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# TACKLING CLIMATE CHANGE IN LATIN AMERICA

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**EKLA**

Regional Programme Energy  
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This article was originally published in Portuguese in *Cadernos Adenauer* 2/2016 - *Mudanças climáticas - o desafio do século* (Climate change - the challenge of the century. Konrad Adenauer Foundation, August 2016. ISBN: 978-85-7504-202-1). English translation: Grupo Language Link Eventos Ltda.

# Introduction

With a mostly urban population of approximately 635 million people, the region comprised by Latin America and the Caribbean (LAC) has been seeking gradual integration into global environmental issues, particularly in relation to the challenges of climate change. The city of Rio de Janeiro was the scene of two major historical events on global environment (Rio 92 and Rio +20). In 2014, a unique opportunity to reposition the region on the international agenda of environmental debates again emerged when Lima hosted the 20th Conference of the Parties to the UN Convention on Climate Change. Peruvian efforts were not limited to holding that COP, since alongside the French, they have been acknowledged as being extremely important to the successful completion of COP 21, showing important diplomatic skills that enabled the path to the Paris Agreement.

Comprised by 20 countries and 2 dependent territories<sup>1</sup>, Latin America has a vast and diverse territory that extends from Patagonia to Mexico. This territorial dimension results in the coexistence of countries with different levels of economic development and, consequently, an uneven participation in the emission levels of greenhouse gases (GHG). Brazil and Mexico, for instance, represent, together, more than half of the region's total emissions<sup>2</sup>.

This article has the challenging goal of presenting an overview of climate change in LAC. Obviously it is impossible to cover here the entire region and its position on a subject of such complexity. Therefore, this work focus on general trends perceived in the region, and highlights the Brazilian and Mexican circumstances as the largest GHG emitters in LAC. Some topics were chosen as priority to better understand the regional scenario, highlighting LAC's vulnerability and the importance of adaptation and funding measures. Citizen awareness on the issue and the manifested political response are also matters of interest in this work, as well as the current advances in multilateral negotiations and the regional integration on energy. After analysing the regional outlook regarding climate change, there was an effort to check key aspects of the discussion and to elaborate policy recommendations for the advancement of the struggle against this global challenge in the region.

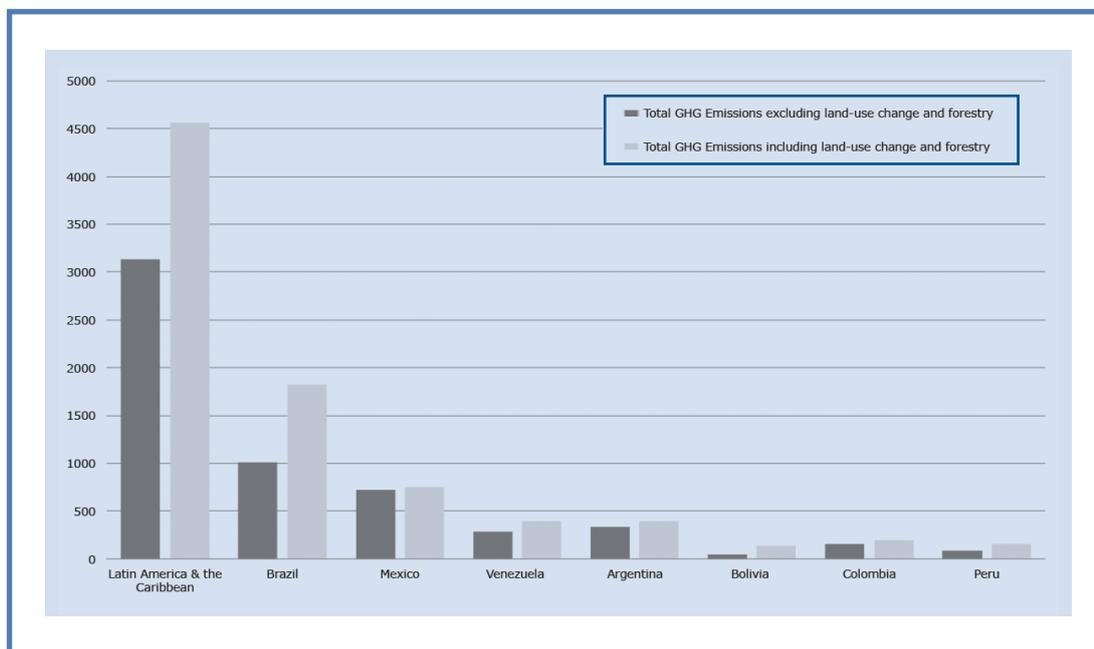
1 Countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, El Salvador, Ecuador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Dominican Republic, Uruguay and Venezuela. Dependent Territories: French Guiana and Puerto Rico.

2 CEPAL, 2010. *Gráficos Vitales del Cambio Climático para América Latina y el Caribe*. GALINDO, L.M. Available at: [http://www.cepal.org/publicaciones/xml/8/51998/LAC\\_Web\\_esp\\_2010-12-02.pdf](http://www.cepal.org/publicaciones/xml/8/51998/LAC_Web_esp_2010-12-02.pdf)

## Vulnerability and Awareness

Although the region accounts for merely 13% of global GHG emissions<sup>3</sup>, Latin America and the Caribbean are among the world's most vulnerable regions to climate change as pointed out in recent studies by the United Nations Economic Commission for Latin America and the Caribbean (ECLAC)<sup>4</sup> and the World Bank<sup>5</sup>. Consequently, their greatest challenge is to adapt to climate change. This first section is dedicated to an outlook of Latin American vulnerability and the challenges of climate change adaptation.

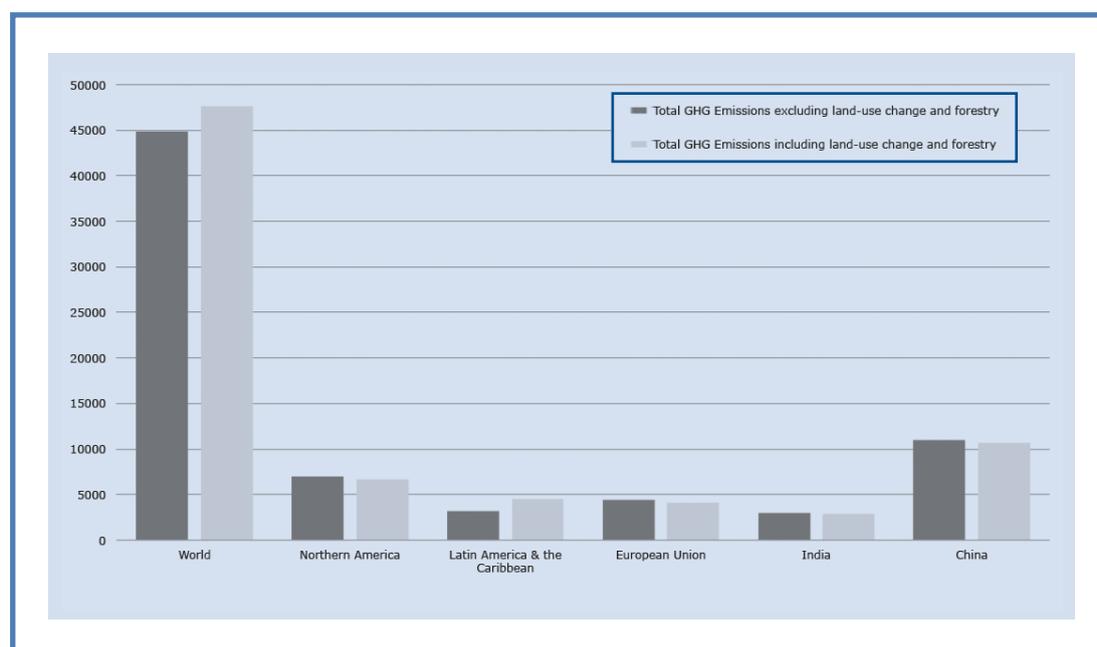
### Share of greenhouse gas emissions of Latin America and the Caribbean, 2012 (MtCO<sub>2</sub>e)



Source: EKLA-KAS on the basis of Climate Analysis Indicators Tool (CAIT)

- 3 Noteworthy are the GHG emissions coming from agriculture (crops and livestock), which have doubled in the past 50 years and will continue to rise if a greater effort to reduce emissions is not carried out, as stated by the United Nations Food and Agriculture Organization (FAO). LAC is the second region in agricultural global emissions, accounting for 17% of the total. It is surpassed only by Asia (44%). In third is Africa (15%), followed by Europe (12%) and North America (8%). FAO, News: *A América Latina duplicou as emissões agrícolas de gases do efeito estufa nos últimos 50 anos* <https://www.fao.org.br/aALdeageeu50a.asp>
- 4 NU. CEPAL, *Cambio climático y desarrollo en América Latina y el Caribe: una reseña* – SAMANIEGO, J; (Coord.), Available at [http://repositorio.cepal.org/bitstream/handle/11362/3640/S2009028\\_es.pdf?sequence=1](http://repositorio.cepal.org/bitstream/handle/11362/3640/S2009028_es.pdf?sequence=1)
- 5 World Bank, *Desarrollo con menos Carbono: Respuestas latinoamericanas al desafío del cambio climático. Síntesis*. DE LA TORRE, A.; FAJNZYLBER, P.; NASH, J. Available at: [http://siteresources.worldbank.org/INTLACINSPANISH/Resources/17920\\_LowCarbonHighGrowth\\_Spanish.pdf](http://siteresources.worldbank.org/INTLACINSPANISH/Resources/17920_LowCarbonHighGrowth_Spanish.pdf)

## Share of world greenhouse gas emissions, 2012 (MtCO<sub>2</sub>e)



Source: EKLA-KAS on the basis of Climate Analysis Indicators Tool (CAIT)

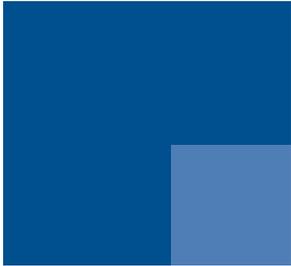
Among the main explanations for this significant vulnerability is the strong dependence on the Andean thaw for water supply for urban and agricultural sectors. The Intergovernmental Panel on Climate Change (IPCC) has singled out the importance of mountain glaciers as sensitive indicators for climate change. The Andean glaciers are in danger and Bolivia is one of the countries that suffer most from the melting of its glaciers. Large cities like La Paz will face problems of water scarcity as the glaciers account for up to 15% of the city's yearly water supply; Glacier Chacaltaya in Bolivia has virtually disappeared. In Peru, the population from the Rio Santa valley, considered as one that may be most affected is also threatened because it depends on glacial water for agriculture, domestic consumption and hydropower<sup>6</sup>.

Therefore, vulnerability also refers to the importance of the agricultural and livestock sectors to the region's countries, representing, on average, 6% of the GDP<sup>7</sup>. These are activities highly dependent on climatic factors such as temperature, rainfall, soil moisture and solar radiation. Subject to drought and floods, this situation hampers the achievement of poverty reduction targets and improved economic growth in the region.

Another relevant reason is the large number of cities located in coastal areas,

6 BBC Brasil, *Geleiras dos Andes derretem a ritmo mais rápido em 300 anos*. Article based on results of research carried out by the Glaciology and Geophysics Laboratory of Environmental Grenoble, France. Available in [http://www.bbc.com/portuguese/noticias/2013/01/130123\\_geleira\\_andes\\_bg.shtml](http://www.bbc.com/portuguese/noticias/2013/01/130123_geleira_andes_bg.shtml)

7 CEPAL, *Evolución y distribución del ingreso agrícola en América Latina: evidencia a partir de cuentas nacionales y encuestas de hogares*, VALDÉS, A.; FOSTER, W.; PÉREZ, R.; RIVERA, R. Available in [http://www.cepal.org/publicaciones/xml/7/41537/lcw.338\\_valdezetal.pdf](http://www.cepal.org/publicaciones/xml/7/41537/lcw.338_valdezetal.pdf)



where over 70% of the Latin American population lives, further intensifying this vulnerability to climate change. According to the ECLAC, the most vulnerable countries by the presence of linear infrastructure on the coast are Mexico, Brazil, Cuba, Bahamas and Argentina<sup>8</sup>. In terms of affected population, an increase of 1 metre in sea level could have great impact on Brazil's coast with major consequences for large urban clusters. Other coastal areas would also be affected, mainly East Caribbean islands and large parts of Mexico, particularly the East coast and several areas in Peru and Ecuador, as well as areas with a high concentration of people in Chile<sup>9</sup>. In a survey conducted by the State University of Campinas (Unicamp), São Paulo state's North coast, for example, due to its very own ecological characteristics, appears very sensitive to any climate change issue, such as heavy rain. With the increase in population in this area, due mainly to jobs in the oil sector, the infrastructure of coastal cities in the state of São Paulo remains imperilled and could become even more fragile in face of accidents and natural disasters such as landslides and flooding<sup>10</sup>.

The change in the rainfall regime caused by climate change results in scarcity of drinking water in LAC, and droughts represent a serious threat to energy supply security due to the significance of power generation by hydropower plants. A prominent example is the low water levels registered particularly in the Cantareira System of Reservoirs, the largest of the systems administered by SABESP (São Paulo state's water utility) and one of the largest in the world, collecting and treating water for 8.8 million consumers in the Greater São Paulo region<sup>11</sup>. In 2014, due to water scarcity, which plagued South-eastern Brazil, the so-called "Dead Volume" was used, initially adding 18.5% (182.5 billion litres) to the Cantareira System's level, which, at the time, was 8.2%. Later, with the continuous drop due to the prolonged drought, another portion of the Dead Volume was used, adding 10.7% (105.4 billion litres) to the system, elevating its level from 2.9% to 13.6%<sup>12</sup>. Water scarcity represents a challenge for the Brazilian Federal Government's planning and also for local governments given the overall absence of emergency plans for dealing with crisis situations, besides highlighting the failure of the reservoir structure, which was built in the 1970s, to serve a population that nearly doubled during this period of time, among other known urban challenges such as urbanization, pollution, verticalization, soil sealing, lack of planning and overload of the water supply system.

Furthermore, the Amazon illustrates the scale of the impact of climate change to the region. The Amazon is a vital component of the Earth's system – it contains the greatest diversity of terrestrial organisms on the planet, it exchanges large volumes of water and energy with the atmosphere, it affects local and regional climate as well as being an important reservoir for carbon. If properly fitted, the Amazon's hydrological mechanism plays a key role in maintaining global and regional climate.

8 ONU, CEPAL y Universidad de Cantabria, Instituto de Hidráulica Ambiental. *Efectos del cambio climático en la costa de América Latina y el Caribe: vulnerabilidad y exposición*. Available at [http://repositorio.cepal.org/bitstream/handle/11362/3982/S2012024\\_es.pdf?sequence=1](http://repositorio.cepal.org/bitstream/handle/11362/3982/S2012024_es.pdf?sequence=1)

9 ONU, CEPAL y Universidad de Cantabria, Instituto de Hidráulica Ambiental. *Efectos del cambio climático en la costa de América Latina y el Caribe: impactos*. Available at [http://repositorio.cepal.org/bitstream/handle/11362/4003/S2012065\\_es.pdf?sequence=1](http://repositorio.cepal.org/bitstream/handle/11362/4003/S2012065_es.pdf?sequence=1)

10 Research conducted by the Center for Environmental Research (NEPAM) of the State University of Campinas (Unicamp). Information available in <http://www.bv.fapesp.br/namidia/noticia/41798/mudancas-climaticas-aumento-populacional-podem/>

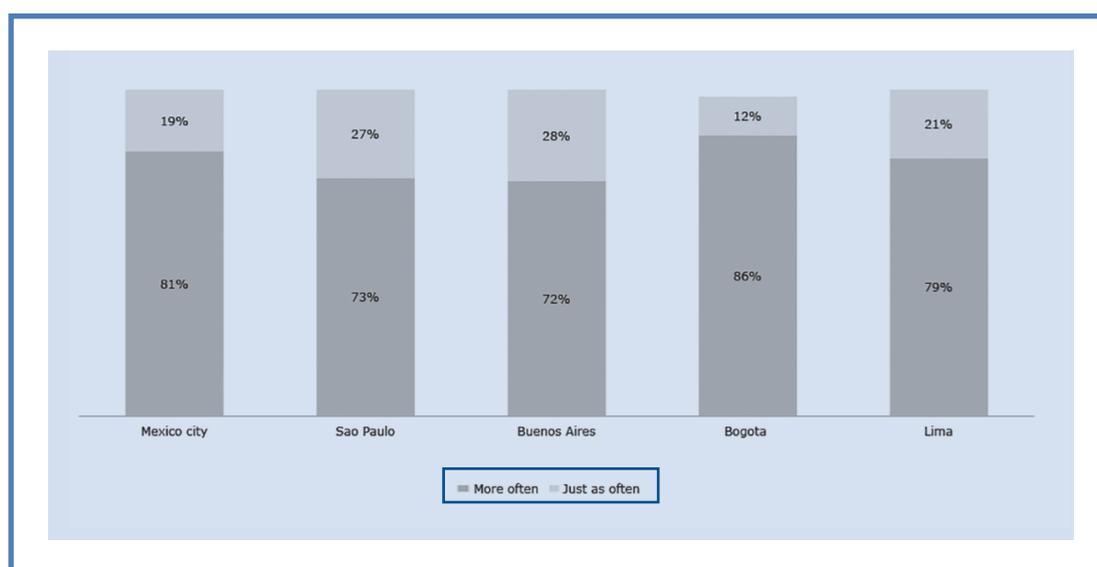
11 Information available in <http://www.sabesp.com.br/CalandraWeb/CalandraRedirect/?temp=4&proj=sabesp&pub=T&db=&docid=6A19383E7EB1579E832571EA0068ABA0>

12 Information available in <http://www.apolo11.com/reservatorios.php>

However, an intense alteration of the Amazon's rainfall regime is expected and the droughts of 2005 and 2010, which killed trees and increased carbon emissions, are an example of that. This scenario depicts that the Amazon has been submitted to both the increasing environmental pressures of anthropogenic origin in recent decades - deforestation and forest fires - as the pressures resulting from global warming<sup>13</sup>, which will affect water availability, biodiversity, agriculture and human health.

In this scenario, Latin Americans are suffering from the results of extreme weather events that have become more frequent. A survey conducted by the Inter-American Development Bank (IDB) in five large cities in Latin America - Buenos Aires, Bogota, Mexico City, Lima and São Paulo, concluded that, on average, 78% of respondents in all five cities believe that extreme weather events (floods, heat waves, cold waves, storms, etc.) occur more frequently than before<sup>14</sup>.

### How often extreme weather events occur?



Source: Inter-American Development Bank (IDB), 2014,

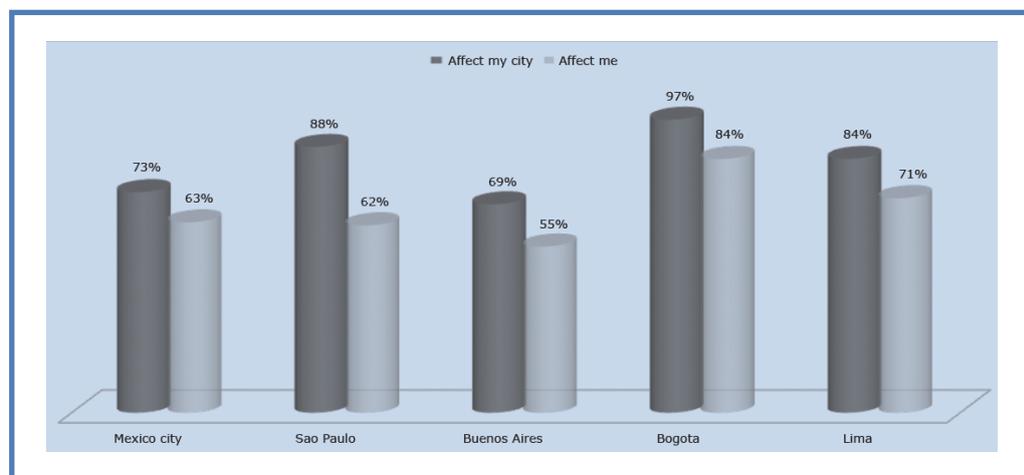
This challenging scenario makes issues associated to climate change increasingly

13 NOBRE, C., SAMPAIO, G., SALAZAR, L. *Mudanças Climáticas e Amazônia*. Available at <http://cienciaecultura.bvs.br/pdf/cic/v59n3/a12v59n3.pdf>

14 Inter-American Development Bank (IDB), 2014 *Megacities and infrastructure in Latin America: what the population believes*. At the end of 2013, the Inter-American Development Bank (IDB) conducted a survey in five cities in Latin America - Buenos Aires, Bogota, Mexico City, Lima and São Paulo - to know the perception of citizens about the quality of life, the urban infrastructure and public services standards and needs. - Available in <https://publications.iadb.org/handle/11319/6415?locale-attribute=es#sthash.y8uA43XI.dpuf>

more present in regional media, which reflects the Latin Americans great concern about the subject when compared to the rest of the world. A poll conducted by Gallup in 2010 stated that Latin Americans, who were already among the most aware of climate change and the most likely to see global warming as a personal threat, became even more aware and more concerned: 77% of Latin Americans claim to know at least something about climate change and nearly the same amount see it as a personal threat (73%)<sup>15</sup>. According to an IDB opinion survey conducted in the cities mentioned above, 81% of respondents consider that climate change affects their cities directly, a surprising result due to its high percentage.

### Does climate change affect you? And does it affect your city?



Source: Inter-American Development Bank (IDB), 2014

Concern about climate change, however, has not yet become effective pressure on the political classes, particularly because the subject remains relatively marginal in electoral campaigns. Sustainable development, for example, did not take a central role in the 2014 Brazilian electoral campaign. Despite popular demonstrations in Brazil in 2013, topics such as corruption and political reform still prevail in the agenda and less attention is given to environmental issues. Still according to the IDB survey, only in Mexico City and Bogota do citizens perceive climate change as one of the five main problems affecting their quality of life; security and transparency are still the main concerns in Latin American societies.

	Mexico city	Sao Paulo	Buenos Aires	Bogota	Lima		
1	Security	Transparency	Security	Security	Security	1	Top 5
2	Transparency	Participation	Inequality	Transparency	Transparency	2	
3	Bureaucracy	Security	Transport	Transport	Transport	3	
4	Participation	Transport	Transparency	Noise	Participation	4	
5	<b>Climate change</b>	Burocracy	Health	<b>Climate change</b>	Health	5	
6	<b>Heavy rains</b>	Health	Bureaucracy	Participation	Bureaucracy	6	

Source: Inter-American Development Bank (IDB), 2014

<sup>15</sup> Pugliese, A; Ray, J. *Fewer Americans, Europeans View Global Warming as a Threat*. Available at <http://www.gallup.com/poll/147203/fewer-americans-europeans-view-global-warming-threat.aspx>

As a result, the region presents an insufficient political capacity with regards to tackling climate change. According to UNEP's report presented in the context of the Rio+20<sup>16</sup> Conference, LAC's major problems are lack of political will, limited procedural continuity derived from short-term mandates and inadequate instruments to ensure effective law enforcement. In addition, implementation schedules for political programmes and projects do not always coincide with the duration of political mandates. These are primary issues that national governments have to cope with in order to improve climate governance in Latin America.

Despite the challenges of national climate governance, and since the adverse effects of climate change are already evident in the region, LAC also mobilizes itself both internationally and regionally to address the climate change challenges. LAC's performance in these two institutional levels is complementary to climate governance advances that Latin American countries seek at the national level. We propose, therefore, an analysis of the role of LAC in international negotiations and the regional integration efforts, as positive examples of mechanisms to tackle climate change.



## **Climate policy: INDCs, adaptation and finance**

The analysis of recent developments under the United Nations Framework Convention on Climate Change (UNFCCC) is important to understand the international position of LAC and the impacts of such negotiations on such a vulnerable region.

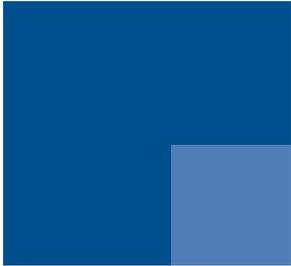
First of all, LAC is not represented as a single block in the multilateral climate negotiations. On the contrary, there are several Latin American groups with divergent proposals such as ALBA (the Bolivarian Alliance for the People of Our America, composed by Bolivia, Ecuador, Cuba, Nicaragua and Venezuela) and AILAC (the Independent Association of Latin America and the Caribbean, with Chile, Costa Rica, Colombia, Guatemala, Panama, Peru and Paraguay). While ALBA members emphasize industrialized countries' responsibility for global warming, AILAC presents itself as a "third way" within the North-South discussion, declaring that countries do not have to dismantle existing environmental legislation or weaken incipient climate policies in order to ensure prosperity. For AILAC, governments should not perceive the fight against climate change and the support for economic growth as conflicting goals<sup>17</sup>.

In addition to not been represented as a single block in climate negotiations, the participation of LAC countries is uneven. Countries like Brazil have a more prominent participation, which is supported by the efficiency of climate measures adopted nationally. Among others, the success of its policy of reducing GHG emissions caused by deforestation<sup>18</sup> guarantees the Brazilian presence in various leading groups of multilateral climate negotiations. Brazil, for example, is part of BASIC alongside South Africa, India and China, a group that was born amidst the 2009 United Nations Conference on Climate Change in Copenhagen (COP

16 UNEP, *Global Environmental Outlook 5. Summary for Latin America and the Caribbean: On the Eve of Rio+20*. Available at [http://www.unep.org/geo/pdfs/geo5/RS\\_LatinAmerica\\_en.pdf](http://www.unep.org/geo/pdfs/geo5/RS_LatinAmerica_en.pdf)

17 Information available at <http://ailac.org/en/tackling-climate-change-in-latin-america/>

18 Reduction of GHG emissions by 41% from 2005 to 2012.



15), and that was successful in inserting the wording that ensured that global warming remain below 2 degrees Celsius, tending to 1.5 degree Celsius by 2100 in the Paris Agreements text. Brazil was also successful in inserting in the Paris agreement its proposal of “concentric differentiation<sup>19</sup>” presented during COP 20. This mechanism allows for every country to collaborate in the effort towards the target of limiting temperature rises.

Regarding the contribution of all countries party to the Convention, in preparation for the COP 21, participating countries agreed to outline in advance and publicly which were there Intended Nationally Determined Contributions (INDCs) that reflect each country’s ambitions for reducing domestic emissions. In February 2016, 161 INDCs were submitted to the UNFCCC<sup>20</sup>, representing 188 countries, covering 98.7% of global emissions in 2010<sup>21</sup> and 98% of the world’s population<sup>22</sup>. In regard to INDCs, Latin America established positive precedents in the global effort to tackle climate change.

Latin American nations explicitly presented traditional development priorities such as maintaining economic growth and improving life conditions for the nearly 25% of Latin Americans who live under the poverty line. But what was added is that the only way to achieve this development in the 21<sup>st</sup> century is by predicting climatic impacts and planning a response<sup>23</sup>. INDCs proposals by LAC countries included adaptation and mitigation measures. Mexico, accounting for 1.4% of global emissions and ranked among the 10 largest emitters in the world, was the first developing country to announce its INDC<sup>24</sup>. Mexico presented a goal to reduce its emissions of GHG (including carbon black) by 25%, in relation to what is estimated it would emit in 2030 if nothing were done. Brazil, in turn, presented a proposal to reduce by 37% in 2025 in relation to 2005. Brazil also proposed to achieve a share of 45% of renewable energy sources (including hydropower plants) in its total energy mix in 2030.

Transparency and the participation of civil society in these processes are noteworthy. In Mexico, during the proposal’s preparation, discussions on the INDC were organized including civil society participation and an online public survey. In Brazil, the Ministry of Foreign Relations organized public meetings with civil society and developed and online questionnaire. And Chile adopted the participatory strategy of an open survey about specific options for reducing emissions that were submitted to public critique.

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19 The so called “concentric differentiation” proposal consists of a series of three circles, the innermost of which should be occupied by developed countries with absolute, economy-wide targets; the middle one, by emerging economies, with intensity, per capita or relative reduction targets; and the outer circle, by other developing countries, with non-economy-wide targets. Every country should move towards the centre in time, according to its respective capabilities.

20 Information available at <http://www4.unfccc.int/submissions/indc/Submission%20Pages/submissions.aspx>

21 Information available at <http://cait.wri.org/indc/>

22 Information available at <http://climateactiontracker.org/indcs.html>

23 ORTIZ, D. *América Latina apuesta por adaptación en sus INDC*. Available at <http://www.nivela.org/articulos/america-latina-apuesta-por-adaptaci-n-en-sus-indc/es>

24 Observatório do Clima: *A América Latina será líder no caminho a Paris?* <http://www.observatoriodoclima.eco.br/a-america-latina-sera-lider-no-caminho-a-paris/>



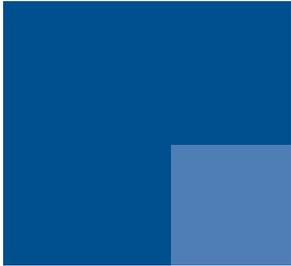
Countries that have submitted their INDCs by 18th February, 2015. Source: CAIT Climate Data Explorer.

According to an analysis published by *The Climate Action Tracker (CAT)*, both the Mexican INDC and the Brazilian INDC were considered “average”, which means that, by the adopted classification, contributions at this level would be at the 2 degree goal’s strict minimum and that if all governments adopted such a mild position, warming would probably exceed the 2-degree target. Chile, in turn, was classified as “inadequate” because its goal to reduce emissions by 30% below 2007 is equivalent to 222% higher emissions than 1990 and 75% higher than 2010, i.e., the Chilean proposal is less ambitious than the 2-degree goal. Costa Rica, on the other hand, put a target to keep net GHG emissions below 9.37 MtCO<sub>2e</sub> in 2030 and was classified “sufficient” because this proposal would mean a reduction to 2010 levels in 2030<sup>25</sup>.

Some of the paradigms established in Paris are related to the idea of a progressive agreement since countries cannot backtrack on commitments already presented. The implementation of a transparent system to ascertain compliance that takes into consideration the ensured flexibility for developing countries becomes imperative. Commitment evaluation cycles are planned every 5 years as of 2023. In this sense, if 2015 was the year of negotiations, 2016 is the key year for implementation and action. The first step is the subscription scheduled for April 2016 at the UN headquarters in New York, followed by ratification by countries and domestic negotiations in parliaments, where appropriate according to each country’s legal procedures.

Due to Latin American vulnerability to climate change, adaptation is an utmost concern and this is also reflected in its international position. Adaptation, however, faces the challenges of financing. In the COP 21 negotiations, Latin America declared itself in favour of channelling funding and technology from developing countries to support the region in addressing climate change and complying with the global

<sup>25</sup> Information available at <http://climateactiontracker.org/indcs.html>



warming limit established between 1.5°C and 2°C in the Paris Agreement. The main multilateral mechanisms available to catalyse and mobilize climate funding are the Green Climate Fund (GCF) and the Global Environmental Fund (GEF). In Cancun in 2010 (COP 16) it was agreed that developed countries should jointly mobilize US\$ 100 billion annually by 2020 through the GCF. Despite the increase in commitments, the international financial crisis affected expectations and, in 2015, country contributions totalled merely US\$ 10.2 billion<sup>26</sup>. The fund's resources must be balanced and equally divided for investments in mitigation and adaptation, with at least 50% of adaptation funds destined to most vulnerable countries, including Least Developed Countries (LDC), Small Island Developing States (SIDS) and African countries.

During COP 21, the GCF presented its first class projects, particularly several that will be implemented in LAC. Peru became the first country to receive capital from the GCF for a project to be executed by the PROFONANPE (Peruvian Trust Fund for National Parks and Protected Areas). The project is aimed at promoting climatic resilience and livelihoods for indigenous communities in the wetlands of the Peruvian province of Datem del Marañón, in the Amazon basin, while, at the same time, seeking to reduce GHG emissions derived from deforestation. The project's duration is 5 years with total investments of US\$ 9.11 million, of which 6.24 are from the GCF and the rest is co-funding between the Korean government and the PROFONANPE<sup>27</sup>. There is also a project to be executed by the IDB for Latin America and the Caribbean to provide an alternative source of financing for energy efficiency projects through the use of green bonds. Four countries in the region will participate in the initial phase, of which two are small island developing states: Colombia, Dominican Republic, Jamaica and Mexico, the latter in the pilot project situation.

The GEF, on the other hand, has already more than two decades of experience in safeguarding the global environment. It was established on the eve of the 1992 Rio Earth Summit and since then, the GEF has provided \$14.5 billion in grants and mobilized \$75.4 billion in additional financing for almost 4,000 projects. The GEF has become an international partner of 183 countries, international institutions, civil society organizations, and private sector and, among its implementing partners are the Development Bank of Latin America (CAF), the Brazilian Biodiversity Fund (FUNBIO) and the Inter-American Development Bank (IDB)<sup>28</sup>. Among some of its major regional flagship initiatives in adaptation, it is important to highlight the project on the Glacier Retreat in the Tropical Andes that started in 2008. As noticed above, strong dependence on the Andean thaw for water supply for urban and agricultural sectors is one of the main reasons for Latin American vulnerability to climate change. This project includes a GEF Grant of around US\$ 9 million and co-financing of more than US\$ 25 million. World Bank is the GEF Agency and through the implementation of specific pilot adaptation activities, the goal is to the strength local ecosystems and economies to the impacts of glacier retreat in Bolivia, Ecuador and Peru.

<sup>26</sup> <http://www.gip.net.br/novo/brics-financiamento-climatico-e-os-compromissos-do-indc/>

<sup>27</sup> Information available at <http://www.greenclimate.fund/documents/20182/77885/GCF+-+Project+Fact+Sheets+-+web-ready.pdf/4435ff1f-a3e2-42a7-bab2-8c8aa5115f9d>

<sup>28</sup> Information available at <https://www.thegef.org/gef/whatisgef>

In addition to the conventional mechanisms, governments and financial institutions have created parallel systems, according to an ECLAC study that quantifies the current and potential climate financing in the medium term in LAC<sup>29</sup>. According to it, there are three main groups of climate finance actors: those operating in the framework of the UN Convention on Climate Change, those implemented by other international organizations and those operating externally or indirectly to the efforts of climate protection, such as trade, private investment and foreign direct investment. In the region, total climate change funds added 28.3 billion in 2013, and most of resources in Latin America and the Caribbean came from local development banks, who account for over 60% of regional efforts. Among countries, Brazil, through the National Social Development Bank (BNDES), the Amazon Fund and Low Carbon Agriculture Program (ABC), concentrated 46% of the total approved climatic resources and committed in the region. Additionally, the European Investment Bank (EIB), the Andean Development Corporation (CAF) and the Inter-American Development Bank (IDB) are the most important multilateral contributions in the region. Particularly striking is the high participation of EIB, who in 2013 significantly exceeded the contributions from IDB.

In a nutshell, climate change poses a real environmental and socio-economic threat to the countries of the LAC and accessing the required finances for adaptation is essential. The costs of climate change adaptation in the LAC is estimated by the World Bank (2011) to be USD 21.3 billion a year, falling second regionally after East Asia and the Pacific (USD 25.7 billion). However, LAC have attracted the least amount of the available carbon finance from bilateral and multilateral instruments according to a study carried out by the Regional Gateway for Technology Transfer and Climate Change Action in Latin America and the Caribbean (REGATTA) project, which is managed by the UNEP Regional Office for Latin America and the Caribbean<sup>30</sup>. What we have today is a gradual strengthening of climate finance that nonetheless seems insufficient for structural change required in LAC and the world. Therefore, LAC's position in international climate negotiations have a clear focus on adaptation and finance and some advances have been achieved regarding the new finance mechanisms available.

## Regional Energy Integration and Climate Change

In tackling climate change, energy issues assume a prominent role due to a number of factors. First, the irrefutable evidence of the impact of GHG on climate change has determined the existence of links between energy consumption and global warming. For example, Brazil currently faces a change in the profile of their GHG emissions. Since it has successfully reduced GHG emissions caused by deforestation, the percentage of GHG emissions caused by the energy sector has increased significantly – from around 16% in 2005 to 37% in 2012.

29 CEPAL. SAMANIEGO, J., SCHNEIDER, H. *Financiamiento para el cambio climático en América Latina en 2013*. Available at <http://www.cepal.org/es/publicaciones/37910-financiamiento-cambio-climatico-america-latina-2013>

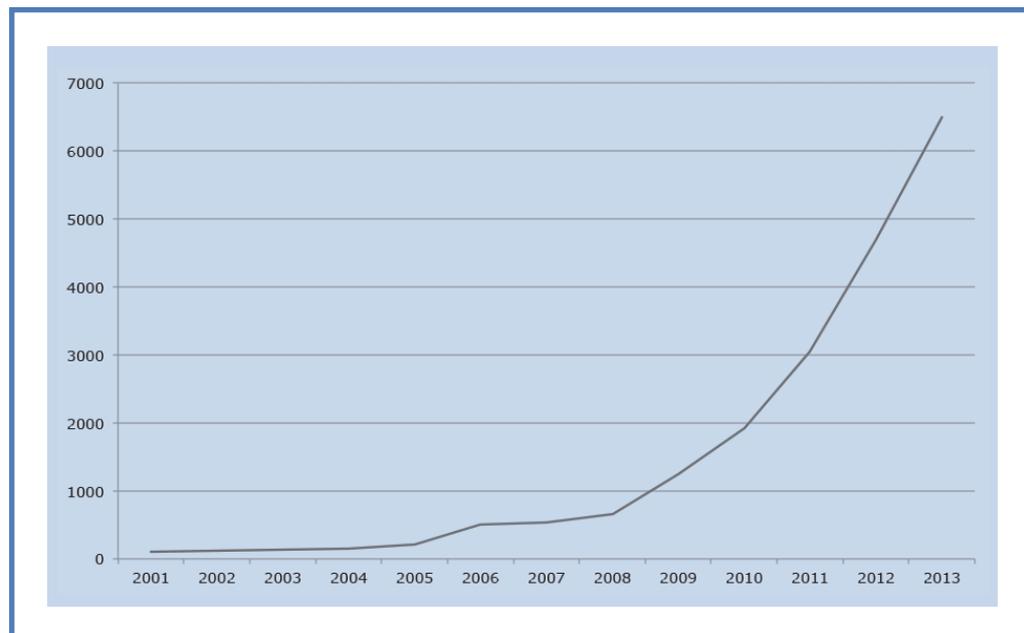
30 UNEP-ROLAC. SABELLI, A. and SPENSLEY, J. *Financing Climate Change Adaptation in Latin America and the Caribbean*. 2012.

Secondly, within climate change, energy issues stand out in that energy is crucial to achieving development goals. There are current and potential future impacts of climate change on the energy sector, such as power-plant disruptions due to drought and the disruption of fuel supplies during severe storms. Without the security of energy supply, the socio-economic stability of countries is jeopardized.

And finally, since much of the increase in GHG emissions is a result of burning fossil fuels for energy, renewable energy and energy efficiency have a key role in tackling climate change. Therefore, energy is an important topic for LAC, which seeks the pathways of regional cooperation to qualify discussion of the topic.

LAC presents great potential to explore renewable energy. According to a study by the IDB, LAC could meet all its electricity needs using renewable resources – LAC’s renewable energy allocation is large enough to meet 22 times its projected electricity needs by 2050<sup>31</sup>. Numbers are also impressive in terms of hydropower potential. LAC has 25% of the world’s hydropower potential but uses merely 22% of this<sup>32</sup>. Advancements in recent years, however, are amazing, especially in terms of installed capacity of wind power, which has grown more than 60 times in little over decade.

#### Installed wind power in Latin America (MW)



Source: CAF - Development Bank of Latin America.

Alongside the necessary incentive to better harness the potential of renewable energy in Latin America stands the importance of making efforts to increase energy efficiency in the region. Investments in energy efficiency are seen as complicated

31 VERGARA, W.; ALATORRE, C.; ALVES, L. *Rethinking Our Energy Future: A White Paper on Renewable Energy for the 3GFLAC Regional Forum, 2013*. Available at <https://publications.iadb.org/handle/11319/5744?locale-attribute=en#sthash.U43i40yE.dpuf>

32 Available at [http://www.olade.org/sites/default/files/presentaciones-sej/8\\_Presentaci%C3%B3n%20OLADE%20UPADI%20201.pdf](http://www.olade.org/sites/default/files/presentaciones-sej/8_Presentaci%C3%B3n%20OLADE%20UPADI%20201.pdf)

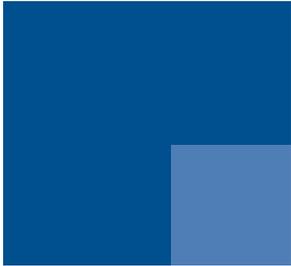
and risky - implementation costs of mass transportation systems, for example, in a region that traditionally adopts the road transportation model are high. An analysis by ECLAC on the development of national programmes and actions related to the promotion and development of energy efficiency in the 27 LAC countries that are members of the Latin American Energy Organization (OLADE), between the years 2008 and 2013<sup>33</sup>, concluded that the government is still responsible for most of these actions in this sector, and that cases where power distribution companies promote energy efficiency among their customers are very few. A critical point is the lack of continuity of the institutions related to the promotion and development of energy efficiency. Moreover, the sectors related to the environment and climate change are given greater attention and institutional importance, while energy efficiency is often seen as a mere appendage of environmental policies. Finally, knowledge about what actions can be performed, what economic benefits would be obtained and which technologies could be applied to improve the use of energy, especially residential remains insufficient in all social strata.

Innovation in the energy sector is a key concept to achieve development goals and for countries to fulfil their Paris commitments. According to a new report by the Inter-American Dialogue and the Development Bank of Latin America (CAF), LAC countries would also benefit from the expansion of innovation to meet climate change mitigation targets and boost their economies, particularly Brazil, Mexico and Chile, the region's countries with the greatest potential to expand research and commercialization in the clean energy sector<sup>34</sup>. LAC countries have emerged as pioneers in certain technology niches – ethanol in Brazil, biodiesel in Mexico and ocean energy in Chile are a few successful cases analysed in the referred report. The region has a number of highly qualified researchers and first class institutions developing new and promising technologies. However, the region has low innovation indicators in energy when compared to other parts of the world; requesting fewer patents, investing less in R&D and receiving less in royalties. Innovation in terms of climate change offers a unique opportunity for LAC to boost regional economic development.

Given the importance of the energy issue in tackling climate change, regional cooperation provides alternative solutions for national energy security problems. There are important bilateral agreements - such as the Itaipu hydroelectric power plant, the most successful example, which is the result of a Brazilian and Paraguayan partnership - and regional agreements, in which a number of institutional mechanisms for integration in Latin America that address the energy issue can be identified. With the incorporation of Venezuela, and more recently of Bolivia, the Southern Common Market (MERCOSUR) has become a world power in energy: it is the fourth largest producer of crude oil, after Saudi Arabia, Russia and the United States. The Union of South American Nations (UNASUR), in turn, has two councils that directly address the energy challenges: the Energy Council of South America (CES) and the South American Council of Infrastructure and Planning (COSIPLAN). In addition, the Community of Latin American and Caribbean Countries (CELAC) holds meetings between Energy Ministers to exchange experiences and views on

33 NU. CEPAL. División de Recursos Naturales e Infraestructura. *Eficiencia energética en América Latina y el Caribe: avances y desafíos del último quinquenio*. Available at <http://www.cepal.org/es/publicaciones/4106-eficiencia-energetica-america-latina-caribe-avances-desafios-ultimo-quinquenio>.

34 MILLER, J.; VISCIDI, L. *Clean Energy Innovation in Latin America. Inter-American Dialogue e CAF-Development Bank of Latin America*. Available at <http://www.thedialogue.org/wp-content/uploads/2016/02/Clean-Energy-Innovation-in-Latin-America.pdf>



energy security, sustainable development and proper and balanced use of energy. Finally, the Latin American Organization for Energy Development (OLADE), the oldest Latin American organization on energy, which was formed in response to the energy crisis of the 1970s, provides technical and political support for countries to achieve integration and development in the regional energy market. It is imperative to also highlight the development of regulatory frameworks such as the South American Energy Treaty, aimed at creating a legal framework that ensures energy exchange between countries based on the free transit of energy and the non-discrimination principle. Despite the existence of such mechanisms, it is necessary to move forward with concrete projects to address the current climate and geopolitical challenges of integration.

Not only within Latin America has energy cooperation taken place. It is complemented by energy cooperation frameworks with other regions of the world. As an example, in order to achieve development in energy security, current European policies, especially the German energy transition, are seen as a learning model for the gradual expansion of renewable energies. However, there is still no comprehensive understanding of the steps to take to achieve the German *Energiewende* project or that of other European policies such as Europe 2020<sup>35</sup>. The first consists of the transformation of the German energy supply, focusing on the expansion of renewable energy, reducing energy consumption, the achievement of excellence in energy efficiency, reduction of GHG harmful to the climate and the decommissioning of nuclear power<sup>36</sup>. With regards to the Europe 2020 plan, its objectives on climate change and energy sustainability include the reduction of emissions of GHG by 20% (or 30% if the necessary conditions are met) in relation to the levels recorded in 1990, obtainment of 20% of energy from renewable sources, and a 20% increase in energy efficiency. More ambitious targets are assumed in the update of the 2030 Climate and Energy Framework, with a 40% reduction in emissions of GHG (also compared to 1990 levels), expansion of the share of renewables to 27% and increase in energy efficiency<sup>37</sup>. In this sense, it is still necessary to make an effort to disclose the technical and political aspects of these models in more detail, but simply copying the European/German model would hardly be effective in LAC, since it is necessary to respect the social conditions and local policies.



## Conclusions

The theme of environmental governance becomes progressively more important in the regional agenda, but there is still great potential for improvement, especially with regards to the involvement of citizens in the formulation of climate policies, the discussion of the matter in parliaments and the attention given by candidates during electoral campaigns and by governors, during their mandates, to the challenges of climate change. With regard to the discussion of climate change within the legislature, 2016 will be a year of important positioning of national

35 More Information available at [http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/index\\_pt.htm](http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/index_pt.htm)

36 *Perception of German Energy Transition in Emerging Countries: Results of a qualitative research with experts in Brazil, China and South Africa*. Konrad Adenauer Foundation. Available at [http://www.kas.de/wf/doc/kas\\_37304-1522-5-30.pdf?140401150838](http://www.kas.de/wf/doc/kas_37304-1522-5-30.pdf?140401150838)

37 Information available at <http://ec.europa.eu/energy/en/topics/energy-strategy/2030-energy-strategy>

parliaments on this subject. After the signing of the Paris Agreement scheduled for April in New York, some countries will start the internal ratification process. The progress made at COP 21 is expected to be confirmed by national parliaments, strengthening national and regional platforms discussions on climate change.

There are prominent Latin American personalities who play a very active role in the global debate on climate change, which could contribute for the subject to be more present on the political agenda of LAC, such as Costa Rican Christiana Figueres, Executive Secretary of the United Nations Convention on Climate Change, and Pope Francisco, from Argentina, who organized a climate conference at the Vatican and published the *Laudato Si* encyclical, which urges for global unification of actions to fight environmental degradation and climate change. Latin America's vulnerability to climate change and the direct impacts on its population and its economy no longer allow to postpone the centrality that the issue should take in LAC's local, national, regional and international public policies.

Most LAC countries developed national legal and institutional frameworks for environmental issues, but their ability to ensure the effective implementation of those instruments is limited. In addition, there is the problem of limited procedural continuity due to short mandates that hinder the achievement of lasting environmental results. If the formulation of these policies were based on greater participation of society and if parliaments were more effectively open spaces for transparent and democratic discussions of people's concerns, there would be a greater possibility of building a social consensus on climate issues, avoiding the political break in continuity whenever there is a change of ruler. In addition, citizens would be provided with more information on what are the goals and proposals for their countries to tackle climate change. Thus, active participation in the formulation of a climate policy agenda by citizens would be ensured as well as the means to demand the fulfilment of the proposed objectives and actions from the government.

Knowledge about the impacts of climate change, about actions to fight them and the resulting economic benefits of implementing a sustainable development policy is essential to advance the issue. The issue should be discussed in schools, universities, companies and communication vehicles. Young people have a leading role in this field as they have the possibility of developing economic models and more sustainable life styles, as well as sharing information on their social media in their interest and on behalf of future generations.

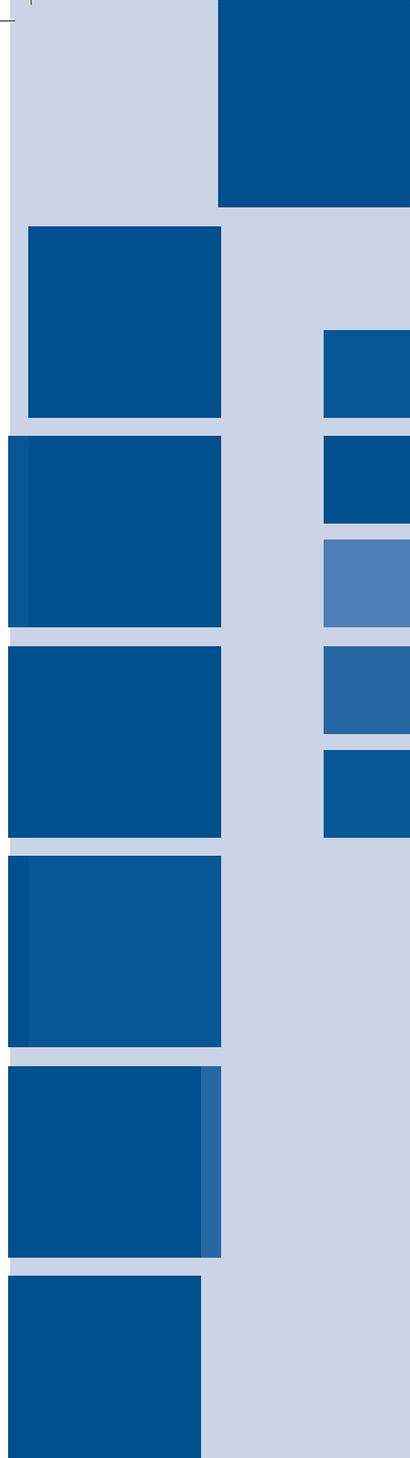
Technical and academic cooperation, whether between countries in the region or with the rest of the world, also offers opportunities for exchanging experiences and good practices with regards to the most diverse and creative measures to address climate change. The challenge of climate change is global and multilateral learning platforms allow access to solutions saving time and money.

Finally, ensuring the conditions for private sector participation as part of the solutions to climate change is also essential. As shown, the Latin American region has low energy innovation indicators compared to other parts of the world. Regulation should be favourable to investments in research and development, thus providing increased patent applications and receiving royalties by the countries in the region. Innovation offers LAC the unique opportunity to simultaneously boost job creation and economic growth, increasing foreign capital flows, and to fight the challenges of climate change with innovative solutions.

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