How to reduce the vulnerability of LAC countries to climate change and advance towards greater use of renewable energies

Key highlights

- Latin America and the Caribbean (LAC) are particularly vulnerable to climate change: extreme climate-related weather events increased on average by 60.2% between 2001 and 2022, and 13 out of the 50 countries most affected by climate change in the world are in the LAC region.
- Investing in renewable sources of energy can substantially reduce GHG emissions while also providing lower-cost power and reducing reliance on fossil fuels. The region is endowed with high potential for renewable energy resources: at present, renewables account for 33% of total energy supply in the region, compared to 13% globally.
- Nature-based solutions can help protect and restore ecosystems and increase human well-being. Sustainable land and forest management are essential in a region where forest land cover decreased by 8.2% between 2000-20. Chile and Costa Rica are good examples, as they increased their forest area by 15% and 6% respectively, between 2000-20.

What's the issue?

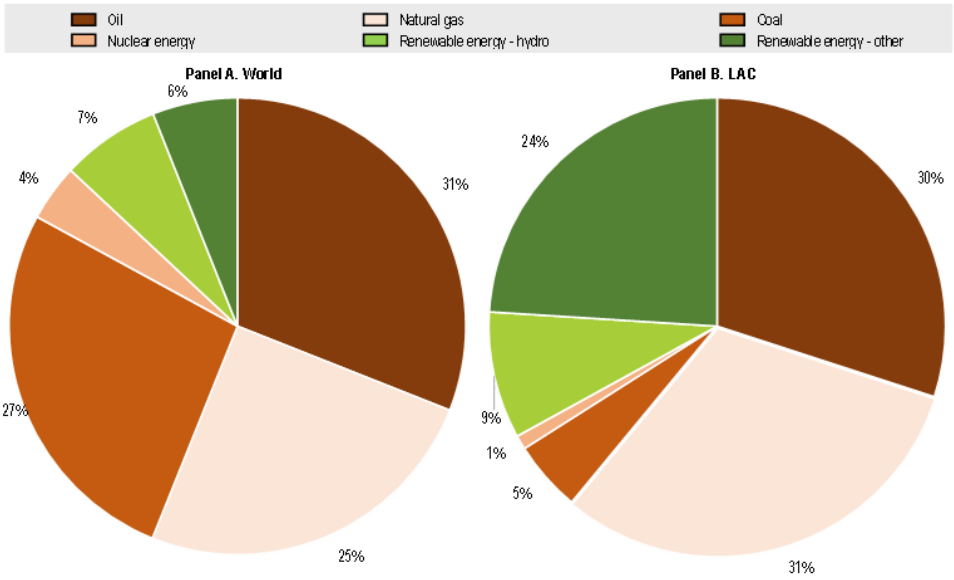
LAC governments should promote policies to reduce emissions, limit the vulnerability to climate change, and transform the energy matrix

LAC is disproportionately affected by extreme climate-related weather events, which increased on average by 60.2% between 2001 and 2022, compared to the previous two decades. In total, of all climate-related extreme weather events registered worldwide between 1970 and 2022, 17.1% occurred in LAC (OECD et al., 2022).

Nearly half of the population in LAC is assumed to be highly or extremely vulnerable to the risks of climate-related impacts, and 13 out of the 50 countries most affected by climate change in the world are in LAC (OECD et al., 2022). The region's vulnerability highlights the urgent need to address the impact of climate change.

LAC's share in total GHG emissions (8.1%) is proportional to its share in total world population (8.4%), slightly higher than its share in global GDP (6.4%) but lower than the per-capita emissions of other regions with similar development levels. The structure of emissions in LAC differs from that of OECD countries. While in OECD countries the energy sector accounted for 83.5% of total emissions in 2019, emissions in LAC come mostly from three sources, adding up to 88.3% of total emissions: energy (43.5%), agriculture (25.3%, more than double the OECD level) and land use, land-use change, and forestry (19.5%). Since 1990, emissions from almost all sectors have grown continuously in LAC, with the energy sector experiencing the largest increase (738 Mt Co2e or 70% from 1990 to 2019) (OECD et al., 2022).

Figure 1. World and Latin America and the Caribbean total energy supply matrix, 2020



Note: Total energy supply consists of production + imports – exports – international marine bunkers – international aviation bunkers +/- stock changes. Renewable energy – other includes biofuels, solar, wind, and geothermal energy.

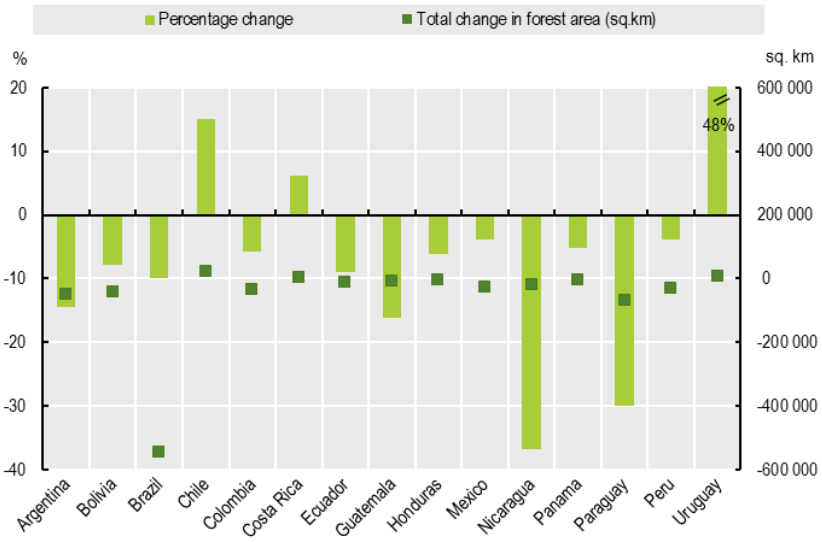
Source: OECD et al. (2022), Latin American Economic Outlook 2022: Towards a Green and Just Transition https://doi.org/10.1787/3d5554fc-en.

Examples from LAC countries

The LAC region has a distinctive potential to promote adaptation policies based in natural resources with a direct positive impact in citizen's wellbeing. For instance, the region has an important role in reverting these trends and preserving forests, being home to 23% of the world's forests, including the Amazon (OECD et al., 2022).

Uruguay, **Chile** and **Costa Rica** are good examples, as they increased their forest area by 48%, 15% and 6%, respectively, between 2000 and 2020 (Figure 2). This contrasts with the trend in the region, where forest land cover decreased by 8.2% between 2000 and 2020. Reforestation has proven an effective nature-based solution to reduce net GHG emissions by absorbing CO2 and counterbalancing the negative effects of land used for unsustainable agriculture, stockbreeding and the expansion of cities and highway buildings. In these countries, active collaboration with the private sector and the civil society combined with strong government capacity, proved crucial to promote protected areas and enforce land tenure. As a result, future generations will be able to enjoy the benefits of healthy forests, such as the protection of biodiversity, regulations of the water cycle, soil protection, supply of resources including timber, medicines, food and fibres, and opportunities for recreation and tourism.

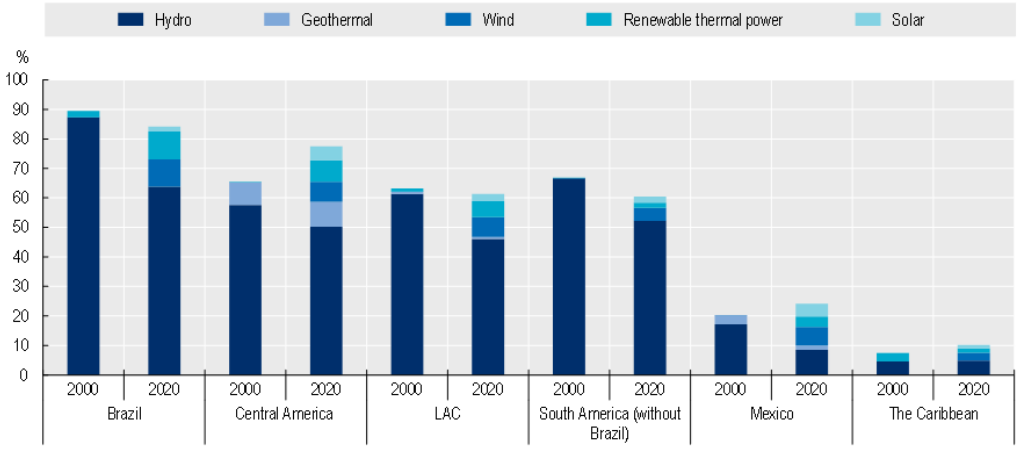
Figure 2. Change in LAC forest area, 2000-20



Source: OECD et al. (2022), Latin American Economic Outlook 2022:Towards a Green and Just Transition https://doi.org/10.1787/3d5554fc-en.

The adoption of renewable sources for energy generation in LAC is another example of how a sustainable use of natural resources can promote greater well-being for citizens and build resilience to external shocks. With respect to electricity supply, the region has advanced in the diversification of renewable sources of power; shifting from mainly hydropower to growing shares of thermal, wind, and solar energy. Diversifying the sources of renewable energy reduces the countries' vulnerability to weather changes and enlarges the total electricity supply. Central America has shown the greatest increases in renewables in the last two decades, from 65% to 77% (Figure 3).

Figure 3. LAC: Proportion of renewable sources in the total electricity supply matrix, 2000 and 2020



South America includes: Argentina, Bolivia, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay and Venezuela. Central America includes: Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. The Caribbean includes: Cuba, Grenada, Guyana, Haiti, Jamaica, Dominican Republic, Suriname and Trinidad and Tobago. Belize and Barbados are also included in the Caribbean in 2020. Brazil generates more electricity than all the countries of South America together, so it was decided to exclude it and show it aside
Source: OECD et al. (2022), Latin American Economic Outlook 2022: Towards a Green and Just Transition https://doi.org/10.1787/3d5554fc-en.

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In 2013, the Caribbean Community (CARICOM) committed to reach a regional target of 47% renewable energy in total electricity generation by 2027. Since then, many Caribbean countries have already made significant efforts towards the adoption of renewable energy technologies, with utility-scale solar installations, wind projects and efforts to harness geothermal energy. As a consequence, the Caribbean region achieved an increase of 3 percentage points in the use of renewables and more citizens have access to cheaper and cleaner energy. These improvements are crucial as the dependency of many Caribbean countries on fossil fuels averages 90%. As a consequence, countries from the region could start to deliver lower-cost power, closing the gap of access to energy, and reduce reliance on imported fossil fuel products, which can be subject to significant price fluctuations and risk of supply disruption and can have damaging impacts on the balance of trade (OECD et al., 2022).

Suggested policy actions

LAC governments have the opportunity to focus on effectively transforming and decarbonising the systems that underpin their economies and societies by mainstreaming climate mitigation and adaptation policies as cross-cutting issues.

If properly addressed, nature-based solutions can help protect and restore ecosystems and increase human well-being. Sustainable land and the promotion of protected areas could increase the resilience of ecosystems and societies. Some specific policy instruments that could help are:

- Regulations, such as green certifications, environmental laws and standards, to assign specific budgets to preserve forests and prevent unsustainable land uses (e.g. “Native forest law” in Argentina), or encourage public-private collaborations (e.g. concessions for sustainable forest and land management or the payments for environmental services).
- Promotion of participation processes with local communities and civil society organisations to identify needs and increase the legitimacy of policy.
- Development of national strategies and promotion of activities within the United Nations Framework Convention on Climate Change to reduce emissions from deforestation and forest degradation in developing countries (REDD+) to obtain results-based payments.

The transition towards diversified and adapted energy systems that include higher shares of renewable energy can bring multiple benefits to LAC citizens. It will be crucial to:

- Unlock non-hydro renewable energy potential, creating the necessary conditions in terms of regulation, economic incentives and promotion of investment.
- Foster electrification to accelerate progress towards systemic decarbonisation by implementing integrated and effective power sector planning.
- Build regional energy security and resilience in the face of external shocks. Increase efforts to transition towards a more renewable energy matrix, profiting from solar, wind, ocean, geothermal and biomass potential, as a strategy to ensure energy security and mitigate GHG emissions.

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