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A New Global Agreement Can Catalyze Climate Action in Latin America

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EXECUTIVE SUMMARY

In December over 190 countries will converge on Paris to finalize a new global agreement on climate change that is scheduled to come into force in 2020. A central part of it will be countries' national pledges, or "intended nationally determined contributions" (INDCs), to be submitted this year which will serve as countries' national climate change action plans. For Latin American countries, the INDCs present an unprecedented opportunity. They can be used as a strategic tool to set countries or at least some sectors on a cleaner path toward low-carbon sustainable development, while building resilience to climate impacts. The manner in which governments define their plans will determine the level of political buy-in from civil society and business. The implementation of ambitious contributions is more likely if constituencies consider them beneficial, credible, and legitimate.

The paper aims to better understand the link between Latin American countries' proposed climate actions before 2020 and their post-2020 targets under a Paris agreement. We look at why Latin American climate policies and pledges merit attention, and review how Latin American nations are preparing their INDCs. It examines the context in which five Latin American nations (Brazil, Costa Rica, Mexico, Peru, and Venezuela) are developing their INDCs—what pledges and efforts have already been made and what this context tells us about the likely success of the INDCs. In doing so, we focus on flagship national policies in the areas of energy, forests, and cities and transportation. We address what factors are likely to increase or restrain efforts on climate policy in the region this decade and the next.

Latin American countries are playing an active role at the U.N. climate change talks and some are taking steps to reduce their emissions as part of their pre-2020 voluntary pledges. However, despite some progress there are worrying examples suggesting that some countries' climate policies are not being implemented effectively, or are being undermined by other policies. Whether their climate policies are successful or not will have significant consequences on the likely trajectory of the INDCs and their outcomes. The imperative for climate action is not only based on Latin America's modest contribution to global carbon emissions. Rather, a focus on adaptation, increasing the deployment of renewable energy and construction of sustainable transport, reducing fossil fuel subsidies, and protecting biodiversity is essential to build prosperity for all Latin Americans to achieve a more sustainable and resilient development.

RECOMMENDATIONS

1. Latin American countries should develop robust and transparent intended nationally determined contributions (INDCs, or national pledges of climate action) based on public consultation. These plans can set in motion a shift to resilient and low-carbon development pathways.

2. Latin American governments and civil society groups should consider organizing a regional forum focusing on the INDCs and adaptation, climate risks, clean energy, and transport. This can be started under Ecuador's current presidency of CELAC (the Community of Latin American and Caribbean States) and can be turned into an annual meeting to assess progress.

3. Latin American governments should call a meeting with the Inter-American Development Bank, the World Bank, CAF–Development Bank of Latin America, and principal donor countries to showcase their INDCs and their existing emissions reductions and adaptation plans, with the aim of encouraging further investment, cooperation, and to mobilize special credit lines.

4. Governments need to engage with citizens by using accessible language and user-friendly outreach in order to increase public understanding and ownership of the INDCs and the Paris agreement. They must focus on the real benefits for citizens and businesses of national climate actions in order to win the argument that climate protection is affordable and in line with building prosperity and creating jobs.

5. Governments should provide clarity as to how civil society inputs on the INDCs will be considered which can lend transparency, legitimacy, and stakeholder engagement to the process.

6. Presidential support for public consultations on the INDCs is essential and can advance ambitious climate contributions and send clear political signals across government and society that the consultation process is a priority.

INTRODUCTION

This year is pivotal for how the world addresses climate change. In December over 190 countries will meet in Paris to finalize a new global agreement on climate change that is scheduled to come into force in 2020. A central part of it will be countries' national pledges, or "intended nationally determined contributions" (INDCs), which will be submitted to the United Nations this year so their collective adequacy can be assessed and improved over time. These will serve as national climate change action plans and will include how countries will reduce their emissions, adapt to the impacts, and provide the means of implementation through funding and technology transfer to developing countries.

For Latin American countries these national contributions present an unprecedented opportunity.[1] They can be used as a strategic tool to set countries or at least some sectors on a cleaner path toward low-carbon sustainable development, while building resilience to climate impacts. A strong plan can also help connect the U.N. climate talks to domestic audiences, who often are cut off from the opaque and distant climate negotiation process that is only comprehensible to insiders.

The Latin American climate policy domain is currently dominated by government experts, multilateral development bank officials, consultants, and a handful of global civil society organizations. Citizens are often kept outside of decision-making on national and international climate policy, a state of affairs which is certainly not unique to Latin America. Latin America's private sector, local governments, and civil society must have the opportunity to contribute their ideas. The manner in which governments define their plans will determine the level of political buy-in from citizens, civil society, and businesses. The implementation of ambitious contributions is more likely if constituencies consider them beneficial, credible, and legitimate.[2]

In Latin America, the INDCs also offer a means to improve regional cooperation on climate; current efforts are currently fragmented across several negotiating blocs and among myriad regional bodies.[3] There is opportunity for cooperation since many Latin American countries share their vulnerability to climate impacts (glacial melt, forest dieback, extreme climatic events) and have similar sources of emissions (e.g. forestry, energy, and agriculture). Finally, the INDCs can create the conditions for ambitious targets in the next negotiation round, which are likely to be negotiated on five-year intervals.

This paper attempts to provide a better understanding of the link between Latin American countries' proposed climate actions before 2020 and their post-2020 targets under the Paris agreement. First, we look at why Latin American climate pledges and policies merit attention. Second, we review where countries are today, after the U.N. climate negotiations in Lima, Peru in December, 2014, and the meetings held in Geneva in February 2015.

We review briefly how Latin American nations are preparing their INDCs, paying particular attention to what is being included and whether governments are conducting public consultations on their design and what elements the INDCs should include. Given the INDC process is ongoing or just getting started in several countries in the region, information is patchy. Despite the lack of information we attempt to make an approximation about the design process, whether governments are conducting public consultations on the INDCs, their level of ambition, and how non-state actors in the region are responding to the processes.

We then examine the context in which Latin American nations are developing their INDCs—what pledges and domestic efforts have already been taken and what this context says about the likely success of the INDCs in their integration into broader development goals. We look at how recent domestic politics and policy in five countries (Brazil, Costa Rica, Mexico, Peru, and Venezuela) may drive climate efforts in the coming years, focusing on flagship national policies in the areas of energy, forests, and cities and transportation. We analyze how successful these policies have been and what factors help to explain progress made on climate change, or the lack of it. Finally, we assess what these factors show about the likely design of the INDCs and the likelihood of progress on climate action pre-2020 and post-2020.

WHY LATIN AMERICA?

Latin American climate policy is important for six reasons.

First, some Latin American countries are a bellwether for how societies will square the desire and need for development with low-carbon energy. The region offers some of the only places on earth where nations have achieved high levels of human development (as measured by life expectancy, literacy, and income) while emitting relatively small amounts of greenhouse gas emissions, which is due mainly to the dominance of hydropower. Yet ongoing debates about the social and environmental impacts of big hydro should not be overlooked. Hydropower is also becoming more vulnerable to drought, as rain patterns shift and become more unreliable under likely warming scenarios.

Policies and targets promoting renewable energy such as solar, wind, and geothermal are making headway in the region but need to be hastened. For example, Chile's Non-Conventional Renewable Energy Law aims to produce 20 percent of the country's electricity from renewable sources by 2025. Encouragingly, Latin America is a potential leader on clean energy. The Inter-American Development Bank says that Latin America can meet its future energy needs through renewable energy sources, including solar, wind, marine, geothermal and biomass energy, which are sufficient to cover its projected 2050 electricity needs 22 times over.[4] According to the ClimateScope report in 2014, which ranks countries on the level of attractiveness for clean energy investment, Latin America and the Caribbean are regarded as one of the great frontiers for clean energy investment. From 2006 to 2013, the region attracted a cumulative $132 billion for biofuels, biomass, geothermal, solar, small hydro (up to 50MW), and wind.[5] Realizing this renewable energy potential will require covering ground in countries that currently lag behind. Challenges holding back greater progress include vested interests in the status quo, inaccessibility of data, fossil fuel subsidies, and a lack of capital.[6]

Second, Latin America is highly vulnerable to climate impacts as confirmed in the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. These impacts include the potential collapse of the Caribbean coral biome, the disappearance of glaciers, coastal erosion with the rise of sea levels, the risk of dieback of the Amazon rainforests, and the intensification of extreme weather events such as tropical storms, floods, and droughts. The region's vulnerability to climate impacts is a consequence of various factors, including its geography, the way in which its population and infrastructure are distributed along coasts, its dependence on natural resources that are themselves fragile or limited, the scale of its agricultural activities, the size of its forests, and its biodiversity.[7] Moreover, limited institutional capacity is also a key issue when describing the vul-

nerability of Latin American countries. The ability of institutions to respond effectively is central to their ability to respond to growing climate risks.[8] The U.N. Economic Commission for Latin America and the Caribbean (ECLAC) says that the economic costs of climate change are estimated at between 1.5 percent and 5 percent of the region's GDP, although with a high degree of uncertainty.[9] The Inter-American Development Bank stated that damages in the region caused by the impacts associated with a rise of 2 degrees over pre-industrial temperatures will likely approach $100 billion a year by 2050.[10] Climate change also presents a serious challenge to hard-won development gains in health and education, and is deepening the divide between the rich and poor across the region.[11]

Third, Latin American countries have played a diverse and vital role at the U.N. climate negotiations.[12] Brazil was instrumental in shaping the U.N. Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. Mexico's presidency of the Cancun climate conference in 2010 helped to rescue the negotiations following the fiasco in Copenhagen the year before. Peru successfully hosted the Lima round of negotiations in 2014 securing agreement on a draft text to be finalized in Paris in 2015 and Costa Rica has played an active role shaping Reducing Emissions from Deforestation and Forest Degradation (REDD+). The Independent Association of Latin America and the Caribbean (AILAC) was established to help bridge the North-South divide in the climate negotiations, by trying to enhance consensus and the ambition of climate actions. The call from the Bolivarian Alliance for the Peoples of Our America (ALBA) to respect UNFCCC procedures and its promotion of climate justice represent valuable contributions. Also, four Latin American countries have now pledged funds to the Green Climate Fund that is widely regarded as a positive step in expanding the pool of donors in the post-2020 regime.[13]

Chile and Brazil have led an initiative to increase the dialogue between Latin American countries on climate change in order to build trust and understanding with the goal of identifying common regional positions at the U.N. climate negotiations. In an unprecedented statement at the Lima climate conference, Costa Rica spoke on behalf of the Community of Latin American and Caribbean States (CELAC) which includes all 33 countries in the region. The statement emphasized that the new global climate agreement should treat adaptation and mitigation in a balanced manner given how vulnerable the region is to climate impacts.[14] It stated CELAC's support for a legally binding agreement and commitment to keep temperature increases below 2 degrees Celsius. The statement called for wealthy nations to meet promises for climate finance of $100 billion per year by 2020 for developing countries. It also states the importance of building rules on transparency and accountability for the provision of finance and other means of implementation such as technology transfer to support CELAC countries. Despite some progress, Latin American countries still belong to different negotiating groups at the U.N. climate talks with divergent positions that respond to different foreign policy priorities.

One of the main advances of the U.N. climate talks in Lima last year was to reach agreement on how countries will devise and submit their INDCs. The major breakthrough was that all countries have to reduce their emissions based on their "common but differentiated responsibilities and respective capabilities in light of different national circumstances." This language, known as "CBDR+RC", might seem cumbersome but it is critical inside the negotiations as it seeks to balance the *historical responsibility* of climate change (developed countries will "go first" in reducing its emissions reductions) and a *new universality* (that all countries will act and do so according to national circumstances). Universality is fundamental to make progress, since previously only de-

veloped countries had mandatory obligations while developing countries were required only to make voluntary efforts. As emissions from developing countries grew and the resistance to change increased, a group of Latin American countries have been instrumental in supporting a shift toward universal action to reduce emissions as part of the new Paris climate agreement. These countries have been pushing for this shift based on the notion that all countries need to act, according to their different responsibilities and capabilities.[15] This debate has been arduous and the fact that this breakthrough happened in Peru is fitting.[16]

Fourth, various Latin American countries are attempting to take positive steps to confront climate change. Mexico created a climate change law in 2012, with targets to reduce emissions by 30 percent below "business as usual" by 2020 and by 50 percent by 2050. Costa Rica has pledged to become carbon neutral by 2021. Brazil has established a national greenhouse gas reduction target of roughly 36 percent below "business as usual" projected emissions by 2020, largely based on reducing deforestation rates. Other countries, including Bolivia, Costa Rica, Honduras, and Peru have either passed laws or announced the intention to create legislation to reduce emissions and adapt to climate impacts. However, there is the considerable challenge of implementing these policies and laws, which in some cases are being jettisoned, undermined, or simply ignored.

Fifth, Latin America has a remarkable endowment of natural resources and energy reserves. These include 25 percent of the planet's arable land, 22 percent of the world's forest area, and 31 percent of the earth's freshwater resources; it is also home to some of the largest fossil fuel reserves in the world.[17] Venezuela has the world's largest known oil reserves. Brazil's offshore pre-salt oil and Mexico's reforms to its energy sector could see oil and gas production soar. What happens to those fossil fuel reserves—whether they will stay underground or be burned and have their carbon released into the atmosphere—will be determinative for the future of Latin America and the world.

In order to "avoid dangerous climate change," the global economy will have to stay within a proposed carbon budget, which amounts in some estimates to about 500 gigatons in carbon dioxide emissions to 2050.[18] A study by Christopher McGlade and Paul Ekins shows that about 40 percent of Latin America's oil, about 55 percent of its gas, and 75 percent of its coal reserves, when combined with other fossil fuel reserves in other regions, would have to stay in the ground if we hope to stay below 2 degrees of warming.[19] Latin American countries such as Venezuela, Mexico, Ecuador, Brazil, and Argentina, with large reserves of fossil fuels, or countries like Chile or Costa Rica, which are dependent on fossil fuel imports, are potentially exposed to this systemic risk.[20] Our collective fate rests on the domestic politics of countries with major fossil fuel reserves, politics that will either lead them to exploit major fossil fuel reserves and consume a significant part of the global carbon budget. Nations buying these resources in Asia, Europe, and North America also need to make drastic reductions in their fossil fuel consumption and support efforts to diversify Latin American economies that are reliant on fossil fuels.

One of the greatest challenges facing Latin America is the sustainable management of its rich and economically-important natural resources.[21] The region's commodity-led economic growth model has put its natural resources under tremendous pressure including increased deforestation, raising air pollution, land desertification, and fisheries under stress.[22] The perils of "extractivism" illustrate the concern of an overreliance on the exploitation of natural resources to the detriment of the environment, social development, and the likelihood

of the government action on climate change.[23] ECLAC argues that progress has been made in reducing poverty and inequality and achieving greater macroeconomic stability, but sustaining these advances will be difficult given climate change, slowing international trade, fluctuating commodity prices and a failure to diversify Latin American economies and improve productivity.[24]

Sixth, Latin America only contributes roughly 9.5 percent of global emissions, but the region's actions and political will to curb emissions still matter. Brazil is the dominant source of Latin America's emissions, followed by Mexico, Venezuela, and Argentina. Deforestation rates have fallen sharply since 2004 as Brazil in particular has focused on the issue, with its associated emissions following. However, sustained economic growth is driving an increase in Latin America's emissions from energy generation, transport, and agriculture.[25] As the region continues to grow, Latin America's ability to keep its emissions down presents a pressing challenge. The International Energy Agency predicted that Latin America's per capita energy-related emissions would grow by 10 percent between 2005 and 2015, and by 33 percent during 2005–2030.[26] The priority must be to avoid becoming locked into high-carbon development pathways that involve the increased use of fossil fuels or a failure to consolidate important gains on protecting forests.

HOW ARE LATIN AMERICAN COUNTRIES PREPARING THEIR INDCS?

At the 2013 U.N. climate talks in Warsaw, Poland, there was agreement that a process was needed to develop a set of pledges from nations for the Paris agreement. In 2014, the Lima climate conference reiterated the invitation to all parties to develop and communicate INDCs as their "contributions" to prevent dangerous anthropogenic climate change.

A set of rough guidelines was put forward for nations to submit their intended nationally determined contributions. The structure of the Paris agreement allows each nation to put forward what they plan to do on reducing their emissions, adapting to the impacts, and supporting developing countries' actions with funding, assistance, and technology transfer. Nations must describe why their pledge is ambitious and how it represents a fair contribution. Since INDCs cover such broad issues of emissions reductions and adaptation measures, they could lead to significant changes across national economies, especially in carbon-intensive sectors. Such climate contributions could be integrated with development goals while sending signals to the private sector to invest in these efforts.[27]

The INDCs could provide concrete inputs as the world enters the final phase of negotiations, while offering proposals in a path toward achieving the objective of the convention: to bring greenhouse gas emissions to "a level that would prevent dangerous anthropogenic interference with the climate system."[28] The design of the INDCs may look different among countries depending on their capabilities. For instance, mitigation contributions can range from economy-wide emission reduction targets in advanced countries, to energy usage targets, to quantified emission reductions from existing policies or projects in countries with lower capacity.[29]

Although Latin American countries play a modest role in the global carbon cycle compared to the major emitters, they can send valuable political signals by designing ambitious INDCs, which can put pressure on the major

emitters to take greater action. Moreover the INDCs could bring a range of benefits such as attracting finances, capacity-building, or technology transfers. They can also highlight the significant synergies between mitigation and adaptation actions and other co-benefits such as poverty alleviation, health, and energy access.[30]

Within each country, domestic policies and politics are major determining factor of ambition at the international level. This means that INDCs must build upon the most ambitious existing initiatives within each country. The INDC process should be seen as an opportunity to advance new forms of national commitments under the support of the multilateral regime.

The processes by which Latin American nations are designing their INDCs are mixed and some are opaque. Some countries have started their preparations while others are barely getting started. A small number of countries might not present INDCs, although it is not clear why they would fail to do so given that all countries reached agreement on the INDC timetable established in Lima. A general feature, however, is the lack of public understanding of the Paris negotiation process and of how INDCs are being prepared domestically. On the other hand, some countries are setting positive new global precedents in increasing the level of the participation afforded to civil society, companies, and citizens.[31] In some cases, assessing a nation's mitigation potential is difficult due to the lack of historic data and inventories on emissions, and lack of consensus on how to project future emissions growth. The good news is that some countries are also pioneering new approaches that were nonexistent a few years ago. In the following paragraphs we provide some information on the ongoing INDC process in a number of Latin American countries. The level of detail varies widely, since the public information for many nations is extremely spotty.

Counting for 1.4 percent of global emissions and ranked within the top 15 global emitters, Mexico became the first developing country to announce its INDC for the Paris agreement in March. Mexico announced the intention for their emissions to peak by 2026 (four years ahead of China) and made an unconditional target to reduce 25 percent of its greenhouse gases and short-lived climate pollutant emissions such as black carbon below "business-as-usual" projections for 2030. This commitment implies a 22 percent reduction of greenhouse gases and a reduction of 51 percent of black carbon. Mexico also set a conditional target: it will reduce its emissions and pollutants to 40 percent below business-as-usual in 2030 if certain conditions, such as a global carbon price, access to financial resources, and provisions for technology transfer, are met. Mexico held a workshop on its contribution with civil society groups on February 25, 2015 and launched an online consultation the following month. Following its official launch, the Mexican government has opened its INDC to public comment, which will be received through September. It is unclear how the INDC is still open to negotiation during this period and whether new ideas and observations might be included.

Brazil is one of the world's top 10 emitters and the largest emitter in Latin America, so its INDC will have significant consequences for the likelihood of an ambitious agreement in Paris. However, given the economic and political crises in Brazil, climate change does not seem to rank high in Dilma Rousseff's political agenda. Brazil has made impressive reductions in deforestation over the last decade, but its emissions from fossil fuel use and agriculture are rising steadily.[32] Rather, an ambitious INDC could benefit Brazil's economy and citizens by focusing on the huge potential for the expansion of renewable energy, improved urban sustainable transport, and forestry protection. Minister of Environment Izabella Teixeira said that Brazil will increase the use

of renewable energy like solar, hydropower, and wind; target zero net deforestation; and push for low-carbon agriculture as part of its INDC.[33] In order to do this, more foreign capital and technology will be required. Brazil's Ministry of Foreign Affairs has held some public meetings with civil society and ran an online questionnaire on its INDC. On April 17, the Ministry published its final report on the preparation of its INDC based on these interactions.[34]

Chile plans to submit its INDC by June 2015 after a round of consultations that have, arguably, the most innovative approach in the region and, arguably, in the world. The public consultation ran from December 2014 to April 2015, and provided specific ideas on the options to reduce emissions. It sought responses from civil society, academia, and the private sector. The public was able to submit comments online and workshops were held across the country in addition to presentations made to the National Advisory Council and parliament. The INDC has gone to the Chilean Council of Ministers for Sustainability and Climate Change. Much of the technical analysis for Chile's INDC started years ago, as part of a process involving numerous stakeholders called Mitigation Action Plans and Scenarios (MAPS). The MAPS program is a collaboration among developing countries to establish options for transitioning over the long term into low-carbon and climate-resilient economies. Chilean President Michelle Bachelet mandated the public consultation, which was essential to provide it some authority to carry out its work, and send signals across government and society that the INDC is an important issue. This mandate also increases the likelihood that the government will be less likely to ignore the recommendations that accrue from a public consultation.

Peru launched its INDC process in April and is expected to hold a public consultation in June. On April 21, the Peruvian government announced the creation of a ministerial commission to be led by the Ministry of Environment, which will organize the preparation of Peru's INDC.[35] Peru's INDC can further its voluntary mitigation commitments related to forestry emissions and energy usage. These were designed as voluntary contributions by way of its nationally appropriate mitigation action (NAMA), and were contingent on external funding.[36]

Costa Rica held a workshop with experts hosted by the Ministries of Environment and Energy and Foreign Affairs, and is hosting a series of roundtables on energy and transport that will inform the design of the INDC. The government has built on mitigation actions in the agricultural and livestock sectors, and is considering the inclusion of urban efforts. A meeting with civil society on Costa Rica's INDC is expected soon, with September the likely time of submission to the U.N.

It is unclear how other Latin American countries are preparing their INDCs, with little or no public information available. Our intention for this section was to include Venezuela as an additional case study, but we were unable to track down any information about the INDC process in that country.

THE IMPORTANCE OF PUBLIC CONSULTATIONS FOR THE INDCS

The INDC design process offers an unprecedented opportunity to improve civil society and business participation in climate change policymaking. The steps taken by Chile, Mexico, Peru, and Brazil to open the debate around INDCs set a positive precedent for climate policy. Public demand for governmental transparency is increasing, so governments need to deliver information using accessible language in order to increase public understanding and ownership of the Paris agreement.

An effort by government is required to focus on the real benefits for citizens and businesses of national climate actions which can help explain the importance of the new climate agreement. Positive headlines can be made from linking approaches to tackle climate change with investments in renewable energy, clean transportation systems, reduced air pollution, and improved health and quality of life. Governments need to also explain how the Paris agreement will help build resilience to climate impacts and create jobs.

For example, the Chilean government conducted a survey on the environmental behavior and priorities of its citizens that other countries could use and follow. It found that 33 percent of Chileans worry about air pollution, so the government could build a case for stricter vehicle regulations and increased forms of clean public transport, both of which have health benefits and reduce emissions.[37] Switching from imported fossil fuels to renewables and energy efficiency can create thousands of jobs. Equipped with this information, policymakers can create a narrative to situate their climate action proposals within the context of the issues worrying their citizens.

Public consultations can ensure that the INDC responds to the concerns of stakeholders. Early and ongoing stakeholder engagement can lay the foundations for a successful process. Meaningful engagement can enhance the quality of analysis, build and improve the effectiveness and long-term viability of the INDC. By consulting with the public first, governments can increase the likelihood that plans serve the needs of those who will be affected by them.[38]

Public consultations are only the first step. Citizen comments and observations need to be reviewed, considered, and included where appropriate into official positions. While many Latin American governments may solicit public comments, it is unclear how they will ultimately consider or use them, or whether the proposals will be publicly debated. Inclusive and open climate policymaking can increase domestic ownership over the climate agenda, with potentially positive implications for democracy and real benefits for citizens and the economy.

Moreover, INDC's public consultations might be the genesis of a new context where climate commitments under UNFCCC are accountable not only to the convention, but also to national constituencies. Latin American civil societies well informed on their states' commitments in a post-Kyoto regime are crucial for the transformational change that Paris aims to trigger.

Public demand for governmental transparency in Latin America is increasing. Non-governmental organizations from Bolivia, Guatemala, Mexico, and Venezuela signed a declaration demanding public consultations on their national INDCs, including the participation of diverse groups such as indigenous peoples and youth.[39] This shows that the INDC process in Latin America (and elsewhere) is far from optimal.

Some Mexican civil society experts have questioned that country's INDC. The World Wildlife Fund (WWF) in Mexico raised concerns about Mexico's reliance on fossil fuels for electricity generation and about the lack of long-term coherence in energy policy. Other groups were also critical of how little time was provided for civil society groups to participate during the INDC consultation period. The Climate Finance Group for Latin America and the Caribbean lamented the lack of details on how the INDC would be implemented.[40] The Climate Action Tracker, which monitors the pledges and contributions of countries, has rated Mexico's INDC as

"medium," as they deem it currently inconsistent with limiting warming below 2 degrees Celsius unless other countries make much deeper reductions and comparably greater effort.[41]

Brazil's Climate Observatory has commented on the zero net deforestation target in that country's likely INDC being already included in the 2008 National Plan on Climate Change, and that it should have been met by 2015, suggesting this part of the proposed plan lacks ambition.[42] Some Brazilian experts would like more transparency, and the level of ambition of the country's INDC remains unknown at this writing. Brazilian civil society is demanding that the government present its INDC to the public before officially submitting it to the U.N.[43] Brazil's mitigation contribution in its INDCs is likely to focus on forestry emissions, though it must also consider its agricultural sector and ever-growing energy sector, including power generation and transport. On adaptation, Brazil has opportunities to make contributions in transportation and urban development especially given the recent droughts exposing the risks diminishing water resources pose to existing infrastructure.

In the case of Chile, there are questions about how the contributions of citizens are being included (or not) in the INDCs. Chile's Mesa Ciudadana sobre Cambio Climático wrote to the Chilean minister for the environment expressing concern for what it described as a lack of information on how observations would be taken into account, and whether it could challenge the government if ideas were rejected. Civil society groups have submitted comments on the draft, and considering the level of specialized expertise from civil society and academia, the government can benefit from some of this information.[44] NGOs worry about the forestry section of Chile's draft INDC due to their concern about the sustainability of Chile's forestry industry and the treatment of indigenous communities.[45]

The Peruvian collective, Grupo Perú COP, made up of civil society and indigenous peoples groups among others, has called on the Peruvian government to ensure the INDC process is conducted in an open way that includes the participation of civil society.[46] In Costa Rica, civil society groups report that the information about the INDC is not easily accessible or transparent. The country will need to put forward projections for mitigation and future emissions under current energy plans for a fully developed INDC.[47]

WHAT LATIN AMERICAN INDCS SHOULD INCLUDE

Countries have considerable flexibility as to how they present their INDCs, but there are some basic and important requirements to ensure they are ambitious, inclusive, and fair. Countries should offer a peak year for emissions, preferably before 2030. They need to also specify the *level* at which emissions will peak, as Mexico did. Countries could also follow Mexico by including both an unconditional and conditional pledge, to demonstrate to developed countries what is possible to achieve with the correct support. A strong focus on adaptation is paramount given the vulnerability of Latin American nations to climate impacts. The baseline year of 1990 should be used to avoid problems of comparison, and reductions from "business as usual" projections create far too much uncertainty in what the targets actually mean, so they should be avoided.

A strong emphasis on scaling up non-conventional renewable energy (solar, wind, geothermal, and small hydro) and the inclusion of a renewables target consistent with their emissions reduction pledge is useful. This is essential to provide multilateral development banks and donor countries with this information so they can support

specific areas in the implementation of the INDC. The issues of energy efficiency, fossil fuel subsidiary reform, sustainable urban transport, and the protection of vulnerable ecosystems and forestry should also be emphasized. Lastly detailed information about how the preparation of the INDC was inclusive and participatory and whether the INDC will be subject to external non-state evaluation prior to the submission deadline in October 2015 should also be included.

The U.N. climate talks have been unable to create consensus on what constitutes a fair and ambitious contribution, given deep differences between countries on questions of capability, responsibility, and equity. The guidelines agreed upon by countries on the design and scope of the INDCs requires countries to consider how their INDCs are fair and ambitious in light of each country's national circumstances, and how the INDC contributes to achieving the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. At present, the U.N. Climate Convention and the parties do not agree on the official definition for fairness and ambition, but metrics such as historical responsibility, mitigation potential, and per capita emissions can be considered to explain "fairness" in sharing the effort of combating climate change.[48] We find the Climate Equity Reference Calculator, a tool developed by EcoEquity.org to allow comparison of a nation's pledges with their responsibility and capability, useful in providing a nongovernmental assessment of national INDCs and previous pledges, for their level of adequacy and whether they meet national "fair shares."[49]

Latin America is currently responsible for around 9.5 percent of global greenhouse gas emissions. In comparison, the U.S. is responsible for 16 percent and China for about 31 percent.[50] However, Latin American countries' total greenhouse gas emissions per capita, including land-use change and forestry, reveal a different story. The region's average total greenhouse gas emissions per capita including land-use change and forestry are around 7 tCO2e per capita with vast disparities between countries.[51] A high group produces over 10 tons of CO2 per capita (e.g. Argentina, Venezuela, and some Caribbean nations), a middle group produces around 5-7 tons (Brazil, Chile, Mexico and Peru), and the lowest countries produce under 3 tons (Costa Rica, El Salvador, and Haiti).[52] Looking forward, some Latin American countries' per capita emissions could surpass those of some European countries if no action or limited action is taken.

Given the thorny issue of fairness, Latin American countries could explore the advantages and disadvantages of adopting a long-term emissions convergence goal, such as one whereby all countries' emissions converge to 2 tCOeq per capita by 2050. The Inter-American Development Bank (IDB) says preventing irreversible damage to the planet would require global emissions to not exceed a yearly 20 gigatons of carbon dioxide equivalent (or 2 tons per capita) by 2050. Under the business as usual scenario, Latin America and the Caribbean per capita emissions will reach 9.3 tCO2e by 2050.[53] To achieve the 2-ton goal would require a significant worldwide shift toward low-emission development. The IDB outlines some of the available pathways for Latin American and Caribbean countries to contribute to this global stabilization goal by 2050, including actions to stop deforestation, reducing emissions from agriculture, boosting energy efficiency, and deploying renewable energy and electrifying the transport sector. The region's countries should consider including in their INDCs a region-wide aspirational and conditional target of 2 tCO2e per capita target by 2050, which would be contingent on the necessary support from rich countries. Latin American INDCs should therefore be explicit about the type of support they will require in areas such as technology transfer, finance, investment, and capacity building. This information may help international partners better understand and target their support.

FACTORS AFFECTING CLIMATE ACTION

We now set out to understand the likelihood of Latin American countries making ambitious climate pledges, by evaluating their current and recent past actions in a few key areas that influence national climate action. Case studies from Brazil, Costa Rica, Mexico, Peru, and Venezuela are presented with a focus on how domestic and international factors are either helping or hindering climate action.

To do so, we ask the following: What role do these countries play at the U.N. climate talks? What are their flagship policies in areas that have an impact upon climate change, specifically on energy, forests, cities and transportation? How successful are these policies? What factors explain the level of progress made by each country on climate change? We look at how development models based on certain industries or exploiting natural resources might hamper the implementation of climate policies or support the development of proactive and ambitious contributions to the U.N. climate negotiations.

Brazil

Brazil has sharply reduced deforestation in the Amazon rainforests since 2004 and can claim one of the cleanest energy systems in the world, thanks to its extensive hydropower and biofuels systems. These successes provided the political space for former President Luiz Inácio "Lula" da Silva to bring forward an ambitious pledge in 2009 at COP15: a reduction of emissions by between 36.1 and 38.9 percent below business as usual projections by 2020.[54] Brazil also pledged an 80 percent reduction and a 40 percent reduction by 2020 of deforestation in the Amazon region and Cerrardo region. To make these pledges domestic realities, the National Policy on Climate Change was passed in 2009 and followed by Decree No. 7390 in 2010.[55] Despite land use and forestry emissions being down 72 percent in the decade before 2011, fossil fuel energy emissions were up by 105 percent.[56] The endurance of Brazil's climate initiatives remains uncertain.

Since Dilma Rousseff succeeded President Lula in 2011, the positive climate agenda seems to have faded and been replaced by ambivalence and a more traditional developmentalist focus. The Climate Change Performance Index (Germanwatch and Climate Action Network's evaluation of climate protection performance of the 58 highest-emitting countries) ranked Brazil best in the world on climate change performance in 2010 and 2011. However, Brazil slipped to 7th place in 2012 and to 33rd place in 2013 largely because of its growing emissions under Dilma.[57] Dilma's speech at September's U.N. Climate Summit reminded attending leaders and diplomats of Brazil's ambitious measures at Copenhagen and of its past accomplishments in emissions and deforestation cuts, but avoided making any new commitments to maintain the momentum on climate that Lula created.[58] Very recent discussions suggest there may be some room for greater ambition.

Positions at the UNFCCC

Brazil has played an active role at the U.N. climate negotiations and was instrumental in creating the Kyoto Protocol and its Clean Development Mechanism. Brazil has historically sought to position itself between rich and poor countries. Brazil considers itself a leader in the global South and emphasizes South-South cooperation particularly through its membership in the BASIC (Brazil, South Africa, India, and China) group that emerged

as a negotiating bloc in 2009. Brazil is arguably an outlier in the group, since it has a strong record of domestic emissions reductions, especially in reducing deforestation. By joining BASIC, Brazil complicated its relationship with its regional neighbors and the many developing countries seeking ambitious action from the emerging economies.[59] Brazil is also part of the Group of 77 and China (the 134 developing nations), and has consistently supported that group's demands that more technical and financial assistance be provided from the global North to the South. In contrast with China and India, Brazil has not joined the Like Minded Group of Developing Countries (a smaller group within the G-77 that tends to take a harder line). In UNFCCC negotiations, Brazil has centered its positions on three principles: (1) every nation has a sovereign right to national development; (2) the Amazon should not be subject to international interference; and (3) wealthy, industrialized nations must accept historical responsibility for emissions and compensate poor nations for the costs of climate change.

Prior to the Lima climate conference in 2014, Brazil announced a proposal called "concentric differentiation." It consists of three concentric circles. The innermost is occupied by developed countries with absolute, economy-wide emissions reduction targets; the middle one includes emerging economies, with intensity, per capita, or relative reduction targets; and the outer circle includes other developing countries with non-economy-wide targets. Every country should move toward the center over time, according to its respective capabilities (generally interpreted as GDP per capita). Although the proposal has been regarded as constructive, the concentric differentiation approach is also perceived as a way for Brazil to avoid taking on commitments (or at least delaying them), and insisting on developed countries taking responsibility for causing climate change.

Flagship Domestic Policies

Energy. More than three-quarters of Brazil's electric power is supplied by hydroelectric dams, making the country the world's second-largest hydropower producer.[60] Brazil's increasing energy demands coincided with its most severe droughts in 50 years,[61] thereby rendering hydroelectric plants unable to provide sufficient power. Acute shortages of electricity elicited widespread calls for greater use of fossil fuels, a more reliable energy source than hydropower, and for greater diversification of power generation in general. The Brazilian government both acted to increase fossil fuel consumption and forayed into commercial solar power generation, though it lags far behind the goals of other emerging markets.[62] Brazil has 1.5 times the power of the huge Belo Monte hydropower project in wind under contract to be built by 2019.[63] The Energy Expansion Plan for the period of 2008-2017 created by the Ministry of Mines and Energy explicitly calls for the expansion of fossil fuel-based power stations and has driven the increased use of natural gas power plants in recent years. In addition, the discoveries of Pre-Salt led the Brazilian government to launch a 10-year energy plan in 2013 to expand oil production.[64] Although there is some progress on promoting wind power, Brazil is far from capitalizing on its potential for renewable energy beyond big hydro with a worrying shift back to fossil fuels.

Forests. For many years, Brazil's high rates of deforestation, which contributed up to 75 percent of its total emissions in 2004, made it the third-largest greenhouse gas emitter in the world.[65] This changed with the creation of the Action Plan for Prevention and Control of Deforestation in the Legal Amazon under former President Lula and Environment Minister Marina Silva. Deforestation dropped by 75 percent relative to the 1996-2005 historical average,[66] and drove an associated 30 percent reduction in the country's total emissions.[67] But deforestation in the Amazon and Cerrado regions has increased in the past two years. President Dilma

Rousseff has focused singularly on economic development at the expense of progressive deforestation policy, passing key provisions of the Forest Code.[68] The Ruralista agribusiness lobby is a potent force in Brazilian politics and is making forest preservation difficult.[69] Mining also represents a formidable threat to Brazil's forests.[70] The soaring levels of Brazil's agricultural exports to China also represent a significant barrier to achieving further deforestation reductions.[71] Brazil resisted the U.N. REDD+ (Reducing Emissions from Deforestation and Forest Degradation) mechanism when it was proposed in 2005. Brazil asserted its independence by establishing its own means to finance conservation and reforestation projects: the Amazon Fund, which collects donations from national and international sources and is managed by the Brazilian Development Bank.[72]

Cities/Transportation. Several cities in Brazil have passed laws establishing municipal climate change policies,[73] and Belo Horizonte, Rio de Janeiro, and São Paulo have set goals and deadlines for reducing greenhouse gas emissions.[74] Curitiba is world famous for innovating bus rapid transit and transit-oriented development planning; now 75 percent of all commuters take the bus. The city has one of the lowest ambient air pollution rates in Brazil, and per capita income loss due to severe congestion is 11 times lower than in São Paulo.[75] Nationally, the transportation sector was responsible for roughly 30 percent of CO2 emissions and of all energy consumed in Brazil in 2007.[76] Brazil's total vehicle fleet grew by 230 percent from 1990 to 2005.[77] President's Rousseff has since attempted to boost Brazil's economy by suppressing diesel fuel prices and creating tax breaks for car buyers. Although "flex-fuel" cars, which can run on either ethanol or a gasoline-ethanol blend, represent 84 percent of new cars purchased in Brazil, use of ethanol as transportation fuel depends on it being more than 30 percent cheaper than gasoline because of its lower embodied energy. Despite failing to lower ethanol prices relative to gasoline prices, Dilma did expand a tax credit to sugar and ethanol producers through a program entitled "Reintegra."[78]

Analysis. The increasing emissions from Brazil's energy, transport, and agricultural sectors, and the development of the Pre-Salt oil and recent increases in annual deforestation rates demonstrate the difficulties in maintaining some of the early progress of Brazilian climate policy. Lula's Copenhagen pledge appears now to have been an exception to the more enduring focus on growth and sovereignty.[79] That the "lowest-hanging fruit" of Brazilian climate policy—deforestation reductions—have already been harvested makes Brazil's next steps tougher politically. Building cooperation with partners in other major emitting nations to sharply scale up solar, energy efficiency, wind, forest management, adaptation, and (carefully expanded) biofuels can be part of a more comprehensive climate policy as part of Brazil's much anticipated INDC.[80] Of the countries reviewed here, Brazil's INDC has perhaps the most potential to either boost or deflate the important momentum building in 2015 towards an adequate agreement in Paris.

Costa Rica

Costa Rica's population is 4.7 million.[81] It has a GDP per capita of $12,900, ranks high on the Human Development Index[82] and has a footprint of 1.7 metric tons per capita CO2 emissions. The combustion of fossil fuels (especially transport), agriculture sectors, and the manufacture of cement are the country's greatest contributors to greenhouse gas emissions. Reforestation accounts for a *negative* amount of emissions, serving as a significant carbon sink. The country's pledge to become carbon neutral by 2021 was a bold step, but there are concerns of some contradictions and delays in national policy which will make this goal unattainable. Multiple projects

and initiatives on climate change are underway in Costa Rica. The bottleneck is that lack of integration of the projects and initiatives in ways that mainstream climate neutrality in development decisions. Dealing with institutional obstacles inside ministries and increasing domestic leadership might be needed to overcome barriers and to deliver on its carbon neutrality goal.

Positions at the UNFCCC

Costa Rica is a proactive country at the U.N. climate negotiations and is a founding member of AILAC. Costa Rica's global vision entails keeping global targets below 350 ppm and allowing a maximum temperature increase of 1.5 degrees Celsius,[83] combined with a narrative that all countries must do their parts regardless of size. Costa Rica's mitigation pledges are framed around the aspiration of being a carbon neutral economy by 2021, and for years the focus has been on REDD+ and reforestation. In September 2014, Costa Rican President Luis Guillermo Solís said at the Climate Summit in New York that emissions from transportation would be a central pillar for their carbon neutrality target and pledged the construction of an urban rail system as a priority. On adaptation, Costa Rica proposes the creation of a framework that increases international cooperation and supports adaptation measures that are urgent and needed. Costa Rica made the implementation of its carbon neutrality goal conditional upon receiving finance, declaring its commitment to the transparent and efficient use of all funds.

Flagship Domestics Policies

Energy. Part of Costa Rica's carbon neutrality target is anchored on the ability of its forest to capture greenhouse gas emission. Other actions, on clean energy and agriculture, are contained in the National Climate Change Strategy and its associated nationally appropriate mitigation actions with a focus on agriculture. The National Plan on Climate Change includes mitigation and adaptation including building resilient infrastructure and strengthening institutional mechanisms of cooperation to address the challenges and opportunities of climate change in various economic sectors.[84] The 2008-2021 National Energy Plan aims to diversify the energy matrix by promoting sustainable transportation and the development of renewable energy (including solar), promoting energy efficiency, and reducing of fossil fuel consumption.[85]

In September 2014 President Solis said Costa Rica will generate 100 percent of its electricity from renewable sources by 2016 thanks to a new hydropower project. The President also reiterated the country's commitment to carbon neutrality and said the country would continue to explore and produce geothermal energy.[86] In the previous administration, the legislative assembly passed a preliminary general climate change law which has drafted in the context of a GLOBE program to promote climate legislation around the world.[87] The bill never went to a second round due to a pushback from civil society, political parties, and research organizations that revealed a weak public consultation process. Some issues have also emerged around emissions accounting. How Costa Rica calculates its emissions has raised some questions, because the methane emissions from hydropower plants (produced by rotting vegetation submerged in reservoirs) are often not accounted for.[88]

Costa Rica has also stated it needs financial assistance from international donors in order to deliver the carbon neutrality pledge by 2021. According to the Climate Action Tracker, Costa Rica will not be able to achieve car-

bon neutrality by 2021 with current policies in place.[89] The main concern raised by researchers is that business as usual in Costa Rica will mean that emissions will continue increasing, but the country will not have enough forest stock in 2021 to make up for those emissions. The country will only achieve a substantive reduction in emissions if it implements ambitious actions in transport complemented with actions in agriculture and other sectors.[90]

Forests. In the 1980s, Costa Rica had one of the highest rates of deforestation in the world. Today, Costa Rica has become a pioneer in the use of market mechanisms to reduce deforestation.[91] The country's Payment for Ecosystem Services Program (PPSA) compensates private forest owners to conserve or restore the land. The National Forestry Financing Fund (FONAFIFO), the implementing body of the PPSA, states that PPSA has been responsible for the reclamation of 52.4 percent of forest cover in 2010.[92] PPSA also serves as an instrumental part of Costa Rica's REDD+ policy. Forest cover sprang back from only 21 percent of its national territory in 1986 to 51 percent by the late 2000s.[93] Costa Rica received a large World Bank Forest Carbon Partnership grant in 2009 to assist with its readiness preparation proposal as part of its UN-REDD process, and the country has attempted to identify all relevant stakeholders, including indigenous peoples, other forest-dependent peoples, rural landowners, and other groups in an attempt to make the process inclusive.[94] The Costa Rican state, however, has come under criticism for failing to prevent attacks fueled by land rights issues on indigenous peoples.[95]

Cities/Transportation. While Costa Rica has been a pioneer in terms of its carbon neutrality vision, the country has not tackled emissions from its transportation sector. In the 2014 U.N. Climate Summit, President Solís announced plans to develop an articulated transportation system that include the integration of an electric train and with the bus system as well as the use of biofuels.[96] This is particularly relevant given that 60 percent of the country's emissions come from transportation and gasoline and diesel use amounted to 75.3 percent of total fuel use. While most of Costa Rica's environmental policies have focused on conservation and, more recently, climate-friendly strategies, the momentum for urban issues is growing. New groups are promoting cycling as a way to get to know the city and reduce crime rates by making sure citizens are occupying and exploring urban spaces.The delivery of electoral promises on clean transportation is also being monitored by citizen groups for the first time.[97]

Analysis. While Costa Rica has pioneered ideas in sustainable development in Latin America, policy contradictions might undermine its progressive policies and goals. Its clean electricity coexists with a high dependence on imported oil, thus attracting criticism of its energy future. Some have criticized Costa Rica's carbon neutrality goal, saying that it may not offer a clear direction on the transformative action that the nation needs.[98] While Costa Rica's carbon neutral target is notable, there are doubts about its feasibility, especially in light of a proposed oil refinery upgrade funded by China.[99] The project was put on hold following the identification of a conflict of interest in the planning stage.[100] The new Solís administration has not ruled out the oil refinery upgrade, and the negotiations with China have been reopened amid claims that it will incorporate green elements.[101] While the country recently ranked the highest in climate change adaptation, there is still some concern by local organizations—such as Costa Rica Limpia—about the implementation of adaptation policies on the ground.[102]

The climate change agenda does not currently seem a top political priority in Costa Rica and if the country does not meet its carbon neutrality goal it risks tarnishing its green reputation. Costa Rican analysts are calling for the reversing of Costa Rica's weakening environmental performance, pressing the government to keep to its carbon neutral pledge and to push for action on transport. There appears to be mixed messages coming from Costa Rica. For example, a narrative of green development underlies the extension of the moratorium on oil exploration and exploitation to 2021, but at the same time the country is willing to take on a loan to scale up oil infrastructure in the country. That is why the INDC by Costa Rica matters. It could reassure peers that that the country will continue being committed to low-carbon growth and environmental leadership.

Mexico

Mexico is a diverse country of 122 million residents, with abundant natural resources. As a developing country with strong ties to developed countries such as the United States, Mexico is in a different position than many other developing countries. Mexico has proposed ambitious goals for reducing its emissions, but greater international financial support is required to achieve them. Of Mexico's 723.19 MtCO2e of greenhouse gas emissions, about two-thirds are from the energy sector (490 MtCO2e).[103] Mexico's 2012 General Law on Climate Change commits the country to reduce greenhouse gas emissions by 30 percent by 2020 and a 50 percent by 2050 (both from 2000 levels of emissions), and to obtain 35 percent of its energy from renewable energy by 2024.[104] Mexico was able to pass the law through congress by a landslide in part because of the leadership by former President Felipe Calderón but also because of growing concern about climate change by citizens, experts, and lawmakers that has been heightened by extreme drought and flooding.[105]

Positions at the UNFCCC

Mexico is a member of the Environmental Integrity Group with Liechtenstein, Monaco, South Korea, and Switzerland. Mexico is a hybrid country—both an OECD member and a developing country—that offers positions that attempt to build consensus between developed and developing countries. Mexico's active involvement in the climate negotiations is partly driven on domestic concerns over the country's considerable vulnerability to climate-related disasters. In 2008, Mexico made a major proposal for a World Climate Fund, an idea that was transformed into the Green Climate Fund, which was officially signed in Cancun in 2010. As the first heavily-populated oil-exporting country to ratify the Kyoto Protocol, Mexico has a long history in the international climate change negotiations and strongly emphasizes the importance of multilateralism. Mexico's hosting of the 2010 U.N. climate negotiations in Cancun were widely regarded as rescuing the multilateral climate talks following the fractious negotiations in 2009 in Copenhagen. As the first developing country to announce its INDC, and one of four Latin American countries to pledge funds to the Green Climate Fund, Mexico is generally regarded as a constructive and proactive actor. However, although civil society groups in Mexico and elsewhere are generally supportive of Mexico's global efforts on climate, they remain dissatisfied and critical of how Mexico's global efforts translate into real progress back home.

Flagship Domestic Policies

Energy. Mexico introduced a carbon tax in January 2014, though natural gas was exempt. Recent efforts on energy include shifting from oil to natural gas, and focusing much of the renewable energy effort on wind

power.[106] President Enrique Peña Nieto's energy reform policies intend to revitalize the economy and stagnant oil and gas industry by securing foreign investment, which was previously prohibited by Mexico's constitution. Oil and gas production could rise significantly in the coming decades, potentially undermining previous legal mandates to reduce greenhouse gas emissions.

Forests. Mexico has substantial forest reserves, but deforestation remains a problem.[107] In 2004, Mexico began a program to pay landowners—especially those in indigenous communities—for the environmental benefits of standing forests.[108] While deforestation was reduced by over 50 percent in areas where the program was in place, there is concern that deforestation will shift elsewhere.[109] Narcotraffickers often utilize forest paths, so some enforcement agencies have found that some deforestation necessary to combat this.[110]

Cities/Transportation. Mexico City's unique geographic position in a valley creates smog inversions, so the city has long been known for severe air pollution. In 1992, the U.N. declared Mexico City "the most polluted city on the planet."[111] The urgency of the issue prompted Mexico to introduce a series of comprehensive programs—named ProAire—over the last two decades, and the city has recorded impressive reductions in local air pollution and CO2 emissions.[112] Mexico has invested in the mitigation of emissions from city transportation by launching programs on federal, municipal, and city levels. Mexico received $1.5 billion from the World Bank's lending arm to support steps that promote long-term sustainable practices in transportation.[113] The MX Urban Transport Transformation Program seeks to systematically modernize mass transit, aiming to reduce fuel inefficiency and set greenhouse gas emissions standards in transportation. Regulations on CO2 emissions and fuel economy equivalent for new passenger vehicles are expected to reduce CO2 emissions by 170 million tons over the period from 2013 to 2030.[114] Efforts are being taken to address sprawl and support construction of energy-efficient residential buildings to mitigate emissions in urban areas.

Analysis. Mexico's economy and society are very vulnerable to climate change impacts. Mexico's climate change law and INDC demonstrate its efforts to reduce emissions, despite the current absence of any binding obligation under the UNFCCC. Mexico has made some progress on promoting renewable energy but there is still considerable potential to be tapped. In 2013, hydroelectricity supplied about 11 percent of Mexico's electricity generation, with non-hydro renewables representing 3 percent.[115] Mexico has set a national target of obtaining 5 percent of its power from renewable sources by 2018, a goal that is lower than the 8.2 percent goal seen in previously released draft policies. This is a modest step toward achieving Mexico's existing long-term target of obtaining 35 percent of its energy from renewable sources by 2024.[116]

The recent energy reforms may boost fossil fuel production for export by 75 percent.[117] Northern Mexico, with abundant natural gas, will likely see a boom in fracking that will exacerbate water shortages and potentially cause contamination while the Gulf of Mexico will face risks associated with deep-water exploration.[118] The Mexican Center for Environmental Law has expressed concern that fossil fuels will not be replaced by renewable energy sources quickly enough to achieve the 2020, 2024, and 2050 emission reduction and clean energy targets.[119] Renewable energy needs far greater support if the goals are to be reached,[120] as laid out in the draft Energy Transition Law that passed in Mexico's Chamber of Deputies but stalled in the Senate.[121]

Peru

Peru has an estimated population of 30 million, of which 77 percent live in urban areas and 9 million in the capital city, Lima. Despite the significant economic growth Peru has experienced since the early 1990s, its economy still lags behind some other countries in the region, with a GDP per capita of $4,066[122] and a total GDP of $202.3 billion. Peru emitted 153.65 MtCO2eq in 2012,[123] 47 percent from land use and land-use change and forestry (LULUCF), followed by the energy sector (21 percent), agriculture (19 percent), industrial processes (7 percent) and waste (6 percent).[124] President Ollanta Humala's administration has carried on the strong market-oriented policies and as a response to a recent economic downturn has further limited environmental regulations in order to speed up investment. These rollbacks in environmental policy pose a threat for the advancement of Peru's climate and environmental agenda, and thus have been met with strong criticism from the public and Peruvian and some international NGOs.

Positions at the UNFCCC

Over the past decade, Peru has sought to bridge the gap between developing and developed countries. At the 2008 U.N. climate talks in Poznan, Poland, Peru became the first developing country to announce voluntary emission reduction targets, offering to reduce the net deforestation of primary forests to zero by 2021, to produce 33 percent of its total energy use from renewable sources by 2020, and to implement measures to reduce emissions caused by the inadequate treatment of solid waste. This voluntary pledge was later submitted as part of Peru's 2020 pledge under the Copenhagen Accord. Peru is a founding member of AILAC and has participated in the Cartagena Dialogue for Progressive Action, an informal group that aims to build consensus at the climate talks.[125] By hosting the Lima climate talks prior to the Paris conference, Peru put itself in a position of leadership in the Latin American region at a critical time in the negotiation process. Peru was also one of the four Latin American countries pledging funds to the Green Climate Fund.

Flagship Domestic Policies

Energy. Peru has a plan known as PLANAA (Plan Nacional de Acción Ambiental) that has pushed Peru to take action to reach its objectives, including the creation of its Climate Change Plan (PlanCC) to jumpstart Peru's transition to a low-carbon nation. With an energy sector that represents over 20 percent of Peru's greenhouse gas emissions[126] and energy demand growing at a 9 percent annual rate,[127] boosting Peru's renewable energy resources will be crucial to reduce the country's carbon footprint. Peru's energy matrix has seen a substantial shift away from petroleum, with production decreasing by 25 percent between 1998 and 2009.[128] During this period, however, the production of natural gas increased 11-fold due to the exploitation of reserves in the Amazon and the 2004 introduction of tax incentives promoting the growth of this sector.[129] Hydropower continues to deliver about half of Peru's electricity but solar, wind, and geothermal have been slow to catch up. A 2008 law promoted renewable energy as a priority[130] and created accelerated tax depreciation schedules to incentivize investment in this sector. There are plans for a large number of hydroelectric dams to be built over the next 20 years in Peru, which represent a 300 percent increase,[131] and Peru has created a longer-term plan to diversify its energy matrix.[132] Yet natural gas continues to show sustained growth. Government regulations have kept the price of natural gas at a level lower than the international price.[133] Despite major capacity, wind, solar, and geothermal are largely untapped.

Forests. Peru has created protected areas,[134] but deforestation accounts for nearly half of its emissions, and the country's vulnerability to drought and other climate impacts could undo the advances it has made in channeling economic growth into sustained poverty reduction.[135] Under PLANAA, the National Plan for Conserving Forests for Mitigating Climate Change calls for attaining zero net deforestation in 54 million hectares of primary forest by 2021, and other changes in land use practices against a baseline year of 2000.[136] In doing so, Peru hopes to completely eliminate the 47.5 percent of its emissions currently attributable to land use change. Illegal logging in the country is a major barrier to these national policies: as much as 80 percent of Peru's timber harvest is illegal.[137]

Peru had 41 pilot projects under REDD+ as of July 2012.[138] The national system for monitoring forest carbon has reportedly been difficult to establish,[139] and trade in forest products to China and the U.S. are increasing, as are exports in mining, hydrocarbons, and agriculture. These sectors require that roads and other infrastructure be built into Peru's vast Amazon region. Peru's trade agreements with China and the EU both expressly stipulate forest protection measures,[140] but the 2008 free trade agreement with the United States led to a deadly confrontation between police and indigenous Peruvians protesting the agreement, which was seen as encouraging foreign mining and oil exploitation on their lands.[141]

Cities/Transportation. Lima—the largest city in Peru—continues to grow, leading to myriad environmental problems, especially air pollution from the transport sector and increased greenhouse emissions as the vast and aging fleet stands gridlocked in traffic. Dirty diesel, poor public transport, and a vast informal sector contribute to making Lima the city with some of the worst air pollution in Latin America. A main challenge in transportation policy is the fact that Peru's import regime exempts used vehicles from sales taxes, which incentivizes the entry of old, inefficient vehicles to the market.[142] A 2007 law sought to speed the retirement of diesel vehicles, and Peru has reduced sales taxes for the purchase of new vehicles converted to natural gas (which unfortunately are still difficult to find on the highways).[143] Better urban planning is also urgently needed to lower the environmental impact of the transportation sector. After scrapping highly-polluting buses, Lima's first bus rapid transit (BRT) corridor and increased bicycle infrastructure are among initiatives underway.[144]

Analysis. Peru has increased its international and domestic commitments to climate action, illustrated specifically by its ambitious pledges to the UNFCCC and National Environmental Action Plan (PLANAA). Despite significant advances, Peru's recent economic downturn and decelerated growth—due in part to depressed commodity prices for copper—has taken the focus off of environmental issues and back onto the economy. In June 2014, the Peruvian congress approved an economic reform package proposed by the president aimed at speeding up private investment through the weakening of environmental sanctions and regulations (No. 30230, called informally as *paquetazo ambiental*).[145] These rollbacks in policy illustrate that the government sees a tradeoff between economic prosperity and environmental standards, thus challenging the strengthening of climate action and mitigation and adaptation strategies. Indigenous communities will be most affected by this ruling.

Despite these setbacks, the completion of the first phase of Peru's PlanCC that analyzes the feasibility and implications of the country's transition to a low-carbon economy is encouraging.[146] The first completed phase has developed a study and analysis of different development scenarios and their respective implications for climate

change mitigation, building a strong knowledge base to support the national policies and strategies necessary to reach mitigation targets for 2021 and 2050,[147] and hopefully for a well-informed INDC. Peru is currently looking to pass a climate change framework law that emphasizes the need to consider climate change implications in all government actions and that aims to provide more agency and responsibility to the institutions in charge of designing and implementing mitigation and adaptation strategies. Civil society groups, universities, indigenous groups, and unions were involved in the drafting of the proposal.[148] Hosting the 2014 U.N. climate talks sparked an unprecedented level of attention to climate change in Peru, but how this focus will translate into medium and longer-term action remains to be seen.

Venezuela

Venezuela has a population of almost 29 million people and ranks 67th for human development indicators out of 187 countries.[149] Since taking office in 2013, President Nicolás Maduro and the National Assembly have followed a six-year plan first proposed by the late President Hugo Chávez.[150] The Plan 2013-2019, emphasizes the preservation of sovereignty over national oil reserves while maintaining that climate change must be managed globally. Under this plan, the government intends to almost double oil production from 3.3 million barrels a day in 2014 to 6 billion in 2019 and increase natural gas production by a third, from 7,830 million cubic feet per day in 2014 to 10,494 million cubic feet per day in 2019.[151] The country's primary source of federal income is oil, and low oil prices coupled with high government spending (Latin America's highest percentage of GDP) and $106 billion in foreign debt have hurt the economy.[152] Roughly half of Venezuela's debt is owed to the Chinese government, whom Venezuela intends to pay by delivering 200,000 barrels of oil a day.[153] However, lower oil prices are raising fears that Venezuela might default on its debt to China.[154] High inflation rates have triggered widespread social unrest and major protests.[155]

Venezuela has the world's largest oil reserves and how it manages them is a critical point. Venezuela in 2011 was responsible for 381 MtCO2e, which is 0.84 percent of global emissions.[156] And it has the second highest per capita energy sector emissions in Latin America after Trinidad and Tobago.[157] According to Venezuela's first and only national communication to the UNFCCC, submitted 10 years ago, emissions from the energy sector are responsible for 75 percent of national emissions followed by the agricultural, waste, and industrial sectors.[158] Given Venezuela has only submitted one National Communication to the UNFCCC, this raises questions about how the country monitors its emissions and whether it is building scenarios that can inform its national mitigation plan.

Position at the UNFCCC

At the U.N. climate change negotiations, Venezuela condemns capitalist regimes for the effects of climate change and has approached the issue from a social justice narrative.[159] In these negotiations, Venezuela is part of three negotiating blocs: the G-77, ALBA, and the Like-Minded Group. Each of these prioritizes a right to develop over domestic actions to mitigate emissions—often treating them as clashing objectives. ALBA consists of 11 member countries from Latin America and the Caribbean and ALBA opposed the Copenhagen Accord and the lack of transparency at the negotiations in 2009. The Like-Minded Group is focused on industrialized countries' performance and why they should act first in global emissions reduction efforts due to their historic

responsibility.[160] They have resisted some of the calls by other developing countries—including Island States and AILAC—to adopt legally binding climate commitments. Venezuela has not yet announced a national contribution for the Paris agreement and there is no information on the process that is being used to inform its design. In late 2014 Venezuela hosted the first-ever social pre-COP with the theme "Change the System, not the Climate," focusing on the linkages between capitalism and climate change and arguing that an overhaul of the global capitalist system is necessary to effectively combat climate change.

Flagship Domestic Policies

Energy. Venezuela has no plans to make the transition to renewable energy but it has made some limited progress on promoting wind power in addition to its extensive use of hydropower. A government program distributed 70 million energy-efficient lightbulbs in a national energy efficiency campaign (Sembrando Luz), but there is no comprehensive energy efficiency legislation. In 2012, Venezuela announced plans to implement a program limiting greenhouse gas emissions across four sectors (including the petroleum industry), but these plans have not been implemented yet.[161] According to ClimateScope 2014, which assessed global climate investments, Venezuela ranked second-to-last (behind Suriname) out of the 55 countries examined in their ability to attract capital for low-carbon energy sources and efforts to build a green economy.[162]

Venezuela's energy sector harnesses 70 percent of its electrical power through hydropower operations, while the remaining 30 percent is generated through fossil fuel combustion.[163] In the past decade, Venezuela's electricity demand increased by 48 percent, but has only increased supply by 20 percent. During the severe drought of 2009 and 2010, the president declared an "electricity emergency" which led to demand-side regulation measures. Venezuela has renewable energy potential such as wind and solar. It also has the second largest natural gas reserves in the Americas, which to this point have been primarily used for industrial practices. In 1999, Venezuela passed the gas hydrocarbons law with the intent to broaden its energy supply with a system that gives ownership of the project to private operators, unlike the oil sector. A shift away from oil, whether to renewables or even natural gas, could spur economic diversification and greater resilience of the energy matrix. This could make the country less vulnerable to droughts, which are likely to increase due to climate change and affect hydropower generation.

Forests. Deforestation has been a challenge for Venezuela, given that 54.1 percent of the nation is forested. From 1990 to 2005, 7.5 percent of its forest cover was destroyed caused mostly by agricultural expansion, oil exploration and mining.[164] The country's flagship reforestation policy is *Misión Arbol* which aimed to engage citizens at the community level to preserve their local environment and promote sustainable development. Over the past decade, the project encouraged the planting of over 30,000 hectares of trees,[165] or about 2 percent of the amount of forest cover lost in Venezuela during that same period.[166]

Cities/Transportation. Caracas is one of the most polluted cities in Latin America. Caracas does, however, have a network of buses and subways and a cable car system was recently installed that can shuttle 1,200 people per hour in each direction from the outskirts into Caracas.[167] This system is a showcase for sustainable development, as each of the five stations supports photovoltaic panels on the roof and wind turbines nearby to power the system. However, the Venezuelan government is doing little to reduce private car ownership in part

because the country has the world's cheapest gasoline prices. The federal subsidy scheme totals over $12 billion a year. About five million vehicles burn an estimated 300,000 barrels of oil a day, and fuel efficiency is anomalously low. There has been talk of raising the gasoline price, but history indicates that this price hike could be politically dangerous. In 1989, violent riots caused hundreds of deaths when the gasoline price was raised.[168] Legislators are working towards a plan in which public transit would be exempt from gas price increases.

Analysis. Venezuela has made no active effort to promote climate legislation or a clean energy transition plan,[169] which may or may not be the result of a vision that limits the responsibility of climate actions to developed countries exclusively. The Venezuelan government does mention concern for climate change in their 1999 constitution, the Second Socialist plan, the Organic Law of the Environment, and other official documents. Yet this has not translated into concrete action on mitigation or adaptation. While these legal instruments point to the importance of "sustainable development" as established in the 1992 Río Declaration, government actions indicate that economic development is a priority, nearly entirely overshadowing environmental sustainability. Venezuela's emissions are most likely far higher than officially claimed since their most recent reporting dates back to 2005, an accounting trick that supports their argument that they are insignificant on global emissions.

The gap between Venezuela's rhetoric in the UNFCCC and its concrete climate actions at home can be attributed to the dominance of the oil sector in the economy and the lack of institutional capacity to enforce environmental laws. Oil accounts for 95 percent of export earnings, over 50 percent of federal budget revenues, and roughly 30 percent of gross domestic product.[170] Even with plummeting oil prices, the economically dominant influence of oil will likely not diminish.

The size of Venezuela's oil deposits has lured in foreign investors, most notably China. Subsequent conversations in 2008 between leaders of both countries led to a 2010 deal in which the China National Petroleum Corporation agreed to assist Venezuela in developing the Orinoco oil field.[171] Venezuela said in 2011 that it would invest $5 billion in the Orinoco oil belt with a robust goal of increasing production to 4 million barrels a day by 2014, and 10 million barrels per day by 2030.[172] President Maduro signed further agreements with China upon entering office, and Venezuela is now the China Development Bank's largest foreign borrower.[173]

FINAL THOUGHTS

Latin American countries are more active on climate issues than in the past, and are playing important leadership roles at the U.N. climate change talks. Some are taking concrete steps to reduce their emissions voluntarily this decade, ahead of the Paris agreement that will enter into force in 2020. Despite some progress, however, a lack of implementation and policy incoherence remain a core challenge. Much still stifles or undermines policy and voluntary actions to tackle climate change: the energy reforms in Mexico that favor fossil fuels; Peru's economic reform packages built on weaker environmental management; a likely oil refinery in Costa Rica; Brazil's rising deforestation and soaring private vehicle use and fossil fuels support; and Venezuela's near total reliance on oil production. A better integration of energy and climate objectives will make the design and implementation of INDCs more likely and potentially transformative.

Latin American countries approach Paris amid modest and in some cases alarmingly poor economic projections for this year. This presents a particular challenge for cash-strapped environmental ministries that have a relatively weaker voice inside governments. Climate policies could suffer when governments fail to see the connection between climate, energy, and the economy. The challenge this year is to sustain the momentum for climate change action as a political priority. The past five years have seen concrete progress in Latin America, progress that needs to be protected from the notion that climate action "can wait" or is too costly.

Latin America is at a crossroads as governments decide internally and in negotiating groups what they are willing to contribute to a new climate agreement in Paris. The U.N. climate negotiations benefit whenever countries from Latin America offer ideas for breaking impasses and promoting ambitious climate action for all. Taking into account the economic costs of climate impacts in Latin America, the region has much to gain from a global regime that significantly reduces emissions collectively.[174] The region can benefit from continuing its active role in promoting adaptation as a core pillar of the Paris agreement.

A participatory and inclusive INDC process can provide a boost to existing climate policies and help make the case for legislation that could secure commitment for action in the future. The imperative for climate action is ultimately not about carbon per se, but about mainstreaming climate change into national and local development goals. A focus on adaptation, increasing the deployment of renewable energy and construction of sustainable transport, reducing fossil fuel subsidies and protecting biodiversity is essential to achieve a more sustainable and resilient development that builds prosperity for the Latin American people.

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