



CLIMATE
& ENERGY

2019

THE CASE FOR AMBITION

Practical lessons for enhancing
NDCs in Latin America



PERU

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Nature-Based Climate Solutions AN INNOVATIVE FINANCE MECHANISM FOR FOREST PROTECTION BY INDIGENOUS PEOPLES IN PERU

To protect the world's most valuable rainforests, there are often two key conditions that need to be met: finding the finance necessary to protect them, and ensuring that local people have a stake in their conservation. A project underway in Peru seek to meet these two objectives.

Where Peru is now

With almost 60% of its territory covered by forests, Peru accounts for the second largest part of the Amazon rainforest, after Brazil. The main source of its emissions comes from land use in the Peruvian Amazon, which accounted for 51% of the country's GHG emissions in 2012, and with the conversion of forests to pastures as its major component – these represent over 90% of the sector emissions and over 45% of the country's total emissions.¹ Peru has pledged in its Nationally Determined Contribution (NDC) to reduce its emissions by at least 20% in 2030 compared to 2010, or by up to 30% conditional on international assistance.²

Each year, an average of more than 150,000 hectares is deforested in the Peruvian rainforest by natural-resource dependent economic activity such as illegal or unsustainable agriculture, gold mining and logging.³ Addressing this deforestation will be central not only to Peru meeting its climate targets, but also in defending the livelihoods and lifestyles of its 300,000 indigenous people, protecting its rich biodiversity, and ensuring that its forests continue to provide vital ecosystem services such as providing clean water.

¹ Ministry of the Environment Peru. El Perú y el Cambio Climático. <http://www.minam.gob.pe/wp-content/uploads/2016/05/Tercera-Comunicaci%C3%B3n.pdf>

² Ministry of the Environment Peru. 2016. Nationally Determined Contribution (NDC). <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Peru%20First/iNDC%20Per%C3%BA%20english.pdf>

³ National Forest and Wildlife Service (SERFOR). Interpretación de la dinámica de la deforestación en el Perú y lecciones aprendidas para reducirla. <https://www.serfor.gob.pe/wp-content/uploads/2016/03/Interpretacion-de-la-dinamica-de-la-deforestacion-en-el-Peru-y-lecciones-aprendidas-para-reducirla.pdf>

Indigenous peoples as a living barrier to deforestation: DGM Saweto Peru

Saweto is a small village, deep in the Peruvian Amazon, whose people - the Ashaninka - have been battling to protect its forests from the pressures of illegal logging. It is in recognition of their efforts that the Dedicated Grant Mechanism for Indigenous Peoples and Local Communities – funded by the World Bank’s Forest Investment Program (FIP) -- is named by the national Amazonian indigenous organizations.

DGM Saweto Peru provides legal, educational and financial support to help indigenous and local communities to improve forest management practices, thus helping reduce deforestation. This support includes establishing legal rights of indigenous peoples over their lands, supporting indigenous governance and community forest management and underwriting economic ventures to provide employment.

Specifically, DGM Saweto Peru seeks to protect 780,000 hectares of indigenous peoples’ territories. It funds field actions undertaken by local and regional indigenous organisations, working in close coordination with national and subnational governments, contributing towards better territorial governance, halting rampant deforestation, and training local people in forest management.

The five-year project is led by the Interethnic Association for the Development of the Peruvian Rainforest (AIDSESEP) and the Confederation of Amazonian Nationalities of Peru (CONAP), both Indigenous Peoples organizations, with the support of WWF. Within two years of its 2015 launch, it had achieved 60% of its objectives: over 200 indigenous communities recognised by the National Registry of Native Communities, 80 communities in the process of establishing legal title over their land, and with the process to undertake land-title registration speeded up, from 10 per year to 10 per month. The project also formalised 17 indigenous organisations, empowering them to manage their own resources, and trained more than 100 of their representatives to help them do so.

In addition, it is funding 70 sub-projects to enhance food security, including agroforestry, fish farming and non-timber forest management, five sustainable timber sub-projects, and has US\$500,000 allocated to sub-projects launched and/or managed by women.

The governance of the project has been recognised as a model for replication in other social processes, and inspired AIDSESEP to develop a broader strategy to contribute to Peru’s NDC named Minga NDC-Peru⁴ that involves 11 transformative actions to help indigenous communities draw up alternative development strategies to address climate mitigation and adaptation.

Lessons learned from Peru

The Paris Agreement recognises the role of indigenous people in the protection of forests and preventing changes in land use and land cover. In the Amazon region, 90% of deforestation takes place in unprotected lands, while only 8% of indigenous lands are subject to deforestation. Fostering indigenous land security and its optimal management by local communities offers opportunities to tackle deforestation whilst generating sustainable development outcomes.

Public and private sector investment can be aligned to strengthen and expand protected areas to both protect nature and promote the well-being of those who depend on it. By establishing participatory management committees that represent local communities and other stakeholders, sustainable finance mechanisms can be designed and managed to provide opportunities for local people to benefit from the sustainable use of natural resources and tourism, giving them an incentive to protect the rainforest.

⁴ “Minga” is a word used in Peru to describe a collective social work. Minga NDC-Peru is the contribution of indigenous peoples to the NDC with 11 strategic contributions to meet and increase the goals of reduction and adaptation of National Determined Contributions (NDC) and the Paris Agreement to which the Peruvian government has subscribed.



COLOMBIA

Nature-Based Climate Solutions PROTECTED AREAS AS TOOLS FOR ADAPTATION AND MITIGATION IN COLOMBIA

Protected areas, and other effective conservation measures, provide one of the most promising examples of nature-based solutions that can help mitigate climate change, by preventing emissions from deforestation or by allowing natural systems to absorb more carbon. They can also build climate resilience through adaptation plans that strengthen the effective and adaptive management of these areas. Expanding protected areas provides opportunities for countries revisiting their NDCs to boost their climate targets.

Colombia has set clear and measurable targets for increasing its protected areas, offering an example to other countries seeking to increase the ambition of their NDCs.

Where Colombia is now

Colombia is one of the most biologically diverse countries on Earth, with natural forests that cover more than half its landmass home to close to 10% of the planet's biodiversity, with 55,000 animal and plant species.⁵ Despite a domestic economy revolving around extractive industries, Colombia has had a strong political role in the global effort to combat climate change and decarbonise the global economy. Its NDC sets a target to reduce its per capita greenhouse gas (GHG) emissions by at least 20% compared with 2010 levels by 2030, and, with international support, to increase this target to 30%.⁶

⁵ Convention on Biological Diversity. Colombia - Country Profile. <https://www.cbd.int/countries/profile/default.shtml?country=co>

⁶ Ministry of Environment of Colombia. Intended Nationally Determined Contribution (iNDC). <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Colombia%20First/Colombia%20iNDC%20Unofficial%20translation%20Eng.pdf>

Scaling up protected areas in Colombia

The expansion of the National System of Protected Areas (SINAP) is one of Colombia's priority mechanisms for both mitigation of climate change – given the consolidation of natural carbon stocks involved and for avoiding emissions from deforestation – and for adapting to a changing climate, not least in protecting the availability of clean water.

During the first five-year period of the Paris agreement (2015-20), the Alliance for the Conservation of Biodiversity, Territory and Culture – co-led by WWF, National Natural Parks of Colombia, Wildlife Conservation Society (WCS), the Argos Foundation and the Mario Santo Domingo Foundation – has helped Colombia exceed its NDC target for protected areas. The country had initially pledged to declare 2.5 million hectares of new protected areas; by 2019, that figure exceeds 4 million hectares.

In coordination with the Government of Colombia and other organisations, WWF has been working on four areas : (i) updating policies for planning and management of the SINAP; (ii) increasing knowledge about and improving monitoring of climate risks and the capacity to adapt to such risks; (iii) strengthening SINAP's governance processes, ensuring the specific inclusion of climate mitigation and adaptation in its planning; (iv) seeking financing to maximise the role of SINAP in the climate agenda through mechanisms to secure funds for long-term protection of natural areas.

Fundamental to this process was the recognition that protected areas provide vital, valuable services for people as well as nature. Rainfall in SINAP areas feeds rivers used by water utilities, benefiting approximately 50% of the current population, while forests help reduce floods and landslides, especially during El Niño and La Niña phenomena. These areas also protect biodiversity, benefiting communities that derive income from ecotourism, sustainable timber, and agroforestry.

Lessons learned from Colombia

Actions to integrate the climate agenda into the SINAP are the result of an inter-institutional effort, which includes different parts of Colombia's government (including national ministries and regional and municipal governments), civil society, non-governmental organisations, and financial and technical support from international actors. Efforts that bring together multiple actors are needed to tackle climate and biodiversity issues in a coordinated manner.

While many countries have committed to adding or expanding protected areas, NDCs could be strengthened to include specific, measurable targets, with timetables, to track progress, such as those adopted by Colombia.

Colombia's approach involved elevating the important role played by protected areas in reducing deforestation and habitat destruction and helping people adapt to climate change. Natural ecosystems, conserved and managed in an adaptive way, and taking climate resilience into account, can maximise the contributions they make to human welfare, which in turn encourages local communities to continue to protect them.



MEXICO & ARGENTINA

Alliances for Climate Action BUILDING DOMESTIC MULTI-SECTOR COALITIONS TO ENHANCE CLIMATE ACTION IN LATIN AMERICA

Addressing climate change will require new coalitions to emerge – at the local level, among sub-national governments, and between civil society groups, within countries and internationally. Enormous resources, experiences and analysis are being generated around the world – and a key challenge we face is making the connections to allow these to be shared, rather than requiring everyone to start from first principles.

Alliances for Climate Action (ACA) is a global network of domestic multi-sector coalitions committed to supporting the delivery and enhancement of their countries' climate goals. ACA connects cities, states, the private sector, investors, universities and civil society at the domestic level so that they can work with each other and with their national governments to drive climate action. The founding partners of the network are WWF, Avina Foundation, CDP, C40, CAN, The Climate Group and We Mean Business. As of mid-2019, ACAs have been launched in Argentina, Mexico, Japan and the United States.

Below we review the work of two ACAs in Latin America: Alianza para la Acción Climática de Guadalajara, in Mexico, and Alianza para la Acción Climática Argentina.

Mexico: Alianza para la Acción Climática de Guadalajara

Mexico's NDC commits the country to reducing emissions to at least 25% below business as usual by 2030, with a pledge to increase that goal to 40%, conditional on international support.⁷ It also includes a target to "increase the adaptive capacity and reduce vulnerability in 160 municipalities", creating an opportunity for sub-national, private sector and civil society groups to work with the national government to help fulfil its climate goals.

One sub-national government which has seized that opportunity is the Guadalajara Metropolitan Area (GMA), comprising nine municipalities and making up the second largest local authority in Mexico, with a population of 5 million people. GMA has been undertaking ambitious action on climate change for some years, with the participation of the state and municipal governments, academia, businesses and civil society. These actors have been working together to build a liveable, resilient and sustainable city in the context of a changing climate.

To increase their impact, the Alianza para la Acción Climática de Guadalajara (ACA-GDL) partnership was launched in 2018. The alliance, supported by WWF, includes 35 Mexican entities, including the IMEPLAN, the metropolitan planning institute, the University of Guadalajara, the State of Jalisco's Ministry of the Environment and Territorial Development (SEMADET), and business and civil society stakeholders.

By strengthening local participation, ACA-GDL engages different actors to build local social power based on the unity trust, cooperation and commitment of its members with a focus on improving energy efficiency, expanding renewable energy, handling solid waste properly, promoting sustainable urban mobility, sustainable production and responsible and moderate consumption, as well as creating highly resilient societies in Guadalajara.

The alliance has identified collaborative projects addressing energy efficiency and renewable energy in buildings, promoting urban forests and improving waste management. It is supported by experts on climate change, urban development and sustainability, who help identify untapped opportunities. In the near future, this will mean the creation of a portfolio of actions to be implemented by members of this alliance.

This strategy serves as an inspiration for other cities in the country to meet national climate commitments and, importantly, to encourage greater climate ambition in Mexico.

Argentina: Alianza para la Acción Climática Argentina

In Argentina, agriculture, cattle ranching, forestry and other land use are together responsible for 39% of the country's GHG emissions, representing the second largest source after energy.⁸ Climate change impacts are a global threat to food production and, given Argentina's position as a major food exporter, this is an area of priority for its government. Over the last two decades, agricultural production in the country has decisively shifted towards genetically modified soybeans, maize and cotton, which in most of the country are produced without irrigation, making food production more resilient to climate impacts and representing an opportunity for its agricultural production in global markets.

This is the context for the creation in 2018 of the Alianza para la Acción Climática Argentina (ACA-ARG). It brings together Argentinian local governments and non-state actors, including a number involved in the agricultural sector. The coalition seeks to create a national platform through the design and implementation of joint and coordinated actions that contribute to accelerate climate action in Argentina.

The alliance is starting a conversation about what kind of development is needed for those parts of the country that face changes to rainfall and resulting impacts on agricultural production. It involves Argentina's Environmental Protection Agency, a number of key municipalities and regional governments, foundations and NGOs, and no fewer than 2,000 private producers of agro-commodities across Argentina.

Lessons learned from Mexico & Argentina

The collaboration between subnational and non-state actors can help spread lessons learned in one jurisdiction to another. The participation of international NGOs, foundations, businesses and other organizations can facilitate the exchange of lessons, insights and analysis that local organisations can find difficult to access on their own.

However, the key members of these alliances are domestic actors, who have local knowledge, networks and contacts that are invaluable for enhancing climate ambition. Multi-sector alliances are also important, bringing different perspectives and helping to manage trade-offs that are inevitable with mitigating and adapting to climate change.

⁷ Gobierno de México. Compromisos de Mitigación y Adaptación ante el Cambio Climático para el Periodo 2020-2030. https://www.gob.mx/cms/uploads/attachment/file/162974/2015_indc_esp.pdf

⁸ Ministry of Environment Argentina. Greenhouse Gas Emissions National Inventory - Argentina. <https://inventariogei.ambiente.gob.ar/files/inventario-nacional-gei-argentina.pdf>



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BRAZIL

Nature-Based Climate Solutions SUSTAINABLE AGRICULTURE DEVELOPMENT TO HALT DEFORESTATION IN CERRADO

Deforestation never takes place in a vacuum; it is often a response to demand for commodities that can originate many thousands of miles away. Raising awareness along international commodity supply chains – and extracting commitments to change behaviour from traders, consumer goods companies and retailers – can help protect invaluable natural habitats, such as Brazil's Cerrado.

Where Brazil is now

Brazil's NDC commits the country to reduce its greenhouse gas (GHG) emissions by 37% below 2005 levels by 2025 and 43% by 2030.⁹ Deforestation is the major source of Brazil's emissions, with that in the Amazon accounting for 52% of total emissions from its land use sector. Brazil made enormous progress in reducing deforestation; with the creation of the Amazon Region Protected Areas (ARPA) in 2002 and the implementation of the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon (PPCDAm), included in its 2009 National Policy on Climate Change, rates of deforestation in the Amazon declined from more than 27,000 km² in 2004 to less than 5,000 km² in 2012.¹⁰

However, in recent years, such progress has gone into reverse. In 2018, deforestation in the Amazon increased 13.7% from 2017 levels, and 72% from the historic low reached in 2012.¹¹

⁹ Federative Republic of Brazil. Intended Nationally Determined Contribution (iNDC) <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Brazil%20First/BRAZIL%20iNDC%20english%20FINAL.pdf>.

¹⁰ Climate Policy Initiative. DETERring Deforestation in the Brazilian Amazon: Environmental Monitoring and Law Enforcement. <https://climatepolicyinitiative.org/wp-content/uploads/2013/05/DETERring-Deforestation-in-the-Brazilian-Amazon-Environmental-Monitoring-and-Law-Enforcement-Executive-Summary.pdf>

¹¹ Sistema de Estimativa de Emissão de Gases de Efeito Estufa. EMISSÕES DE GEE NO BRASIL. <http://seeg.eco.br/wp-content/uploads/2018/08/Relatorios-SEEG-2018-Sintese-FINAL-v1.pdf>

Although less well known than the Amazon, the Cerrado biome is the second largest in Brazil. Covering 21% of the country, the Cerrado savanna is home to 5% of the planet's biodiversity and is where the most important rivers in South America originate. Since the 1950s, the expansion of soy and beef production has driven the loss of almost half of the original native vegetation. Conversion of the Cerrado is the second largest source of Brazilian GHG emissions, about 17% of its total emissions.

The Cerrado Manifesto

The conversion of Cerrado native vegetation to crop and livestock production makes the Cerrado one of the most endangered ecosystems on the planet, and leads to decreased water flows, reduced rainfall and prolonged droughts, in turn contributing to more frequent fires and threatening the livelihoods of smallholders and indigenous communities alike.

In 2017, in an effort to reduce the pressure on the Cerrado, 60 civil society institutions, environmental organisations and research centres, such as WWF, The Nature Conservancy, Conservation International, Greenpeace Brazil, IPAM and Imaflora, came together to launch the Cerrado Manifesto. It calls on companies that purchase soy and meat from the Cerrado, and investors active in these sectors, to act immediately to protect the biome by adopting and implementing effective policies and commitments to eliminate conversion of native vegetation and to refuse to buy commodities sourced from recently deforested areas.

Since its launch, more than 130 companies have signed the Manifesto. Additionally, in November 2017, the China Meat Association and 64 leading meat companies signed the Sustainable Meat Declaration, including an explicit pledge to avoiding deforestation and conversion of natural vegetation in livestock production and feed value chains.

In parallel, The Cerrado Working Group, a spin-off the Grupo de Trabalho da Soja (Soy Working Group), has become an important forum for discussion on how the soy sector can eliminate conversion of the Cerrado from its supply chain. This group brings together commodity traders, end-customers, researchers, government and civil society, with an objective of reaching an agreement on how to eliminate deforestation from the Brazilian soy value chain.

Lecciones aprendidas desde Brasil

The Cerrado Manifesto and related initiatives demonstrate the value of innovative partnerships: civil society groups can work with those whose economic decisions can cause – or prevent – deforestation. It shows the importance of working not just locally or nationally, but also at the international level, given that the vast majority of the commodities produced in Brazil is exported to Asia, Europe, and the US, and regionally to other countries in South America.

It is fundamental to engage market actors to drive the development of commodities production to those areas that have already been cleared. In Brazil's cultivated pasturelands, increasing productivity from 30 to 50% would be enough to meet the growing demand for beef and crops without conversion of natural ecosystems. Traders and meatpackers can play an important role in supporting farmers to improve their practices. International and local NGOs, as well as governments, can stimulate and facilitate such partnerships.



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Energy Transition

SCALING UP ELECTROMOBILITY IN URBAN TRANSPORTATION IN CHILE

Transport accounts for almost a quarter of global carbon dioxide emissions, with urban transport making up about 40% of the energy consumed by end-users. As well as impacting climate change, vehicles are a major source of local air pollution that causes respiratory diseases, especially in cities, which increases the attractiveness of switching to electric vehicles.

Scaling up electric transport not only helps to decarbonise the economy, it also brings important benefits in air quality and public health and, potentially, less vehicle congestion and better urban transport. But electrification requires cooperation between government and non-state actors.

Where Chile is now

Chile's NDC commits the country to a 30% reduction in their greenhouse gas emissions (GHG) levels by 2030.¹² Currently, almost 40% of Chile's electricity is generated from coal.¹³ The transport sector is responsible for one-third of energy consumption in Chile,¹⁴ making it responsible for 20% of the country's greenhouse gas (GHG) emissions, and with strong impacts on local air pollution, especially in urban areas.

¹² Government of Chile. Intended Nationally Determined Contribution of Chile towards the Climate Agreement of Paris 2015. <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Chile%20First/INDC%20Chile%20english%20version.pdf>

¹³ Ministry of Energy Chile. Generación eléctrica en Chile por fuente. <http://generadoras.cl/generacion-electrica-en-chile>

¹⁴ Ministry of Energy Chile. Balance Nacional de Energía 2015. <http://energiaabierta.cl/visualizaciones/balance-de-energia/>

Decarbonization of public transportation in Santiago de Chile

Chile has positioned itself as a leader in promoting electric mobility in Latin America, launching in 2017 its National Electric Mobility Strategy, which has a goal of reaching 40% private electric vehicles and 100% electric public transport by 2050.¹⁵ It has also set a shorter-term goal, through its Energy Route 2018-2022, and is bringing together public and private sector actors to support the process.

The 2017 Electric Mobility Strategy is the product of cooperation between three ministries – energy, environment and transport – and its long-term goal is supported by a near-term plan. Energy Route 2018-2022 was presented in May 2018 by the Ministry of Energy of Chile with the goal of increasing by 10 times the current fleet of electric vehicles in the country by 2022, and introduce regulation to standardise the charging of electric vehicles and ensure their interoperability.¹⁶

In common with most countries, Chile is starting from a low base, with fewer than 100 electric vehicles in 2017. However, by the end of 2018, the total fleet in Chile had reached 525, including the roll-out of 103 new electric buses by Red Metropolitana de Movilidad, the public body which runs the bus system in the capital, Santiago, and with 60 electric taxis operating in the streets of the capital. In addition, the number of electric charging stations was doubled, from 22 in 2017 to 44 in 2018,¹⁷ with the support and individual commitments of 20 local organisations related to electric mobility and the training of 30 bus drivers.¹⁸

A public-private electric mobility consortium has been established with the objective of creating the conditions for Chile to become a leader in electric transport, with the support of the Ministry of Transport, the Mario Molina Research and Development Center, Chilean business association SOSOFA, private electric company ENEL, government economic development agency CORFO, UN Environment, and VTT Technical Research Center of Finland. Specifically, it is aiming to identify barriers to electric transportation in Santiago, build a technological consortium with the goal of developing strategies to create a supportive market, and set up an innovation platform around electric mobility. The consortium has an overall goal of ensuring that, by 2025, 25% of Red's fleet is electric.

By mid-2019, 6.5 million trips had been made on Red's electric buses, each of which displaces 60 tonnes of CO₂ each year, as well as reducing local air pollution. Chile is expected by the end of 2019 to have installed at least 150 public chargers, with a least one per state.

Lessons learned from Chile

Scaling up electric transport is key to reduce dependence on fossil fuels, while it also offers opportunities to make cities more sustainable. It also requires integrated planning action by different sectors of government (in the Chile case, energy, environment and transport).

It is crucial that critical mass is achieved, both in terms of electric charging infrastructure and overall fleet size. As well as subsidies – which can be expensive – there are numerous non-economic incentives that can be pursued, such as ensuring regulations favour electric vehicles, and imposing standardisation on charging, etc. to ensure interoperability.

¹⁵ Ministry of Energy of Chile. Ruta Energética 2018-2022: <http://www.energia.gob.cl/rutaenergetica2018-2022.pdf>

¹⁶ Ministerio de Energía de Chile. Ruta Energética 2018-2022: <http://www.energia.gob.cl/rutaenergetica2018-2022.pdf>

¹⁷ Ministry of Energy. 2018 Highlights: <http://www.energia.gob.cl/tema-de-interes/ministra-jimenez-destaca-los>

¹⁸ UN Environment. Electricity Mobility: Progress in Latin America and The Caribbean and opportunities for regional collaboration. <http://movelatam.org/wp-content/uploads/2019/01/MOVE-2018-Informe-regional-sobre-movilidad-electrica.pdf>



COSTA RICA

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Energy Transition TACKLING TRANSPORT AND MANAGING ENERGY TRADE-OFFS IN COSTA RICA

Some developing countries have considerable renewable energy resources, but face challenges in decarbonising transport sectors which rely on fossil fuels. Costa Rica, a leader in environmental sustainability, has made great progress in green power and is turning to emissions from its transport sector.

Where Costa Rica is now

In 2016, Costa Rica made a bold commitment to become one of the world's first decarbonised economies by 2050, a goal that was first established under its National Climate Change Strategy (ENCC).¹⁹ In its NDC, Costa Rica committed to reduce its greenhouse gas (GHG) emissions by 44% by 2030 and source all its energy from renewables by the same date.²⁰

Since the creation in 1949 of Costa Rica's state-owned electric utility – the Costa Rican Institute of Electricity (ICE) – the country has sought to increase its use of renewable energy in a diverse, sustainable, optimised and cost-effective system that guarantees electricity supply. This model, mainly based on hydropower, has resulted in electrical coverage of 99.4% of Costa Rican households and industry, with over 95% of power emissions free, making the country a leader in the energy transition.

However, Costa Rica faces two challenges: increasing its renewables penetration to 100% without building more large-scale hydro dams – because of their social and ecological impacts and to reduce the exposure of its power supply to changing patterns of rainfall; and reducing emissions from transport, which is still mostly petrol- and diesel-fuelled, and which accounts for more than 60% of the country's emissions.²¹

¹⁹ Government of Costa Rica. National Climate Change Strategy. <https://www.uned.ac.cr/extension/images/efcmdl/amas/recursos/cambio-climatico/plan-de-accion-estrategia-nacional-cambio-climatico.pdf>

²⁰ Government of Costa Rica. Intended Nationally Determined Contribution. <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Costa%20Rica%20First/INDC%20Costa%20Rica%20Version%202%200%20final%20ENG.pdf>

²¹ Ministry of Environment and Energy Costa Rica. VII National Energy Plan of Costa Rica 2015-2030. <https://minae.go.cr/recursos/2015/pdf/VII-PNE.pdf>

From clean power to clean transport

By 2014, renewable sources supplied almost 90% of Costa Rica's power, with hydropower accounting for two-thirds, geothermal 15%, wind 7%, biomass less than 1% solar just 0.01%.²² In 2015, Costa Rica published its VII National Energy Plan 2015-2030, which establishes policies and strategies to achieve 100% renewables by 2030. This plan also includes concerted efforts between the transport and energy sector, to enable a transition to electric public and private transport.

Since the implementation of the plan, Costa Rica has notched up some significant milestones: from 2015 to 2017, the country totalled 904 days where electricity was generated solely from renewables; in 2018, the country celebrated 300 consecutive days when no fossil fuels were used to generate power. During this period, almost 99% of the country's electricity has been generated from renewable sources, according to the National Centre for Energy Control (CENCE), with fossil generation used only when weather events prevent sufficient renewable production.

However, one of Costa Rica's main problems on the road to a carbon-neutral economy is ICE's continued reliance on large-scale hydropower developments. Climate change, which is causing shifts in rainfall patterns, is the biggest threat to the power system, and, in recent decades, a broad social movement comprised of environmentalists, local community organisations, and indigenous groups has repeatedly opposed these mega projects.²³

The Ministry of Environment and Energy of Costa Rica (MINAE) has addressed these concerns in its National Energy Plan, with a goal to diversify the energy matrix with increased participation of non-conventional renewable sources. In 2017, ICE stated in its latest Generation Expansion Plan (2016-2035), published in May 2017, that installed capacity already meets projected electricity demand for the next decade. This led to the suspension of planned large hydro projects, avoiding impacts on ecosystems, water reservoirs and indigenous communities.

However, while the picture for power generation is good, transport is more complex. In 2018, electricity only accounted for around a quarter of the country's energy consumption, with oil and gas products making up the rest. The transportation sector, which consumes two-thirds of this oil and gas, is a particular challenge.

This led to the launch in 2018 of a new National Plan for Electric Transportation and a law to promote and incentivise the electrification of the transportation sector.²⁴ Esto incluye el objetivo de reemplazar al menos el 5% de la flota de autobuses por autobuses eléctricos cada dos años, y garantizarThis includes a target of replacing at least 5% of bus fleet with electric buses every two years, and ensuring that at least 10% of new taxi concessions are given to electric vehicles, among other measures.

Extending ambition

The experiences of the country since 2015 on its energy transition encouraged the government to publish in February 2019 its National Decarbonisation Plan 2018-2050.²⁵ This increases the ambition of Costa Rica's 2030 and 2050 NDC targets, and extends its moratorium on the extraction and exploitation of oil and gas from 2021 until the end of 2050, setting out a clear road map to achieve a carbon-neutral country.

Lessons learned from Costa Rica

New policies and initiatives to incentivise public and private electric transportation technologies and to create the infrastructure to electrify the transport sector would lead to a 2030 emissions reduction equivalent to 19% of GHG reductions compared to business as usual. This demonstrates the potential of promoting electric vehicles within developing countries.

In the face of the climate emergency, most of the world's fossil fuel reserves cannot be extracted and burnt. Costa Rica has shown restraint in declining to exploit its potential oil and gas resources, instead focusing on renewable resources, notably hydropower.

However, here too are lessons for other countries. Costa Rica now faces threats to its energy security from the effects of rainfall variability and droughts on its hydroelectric plants. It has responded with investment in alternative renewable technologies to diversify its energy mix.

²² Costa Rican Institute of Electricity Group (ICE). Costa Rica: Un modelo sostenible, único en el mundo Matriz eléctrica. https://www.grupoice.com/wps/wcm/connect/8823524c-7cc7-4cef-abde-a1f06e14da0e/matriz_folleto_web2.pdf?MOD=AJPERES&CVID=18SK4gG

²³ Ludovico Feoli. The Policy and Institutional Effects of Contentious Politics in Costa Rica's Energy Sector. <https://www.jstor.org/stable/10.2307/26608621>

²⁴ Climate Action Tracker. Costa Rica. <https://climateactiontracker.org/countries/costa-rica/>

²⁵ Government of Costa Rica. Decarbonization Plan: Commitment of the Bicentennial Government. <https://www.2050pathways.org/wp-content/uploads/2019/02/Decarbonization-Plan-Costa-Rica.pdf>

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