasting improves risk management
 - Improving social protection programs can specifically help protect against weather shocks while providing general income support to poor households
 - Improving land and water markets will be necessary to use these resources better, but is also good development policy
- Some of LAC’s adaptation responses will take new investments to:
 - Maintain and protect ecosystems
 - Mitigate the effect of, and recover from natural disasters
 - Capture and store water, control floods
 - Strengthen public health systems
 - Continue evolution of agricultural research and extension

To play its role in reducing emissions, LAC needs the right international CC architecture

- Equity issues: no global deal without addressing them...
- Full participation by high-income countries essential
 - To establish leadership and perception of equity
 - To generate market for low-carbon technologies
 - To finance low carbon technology development and transfer
- A LAC friendly architecture would...
 - Fully incorporate emissions reductions from avoided deforestation and land degradation
 - Be friendly to development of sustainable hydropower
 - Have no or low trade barriers to sustainable biofuels
 - Expand carbon finance beyond project based CDM

Summary of Main Findings

- Negative climate change impacts are already observable in LAC and will become much more severe during the 21st century
- LAC is a small part of the problem: very low energy-related GHG emissions, one third of the world's forest biomass
- LAC can be an important part of the solution: keeping its energy matrix clean, avoiding deforestation, pursuing low carbon growth
- Many of the domestic policy actions needed for LAC to adapt to and mitigate climate change are good for development (“no regrets”)
- But for LAC to make a significant global contribution, a strong leadership by high income countries will be needed...
- Together with international support for climate-friendly policies in areas of LAC comparative advantage (forestry, hydros, biofuels)

END
