Climate resilience and low emission infrastructure in Latin America

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The successful implementation of the nationally determined contributions (NDCs) will lead to a more sustainable form of development.

Latin American countries: unconditional and conditional targets for GHG reductions, comparative scenario and high-priority sectors for mitigation and adaptation.
The economics of climate change: an overview of its impacts

Impacts of climate change on the Latin American and Caribbean region assuming a 2.5°C temperature increase, second half of the twenty-first century

(Percentages of regional GDP)

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<tbody>
<tr>
<td>Water supply</td>
<td>0.06</td>
<td>0.06</td>
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<tr>
<td>Health</td>
<td>0</td>
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<td>0</td>
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<td>Extreme weather events</td>
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<tr>
<td>Agriculture</td>
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<tr>
<td>Fisheries</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>Coastal areas</td>
<td>0.28</td>
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<td>0.28</td>
<td>0.28</td>
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<tr>
<td>Infrastructure</td>
<td>0.03</td>
<td>0.03</td>
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<td>0.03</td>
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<td>0.03</td>
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<tr>
<td>Total</td>
<td>0.37</td>
<td>0.37</td>
<td>0.37</td>
<td>0.37</td>
<td>0.37</td>
<td>0.37</td>
<td>0.37</td>
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**Source:** Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Bank, The Cost to Developing Countries of Adapting to Climate Change. New Methods and Estimates, Washington, D.C., June 2010.

**Note:**
- Figures on the impacts of climate change for Latin America given an increase in temperature of 2.5°C are taken from Bosello, Carraro and De Cian (2010). The data on impacts given in IDB/ECLAC/WWF are taken from Vergara and others (2013) and refer to the year 2050.

Latin America and the Caribbean: annual costs of adaptation, to 2050

(Percentages of regional GDP)

**Source:** Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Bank, The Cost to Developing Countries of Adapting to Climate Change. New Methods and Estimates, Washington, D.C., June 2010.

**Note:**
- NCAR: National Centre for Atmospheric Research (wettest scenario); CSIRO: Commonwealth Scientific and Industrial Research Organization (driest scenario).
- In the fisheries sector, the average range is between 0.18 and 0.36 (NCAR) and between 0.18 and 0.35 (CSIRO).
Public information, downloadable in.xls

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<tr>
<td>2</td>
<td>-5.008</td>
<td>-36.751</td>
<td>1,705</td>
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<tr>
<td>3</td>
<td>-5.089</td>
<td>-36.395</td>
<td>6,183</td>
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<tr>
<td>4</td>
<td>-5.1</td>
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<tr>
<td>5</td>
<td>-5.23</td>
<td>-35.507</td>
<td>10,336</td>
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<tr>
<td>6</td>
<td>-5.561</td>
<td>-35.262</td>
<td>22,548</td>
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<tr>
<td>7</td>
<td>-5.988</td>
<td>-35.135</td>
<td>21,531</td>
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<tr>
<td>8</td>
<td>-6.412</td>
<td>-35.023</td>
<td>21,531</td>
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<tr>
<td>9</td>
<td>-6.824</td>
<td>-34.895</td>
<td>25,939</td>
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<tr>
<td>10</td>
<td>-7.346</td>
<td>-34.816</td>
<td>25,939</td>
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In order to meet the challenge of adapting coastal infrastructure, environmental impact assessments will need to be reworked in order to take that factor into account. This effort will be more effective if it is coordinated at the regional level. The restoration of mangrove forests will play an important role in this connection.

Impacts of climate change on the region’s coastlines

Mean sea levels, 2010-2040 and 2040-2070

(Millimetres per year)

A. Mean rise in sea levels: 2010-2040

B. Mean rise in sea levels: 2040-2070

Impacts of climate change on the region’s coastlines

Distribution of the population in locations at elevations of between 0 and 3 metres above sea level
(Number of persons)

Population in locations at elevations of up to 1 metre above sea level
(Number of persons)

Information as a public good. Chile: schematic impacts of climate change.
Conclusions

• The long term sea level rise increases the exposure to coastal infrastructure, critical and non-critical populations. (ports, roads, ducts, lines of transmission, utilities, housing, schools, markets, hospitals), combined with floods and erosion in coastal areas.

• Sea temperature rise lead to more intense storms that include risks such as landslides and coastal flooding.

• Policies:
  – Officialize climate change scenarios, such as sea level rise, to use in the design of public infrastructure investment.
  – Officialize economic scenarios such as investment multipliers by type of infrastructure and avoided costs of preventive action.
  – Agree on definitions of low carbon infrastructure that may lead to Dynamic inclusion/exclusion lists for public and development Bank investment and classifications.
  – Adjust the environmental evaluations processes to incorporate the scenarios.
  – Increase the use of insurance for public and private infrastructures according to the scenarios.
  – Diminish future risk by including the social price of carbon and appropriate discount rates in the economic evaluation of public investment projects.
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Climate resilient and low emission infrastructure: mainstreaming climate risks in planning future infrastructure
Latin America & Caribbean Climate Week 2018
August 21, 2018, Montevideo, Uruguay
Global context: The impact of climate change will be felt by future generations and it is urgent to act now.

747 GT/CO2 Remnants in the carbon budget to 2018 to be below 2°C (2018 CO2 flow 36 Gt = <21 years)

Future possible without climate policies

My children

My grandchildren

max +2°C

Observed temperature

Cumulative emissions (Gt CO₂)

Source: ECLAC on the basis Weston (2013); Peters, et al., (2015); and Global Carbon Budget.