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Long-term strategies for decarbonization in Latin America: Learnings from actor-based insights into the drafting process

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Long-Term Strategies for Decarbonization in Latin America: Learnings from Actor-Based Insights into the Drafting Process

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Abstract:

Long-term Strategies for Decarbonization, termed *long-term low emissions and development strategies* (LT-LEDS) by the UNFCCC, and sometimes referred to as LTS, can influence the transition to a resilient and decarbonized economy. LT-LEDS additionally make it possible to identify investments and regulatory changes needed to enable the deployment of new technologies and to identify measures which facilitate a just transition.

This study seeks to improve the understanding of the value that LT-LEDS can bring to climate policy and action at the national level, based on the perspective of local actors who have participated in their design.

The study explores the process of formulating LT-LEDS in Chile, Colombia, Costa Rica, and Peru. It combines three distinct methodologies, namely content analysis, literature review and semi-structured interviews with actors who participated in the LT-LEDS design processes.

We identify common aspects among these processes, as well as weaknesses and difficulties, and provide recommendations for formulating and updating LT-LEDS. Stakeholders expressed their appreciation for many of the attributes of LT-LEDS, for instance using simulations to demonstrate how long-term goals can be achieved, and the possibility of using LT-LEDS to assess and inform Nationally Determined Contributions (NDCs). However, LT-LEDS are sometimes perceived as instruments primarily designed to fulfill external requirements but disconnected from national development priorities (and from the need to improve resilience). In addition, LT-LEDS are not yet fully equipped to mobilize the private sector. The findings of this study can be taken into consideration to improve LT-LEDS drafting processes.

JEL Codes: Q54; Q56; D78; Q58

Key words: climate strategies; decarbonization; climate governance; Paris agreement; climate policy

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Executive Summary

Long-term Strategies for Decarbonization, termed *long-term low emissions and development strategies* (LT-LEDs) by the UNFCCC, and sometimes referred to as LTS, have the potential to influence the climate transition as instruments that guide and give coherence to the implementation of climate policies at the national level. They provide information for early identification of investment decisions, create opportunities for the deployment of new technologies and identify measures that facilitate a just transition.

By the end of 2021, 47 countries had submitted their strategies to the United Nations Framework Convention on Climate Change (UNFCCC) and many others are in the process of formulating and/or updating their strategies. The COP26 agreement motivates countries that have not yet done so to submit them and highlights the importance of updating their LT-LEDs on a regular basis.

Based on a qualitative study of the LT-LEDs formulation processes in four Latin American countries (Chile, Colombia, Costa Rica, and Peru), commonalities, weaknesses and difficulties were identified among the processes and recommendations were issued for the formulation and updating of the LT-LEDs. The methodology includes a content analysis, an extensive literature review and semi-structured interviews with a sample of actors involved in these processes. This study seeks to improve the understanding of the value that LT-LEDs can specifically bring to climate policy and action at the national level, based on the perspective of multiple local actors who have participated in these processes.

The study highlights a series of characteristics that were positively valued by the LT-LEDs actors

On the one hand, the use of *backcasting*¹ methodologies allowed countries to (i) think long-term, (ii) visualize decarbonization routes, and (iii) identify decisions that must be made in the short and medium-term to achieve the expected objectives. This generated a transversal contribution to planning capacities at the national level, implementing good practices in this area, which also can be transferred to other areas of public action.

On the other hand, the formulation of LT-LEDs in the four countries facilitated a more comprehensive and systemic understanding of the decisions that must be taken to trigger climate transition processes, prioritizing innovation in governance, as well as the integration of climate policy.

In the four countries, formulating the LT-LEDs allowed them to contextualize and identify the conditions necessary to achieve the goals expressed in the Nationally Determined Contributions (NDCs). However, not all case studies provided an implementation plan to reach the commitments.

¹Instead of projecting a long-term scenario based on the status quo, a long-term strategic objective is established and then used to define the necessary steps in the short, medium, and long term to achieve this objective.

The study made it possible to identify difficulties and weaknesses in the LT-LEDS formulation processes

The study showed that the LT-LEDS did not adequately reflect countries' climate change priorities and emergencies. Most of the interviewees stated that the priority remained the fulfillment of international commitments (with a strong emphasis on mitigation), but without linking these commitments to the main concerns at the national level. Specifically, the study points to difficulties which arise from not including certain stakeholders, or components for adaptation and resilience. The latter are relevant for creating additional political momentum that makes it possible to implement the strategies.

Second, the study argues that LT-LEDS are not recognized in these countries as a development strategy. In most countries, LT-LEDS function primarily as environmental policies, and the relevant sectors attend only as spectators to the processes, not as parties co-responsible for their success. In addition, the contents addressed in the LT-LEDS exceed the scope of action of the ministries of environment in terms of powers and capacity for implementation. This generates tension in the allocation of responsibilities and governing duties for their implementation unless line ministries are actively involved in the process.

Likewise, the study found that countries do not include a strategy to mobilize the private sector in their LT-LEDS. In most cases, the participation of the private sector and public sector owned companies remains weak. In the opinion of those interviewed, this limits the potential for implementing concrete action and thus to enable the transformation required to achieve carbon neutrality.

In addition, the concept of 'change management' is not a central element in the formulation of LT-LEDS. This results in weaknesses in identifying, involving, and working with change agents, and in the construction of the political environment necessary to move forward with the implementation of the strategies.

Main findings of the study

Based on this analysis, the study highlights the following findings:

1. The best LT-LEDS processes were found in countries that were able to integrate the external international mandate with the internal development mandate in the formulation of their strategies; the latter incorporates the priorities of national actors in terms of climate change policy.
2. Countries require an institutional body or working group that has the necessary legitimacy to lead discussions on the type of development that the country seeks to achieve, focusing on transformational action instead of only developing environmental policy.
3. Currently, the main conversation is not about the emission reduction target, nor about mitigation technologies and measures that could be adopted. The issue is how to drive decision-making that is consistent with existing roadmaps and move to the implementation stage, which involves integrating policy management and change management perspective into the design of LT-LEDS.

4. The implementation of LT-LEDS involves strengthening institutional capacities of the state to plan and manage comprehensive long-term policies under conditions of uncertainty, which forces the parties to explore new forms of governance.
5. Given the weaknesses that exist in terms of governance in the immediate horizon, the highest level of political support for advancing the implementation of LT-LEDS will remain key in the short term.

In addition, the analysis of the cases made it possible to identify the following factors that could impact the effectiveness of LT-LEDS:

- a) The slowness and difficulty of converging public sector governance and implementation capacity with the speed and complexity of the measures which must be implemented, and
- b) The institutional fragility of the countries, evidenced in their high dependence on international financing for the operation of the ministries of environment, and technical teams and academia supporting the government in these processes, as well as the deficits in terms of resource management capacity and implementation capacity at the sectoral and sub-national levels.

I. Introduction

The Paris Agreement sets the goal of limiting global warming – compared to pre-industrial levels – to below 2 degrees Celsius, preferably closer to 1.5 degrees. The implementation of the Paris Agreement is linked to two central elements. First, *Nationally Determined Contributions* (NDCs), which are mandatory documents that seek to establish mitigation commitments at the national level with a focus on a five-to-ten-year period. NDCs should be updated every five years with more ambitious reduction targets. Second, Article 4.19 of the Paris Agreement, voluntarily invites parties to formulate and communicate long-term Strategies for Decarbonization, termed *long-term low emissions and development strategies* (LT-LEDS) by the UNFCCC, and sometimes referred to as LTS.

The aim of these strategies is to provide a long-term horizon for NDCs and to define a strategic emission reduction target, which often translates into reaching carbon neutrality by the middle of the century. In addition, the LT-LEDS indicate the transformation routes and facilitate planning for the economic sectors, the operationalization of actions within the NDCs, and the long-term development of the countries. At the end of 2021, five years after the ratification of the Paris Agreement, 47 countries already communicated their LT-LEDS (Ross et al., 2021).

The international agreement reached in Glasgow in November 2021, which is part of the ongoing negotiation process under the United Nations Framework Convention on Climate Change (UNFCCC), emphasizes the urgency of increasing the ambition of mitigation and adaptation actions, as well as providing funding to close existing gaps, in this decade. 52 countries have announced their commitment to carbon neutrality, but the 2030 emission reduction targets expressed in the NDCs are not sufficient to stop temperatures from rising beyond 1.5 °C or exceeding 2 °C by 2050 (Binsted et al., 2020; IDB-DDPLAC, 2019; [UNFCCC, 2021](#)). For this reason, the Glasgow Pact calls for updating the NDCs toward the end of 2022 and urges countries to regularly announce and/or revise their LT-LEDS to remain on track for achieving the Paris Agreement goal, i.e., ideally, achieving zero net emissions by 2050.

Faced with this call, it is paramount to evaluate the conditions necessary for these instruments to fulfill their purpose, i.e. to serve as roadmaps for the design of policies that allow governments to plan short-term actions, to create a development path consistent with net-zero and to anticipate and manage any possible adverse effects of this transition (IDB-DDPLAC, 2019; IIED, 2020; IIED 2021; Jaramillo and Saavedra, 2021; Pathak, 2017; Torres, 2021; [Waisman, 2021](#); WRI, 2019; WRI, 2020).

The goals of these roadmaps are ambitious. Achieving a decarbonized economy implies unprecedented transformations that result in greater scale and pace in energy efficiency processes, strongly reduced carbon intensity of fuels, electrification, and food and land-use change. It also implies an integration of mitigation objectives with sustainable development that makes it possible to seize the opportunity for growth and generate employment while transitioning to a zero-emission economy (Vogt-Schilb et al. 2020; Delgado et al., 2021; Saget et al. 2020; Vogt-Schilb, 2021).

Specifically, over the next few years, countries will need to swiftly design and implement measures to: (i) decarbonize electricity production, (ii) electrify energy uses (electromobility, industrial and residential energy processes), (iii) improve public and non-motorized transport systems, (iv) stop deforestation and restore high carbon ecosystems to balance remaining emissions, and (v) improve energy efficiency and integrate circular economy principles in all sectors, particularly in energy, food consumption and industrial processes (IDB-DDPLAC, 2019; Bataille et al. 2020).

LT-LEDS play a central role in this transition. They act as an instrument that provides guidance and coherence for the implementation of climate policies at the national level, identifying early investment decisions, enabling conditions to deploy new technologies and create new markets. They additionally facilitate a just transition in accordance with the changes that must occur in the productive, social, and cultural systems existing in a country or region (Torres et al., 2021; Jaramillo, M., Saavedra, V. 2021).

For developing countries, LT-LEDS make their climate policy priorities visible both nationally and globally, integrating their development objectives into global mitigation efforts. They also support the identification of measures to respond to the impacts that climate change is already generating in their territories (LDC Climate, 2019; Swaby & Sokolowski, 2020). This point is especially relevant when mobilizing climate finance and international cooperation toward the priorities established by the countries themselves in their LT-LEDS (IIED, 2021; Waisman, 2021).

LT-LEDS face criticism from certain stakeholders. There is skepticism about their ability to materialize added value to global and national climate action, and whether the costs for their formulation outweigh their benefits. There is a risk that they will become documents that establish medium-term commitments without any monitoring or operationalization of action (Torres, 2021; Lazarus et al. 2009).

In this context, this study seeks to generate knowledge about the LT-LEDS formulation processes in developing countries, based on the experience in four Latin American countries: Chile, Colombia, Costa Rica, and Peru².

This analysis was conducted based on the input of people directly participating in the development of the strategies in these four countries. In doing so, the study aims to contribute to a better understanding of the challenges and opportunities that the development of these strategies generates for the countries, from the perspective of local actors who would benefit from them. Based on this analysis, it is possible to propose specific recommendations for the future development of climate strategies that effectively advance carbon neutrality.

The methodology is qualitative in nature. The work is based on a combination of content analysis, literature review and 58 semi-structured interviews³, carried out between the months of May and August 2021. The study seeks to identify the common characteristics and differences of the LT-LEDS development processes in the countries, based on the perception of the interviewees regarding the value this exercise provides to climate policy at the national level. From this perspective, the study identifies the main difficulties and weaknesses of these processes, with concrete recommendations that arise from the reflections of the interviewees. Thus, it is expected that the study will contribute to the available knowledge base and will help to create more effective approaches in the design and implementation of the LT-LEDS.

²The countries under study are part of the Climate Ambition Alliance, and are committed to following the recommendations of science, improving climate action by 2020 and achieving zero net CO₂ emissions by 2050. The four countries have considerable experience in climate planning processes and are at different stages in formulating their most recent climate strategies.

³The people interviewed were selected based on their participation in the formulation of the strategy (participants in its design, implementation, and process) and their role as representatives of the public, private, organized civil society and/or academia.

II. Case Studies

There is a before and after the Paris Agreement for each of the four countries, after which carbon neutrality appears as the standard vision statement that guides the development of climate policy in the medium term, with different levels of agreement on the feasibility and morality of achieving the result proposed for 2050.

The principles underlying the development of climate strategies in these countries are aligned with the methodology of the *Deep Decarbonization Pathway Latin American Countries* (DDPLAC) project, based on seven guiding principles: (i) alignment with multiple Sustainable Development Goals, (ii) formulation based on the best available science, (iii) alignment with the long-term objectives of the Paris Agreement, (iv) consideration of specific short, medium and long-term actions, (v) implementation of iterative and co-creation processes, (vi) adaptation to the country context, and (vii) training to favor a just transition (Jaramillo and Saavedra, 2021).

To address mitigation issues, the modeling was developed based on a *backcasting* approach. Starting with the definition of long-term vision and mitigation scenarios, multiple paths toward decarbonization were identified showing how the problem and the measures could develop over time. Subsequently, in most cases, planning gave way to the identification of sequences for the implementation of measures that make it possible to achieve the goals and objectives. The methodology incorporates active participation of stakeholders in all countries.

The four countries in the study were explicitly supported by international cooperation and multilateral institutions. They also worked in close collaboration with experts at the national level to carry out the forward-looking studies that feed the strategy formulation processes.

Colombia

Colombia began formulating its E2050 long-term climate strategy in June 2020, under the guidance of the President of the Republic, Iván Duque Márquez, led by the Ministry of the Environment and Sustainable Development and accompanied by the National Planning Department and the Ministry of Foreign Affairs. The formulation of the E2050 had strong support from the Government of France through its financial and technical cooperation agencies (AFD and *Expertise France*) who contributed to the financing, working methodology and executive management of the process (Government of Colombia, 2021b).

Colombia in its E2050 aims at being “a climate-resilient country that prioritizes human well-being, with a circular, carbon-neutral economy and territories and sectors with broad capacities for adapting to climate change, achieved from transformations that promote competitiveness, social inclusion, food security, strengthening governance and long-term sustainability” (E2050, 2021). The conceptual framework underlying this process is *Resilience Thinking*, which is intended to promote socio-ecological systems that can respond to change (Government of Colombia, 2021a).

The slogan “United for climate resilience” demonstrates the emphasis of the process and the nature of the document, whose central point is the identification of conditions that enable necessary socio-environmental and economic transformations in the long term, based on the definition of principles and transformation pathways to achieve climate change resilience (Government of Colombia, 2021a). The E2050 integrates mitigation, adaptation, and carbon capture. It proposes measures with the potential to maximize co-benefits and positive impacts

through coordinating public investments and the providing guidance for private sector investments (Ministry of the Environment of Colombia, 2018).

The governance design used for the strategy formulation included: (i) a strategic political level responsible for the validation of the strategy (by the Interministerial Committee on Climate Change), (ii) a high-level body created by Decree 298 of 2016 and the Climate Change Law, (iii) a Steering Committee (as the main agency responsible for the process), and (iv) a Technical Committee (responsible for generating guidelines to the Coordinating Unit led by teams formed by *Expertise France* on the implementation of the roadmap for the formulation of the E2050).

The process included four instances of participation and consultation: (i) thematic commissions, (ii) a plenary articulation board, (iii) national workshops, and (iv) a committee of experts. The thematic commissions formed working groups that shaped each of the transformation options. The plenary articulation board (which included the Directorate of Climate Change and Risk Management of the Ministry of the Environment and representatives of the Coordinating Unit) was the space to discuss and approve advances of the thematic commissions and to take general decisions. The workshops sought to include broader participation, socialize advances, and gather new perspectives while the committee of experts, made up of professionals and experts recognized at the national level, constituted a consultative/advisory body (Government of Colombia, 2021b).

In parallel, supportive technical studies were developed for the definition of commitments, which integrated models that made it possible to identify and assess mitigation, risk management, and resilience policies. The final version of the E2050 was presented to the Intersectoral Commission on Climate Change of Colombia and the Cabinet Council for its final validation.

In Colombia, climate change management at the national level is structured based on two instruments: the National Climate Change Policy and the Climate Action Law, and three specific instruments: (i) the National Plan for Adaptation to Climate Change, (ii) the Colombian Low Carbon Development Strategy, and (iii) the Comprehensive Strategy for Deforestation Control and Forest Management (Ministry of the Environment of Colombia, 2018).

In this context, the E2050 is seen as an indicative instrument that guides both public and private sector with respect to the adoption and integration of actions within the different policy instruments at the sectoral and subnational levels. These are: comprehensive sectoral and territorial climate change management plans (PIGCC), territorial plans, life plans, Development Programs with a Territorial Approach (PDET), Watershed Management and Management Plans (POMCA), and Integrated Management and Management Plans for Coastal Environmental Units (POMIUAC), among others (Government of Colombia, 2021b).

Given the integral nature of the E2050, its articulation with the National Development Plan formulated by the National Planning Department (DNP) would provide legal stability to the fulfillment of the strategy, since said plan would be formalized through a resolution and would commit the current government to the specific actions and results.

For the interviewees who participated in the process, the main strength of the E2050 is that it built a vision of the priorities and needs of the country, with a strong emphasis on resilience and adaptation and an analysis of the mitigation background considering political, economic, and institutional feasibility.

The perception of the interviewees was that the E2050 has the potential to concretely contribute to the development of planning instruments in the short and medium term, favoring the design of more coherent and relevant policies.

The interviewees also characterized the formulation of the E2050 as “systemic.” With this term, they refer to the way the plan integrated the different dimensions of the economic, social, cultural, and political life of the country relevant to climate policy, and the variety of actions necessary to enable a socio-ecological transformation that creates a resilient country with a decarbonized economy.

Costa Rica

Costa Rica has been a pioneer in anticipating the requirements of the international community by launching its National Decarbonization Plan in 2019. It intends to transform the country into a modern, green, and emission-free economy, and to strengthen its leadership in becoming a decarbonized economy with zero net emissions by 2050 (Government of Costa Rica, 2019).

In his inaugural speech, the President of the Republic, Carlos Alvarado Quesada, established a term of 90 days for the formulation of the plan, dictating guidelines regarding the results he hoped to achieve. He appointed the Ministry of the Environment and Energy and its Climate Change Directorate as responsible for the Plan and directly involved the Presidency, specifically the Office of the First Lady, in its design, monitoring, and coordination in the formulation.

Costa Rica formulated the plan through participation and consultation processes, articulating decision-making, and the generation of agreements between strategic actors. To understand visions and priorities and to establish a frame of reference for the long-term planning process, the first stage consisted of bilateral meetings with key actors, government authorities at the ministerial level, and executive presidents of central institutions involved in decarbonization activities. The second phase consisted of an expanded consultative process, in which two cycles of workshops were held, with around 350 participants, including representatives of the various sectors, civil society, and the international community.

The plan includes ten axes of decarbonization and eight cross-cutting strategies with specific sectoral goals for each axis, organized across three temporal stages of the path toward decarbonization. The first stage, called “foundations,” runs from 2018 to 2022. The second stage, or “inflection,” goes from 2023 to 2030, and finally “mass deployment”, which runs from 2031 to 2050.

The content of the plan emphasizes the avoidance of actions that generate a “*lock-in*” of investments that negatively impact the carbon neutrality goal for the year 2050. Costa Rica is currently formulating an investment plan for the financial demand necessary to achieve the goal of net emissions by 2050. At the end of 2020, there was a 25% advance progress in the implementation of the decarbonization plan and most of the goals had already begun (Government of Costa Rica, 2020).

The strategy further seeks to develop a governance system reflecting the “significance of structural change” proposed. It suggests taking initial or transitory action immediately to promote the decarbonization agenda while formulating a robust governance design in the medium term.

For the transition, the governance design included: (i) a “Governance Center” based within the Presidency, consisting of technicians appointed by the Presidency, the Ministry of Development and Planning (MIDEPLAN), the Treasury, and the Ministry of the Environment and Energy, (ii) a work team formed by MIDEPLAN and the Treasury to review, align and prioritize the public investment processes, and (iii) teams linked to the strategic areas of presidential coordination.

In its climate policy, Costa Rica has placed an emphasis on governance. The country is working on the creation of the Strategic Climate Change Planning System (SiPECC) that will update the NDCs and LT-LEDS, with permanent capacity for conducting independent analyses in climate action (Government of Costa Rica, 2020b).

The plan is aligned with the National Development and Public Investment Plan (PNDIP 2018-2022) which includes the commitments established in the NDC. The Decarbonization Plan is the starting point of the “Costa Rica 2050 Strategic Plan” that outlines Costa Rica's development model and the update of the National Adaptation Plan.

To date, progress in compliance with the plan has helped Costa Rica obtain a joint loan from the Inter-American Development Bank (IDB) and the French Development Agency (AFD), which supports the implementation of the Decarbonization Plan. They further indicate willingness to negotiate a second loan conditional to a continuous implementation of the Decarbonization Plan (Ministry of National Planning and Economic Policy, 2020).

For the interviewees, the Decarbonization Plan is the natural continuation of the country's process in terms of its climate change policies. Although the goals set have not been met, the process facilitated a common understanding between technocrats and economic and political groups, which in the opinion of the interviewees facilitated the acceptance of the progress toward a Decarbonization Plan by the year 2050.

The interviewees expressed the view that the National Decarbonization Plan is innovative compared to the traditional climate policy in Costa Rica. It addresses emission sources and includes dimensions beyond the environmental. The plan includes mitigation targets throughout economic sectors, as well as economic and institutional lines of action.

“Politically, the default ally on the subject of climate change was the forestry sector, which always played an important role. It continues to have an important contribution, but it is no longer the only ally. The important contribution of this transition has been to attack the issue of reducing emissions at their source, negotiating with emitters with the most significant carbon footprint: the transport, agriculture, and solid waste sectors, and they are included in the decarbonization plan with concrete goals.”

Two years after the plan was presented, the interviewees put an emphasis on how to advance its implementation. Although the document lists activities, objectives, goals, and responsibilities in detail, permanent articulation is still necessary, and defining how the proposed measures are to be carried out. At this stage, the Presidency functions as the focal point for the specific processes for each axis of action.

Likewise, the interviewees describe the process of formulating the National Decarbonization Plan with keywords such as “technical rigor,” “designed to be implemented,” and “high level of political leadership.”

Most of the interviewees highlighted and validated the technical robustness of the teams that modeled the decarbonization trajectories and identified potential co-impacts of the plan. They

also note that the collaboration between multilateral agencies, international cooperation, public officials, and experts of the University of Costa Rica has been fruitful, continuous, and fluid, which contributed to providing credibility, flexibility, and authority to the public sector in guiding the drafting process. The following quote represents this vision.

“... thanks to funding, mainly managed through international cooperation, and from the government itself, it has been possible to have a technical team from the University of Costa Rica collaborating closely with the government on a 24/7 basis to generate the content necessary to support decision-making. And this includes not only the formulation of studies and projects, but a continuous collaboration to clarify doubts and elaborate definitions.”

The interviewees indicated that the application of the methodology to future scenarios, developed by the University of Oxford and the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) – starting with the integration of a quantitative details – allowed for a feasibility analysis of the measures contained in the plan. This made it possible to evaluate its robustness and to identify those elements that are more fragile in the face of uncertain conditions, as well as those strategies that improve its implementation potential in different scenarios (IICA, 2021). In the opinion of the interviewees, this methodology makes it possible to generate momentum, facilitating agreements on the viability of the commitments made and providing clarity on the routes for implementation.

“There is always a more classic validation process, in which the results are presented to the actors..., but the most important thing about our method is to see if these climate measures could possibly be useful, to see if we think that they will work in the future.”

Finally, the interviewees highlighted the leadership of the President of the Republic, who made a call to formulate the plan, directly involved the Presidency in this process, and was active in building a development narrative around the vision of carbon neutrality.

Chile

Chile formally began the process of formulating the 2050 Long-Term Climate Strategy in May 2020, under the leadership of the Ministry of the Environment, materializing the commitment made by President Piñera in 2019 during COP25 to achieve carbon neutrality by 2050.

Chile seeks to consolidate the State's vision to face climate change, define the general guidelines that the country will follow to transition toward low-emission development (or even neutrality), reduce vulnerability, and increase resilience to the adverse effects of climate change (Ministry of the Environment of Chile, 2021b).

The strategy is the primary instrument at the national level for climate policy management (Ministry of the Environment of Chile, 2021b, p. 15). It establishes the long-term objectives, goals, and guidelines that will subsequently be materialized through actions and measures on mitigation and adaptation to climate change, such as Sectoral Mitigation and Adaptation Plans and Regional and Communal Climate Change Action Plans (Ministry of the Environment of Chile, 2021b).

The strategy integrates the commitments of the NDC 2020 as intermediate objectives for 2030 (Ministry of the Environment of Chile, 2021b, pg. 15) and contemplates the proposal of the Climate Change Bill. The latter establishes, among other things, the mandatory implementation

of the Long-Term Climate Strategy for the Chilean State, and its review and updating every ten years.

The Chile LT-LEDS stipulates the following governance elements: (i) Executive Direction of the process by the Ministry of the Environment, and (ii) an Interministerial Technical Team on Climate Change (ETICC), made up of representatives of the relevant institutions regarding climate change at the public level, whose function is to support the Ministry of the Environment in the development, implementation, and monitoring of climate change management instruments.

The process counted on the support and input of four committees: (i) the Advisory Committee for Climate Action,⁴ (ii) the Scientific Ministerial Advisory Committee on Climate Change,⁵ (iii) the National Advisory Council of the Ministry of the Environment,⁶ and (iv) the Gender and Climate Change Board⁷.

The participatory process was structured in three stages:

Stage one: 2,176 participants in a total of 71 online workshops identified content relevant to the definition of the strategy. In this stage, 6 multi-stakeholder working groups were formed with the participation of the public sector, NGOs, the private sector, academia, regional representatives, and young people, to generate a vision proposal for a neutral and resilient Chile. Subsequently, 22 focus groups were held to validate a methodological proposal for the determination of sectoral goals.

Stage Two: Formal citizen participation, based on the public consultation of the strategy proposal that included the receipt of comments via the citizen participation platform under the Ministry of the Environment and 44 regional workshops, including all the Regional Climate Change Committees who issued opinions on the strategy proposal.

Stage Three: 16 regional workshops were held to discuss the integration of subnational policies with the central level, including members of the Regional Climate Change Committees, advisory councils, and mayors, plus 16 regional workshops for climate action and regional integration, involving NGOs, academia, trade unions, and the youth. Finally, to address the evaluation of the synchronization of public policies linked to the measures identified, four workshops and exclusive roundtables were held with the Interministerial Technical Team on Climate Change (Ministry of the Environment of Chile, 2021).

According to the interviewees, the participatory process sought mainly to inform, validate, and strengthen the technical background formulated by the Scientific Committee, and to consolidate inputs to integrate them and discuss them with the Interministerial Technical Team. The result was embodied in the Long-Term Climate Strategy.

⁴Composed of 32 representatives of public institutions, academia, NGOs, 1 representative of the youth, 1 representative of indigenous people, and the participation of the *high-level champion* of the COP25 whose objective in this process was to advise the Ministry of the Environment in the formulation of the strategy.

⁵Composed of national academics from different disciplines and articulated by the Ministry of Science, which on this occasion prepared the Report of recommendations on the incorporation of nature-based solutions and analysis of the LT-LEDS proposal.

⁶Composed of representatives of various sectors of civil society, whose functions include the issuance of opinions on relevant environmental matters and matters of general interest.

⁷Multisectoral body of the public sector that formulated a proposal for the integration of a gender approach for the LT-LEDS.

Participants in the formulation of the Chile LT-LEDS highlighted the high consideration given to the studies completed during the process and to the recommendations arising from science⁸. This helped to find agreement between the parties and to specify the contents of the strategy.

“Here that discussion is finished... there are groups that believe that the methodologies can be adjusted and improved... we are moving forward little by little, but we do not question the current data. We agree that the data provides fertile ground for a prolific discussion.”

“... not only do they act in good faith, but they know the subject. They are qualified and have the double ability of not only knowing their subject but knowing how to take it before the public, which we highly celebrated in the private sector, knowing how to arbitrate in the workshops, knowing how to build consensus with people from opposite sides and have the data and the professionals lead the process.”

Peru

Peru's National Climate Change Strategy is the country's main instrument for comprehensive climate change management. The strategy seeks to guide and facilitate action at the national, regional, and local levels in the long term. To date, the strategy is in the process of being updated. In its preliminary formulation, the strategy has established the following objectives: (i) to achieve carbon neutrality by 2050, and (ii) improve the country's resilience (Ministry of the Environment of Peru, 2021).

In Peru, compliance with Article 4 of the Paris Agreement has been achieved by updating the 2003 National Climate Change Strategy, which was subsequently updated in 2014. This decision establishes that the 2021 National Strategy on Climate Change – which will be presented as an LT-LEDS before the Convention, is a national policy that must be updated in accordance with the Framework Law on Climate Change and the methodological regulations of the National Strategic Planning System (SINAPLAN)⁹ of Peru.

⁸In this line of reasoning, the quality and recognition of the country's specialized academic fabric in climate change is highlighted, with organizations such as the Climate and Resilience Center (CR2), the Center for Global Change and Energy Center that are described as “a luxury.” In the same line, regarding the capacities, there is a high level of agreement between those who have participated in the process about the competencies and the level of professionalism of the team that has led the formulation of the strategy from the Ministry of the Environment and the state in general.

⁹This system establishes standards and checks for consistency with other policy instruments as part of the process to modernize the Peruvian State.

Peru's system of governance supports the work of the Ministry of the Environment (MINAM) in updating the strategy and is made up of the i.) High-Level Commission on Climate Change (CANCC)¹⁰ and ii.) the National Commission on Climate Change¹¹.

In accordance with the SINAPLAN methodological guidelines, the phases to update the strategy include the following milestones: (i) identification, definition, and structuring of the public problem, (ii) determination of the desired future situation and selection of alternative solutions, (iii) elaboration of the priority objectives, and finally, (iv) identification of actions and benchmarks. By the end of 2021, the rounds of workshops had advanced to the fulfillment of milestone 3 (prioritized objectives) and there is published information on milestone 1 corresponding to the definition of the problem.

Each milestone was defined based on following steps: (i) the formulation of contents by MINAM, (ii) a review of the contents by the MINAM Budget Directorate and the General Directorate of Climate Change and Desertification, (iii) a review of the document by CEPLAN, (iv) public consultation on the document through consultation workshops to collect comments and suggestions, (v) systematization of the contents by MINAM, and finally, (vi) presentation of the milestone proposal to CEPLAN. The process establishes MINAM as the central agency responsible for the formulation of the contents, supported by consultation workshops and by technical research such as the *Study of Costs and Benefits of Carbon Neutrality by 2050* formulated with support of the IDB.

According to the interviewees, the process of updating the Peruvian National Strategy has been “participatory” and “inclusive” and sought to generate more intersectoral meeting spaces to better define the problems and the scope of the solutions. The interviewees highlighted the process as a best practice for policy formulation and as a standard for improving the dissemination, transparency, and quality of policies, integrating diverse fields of knowledge from representatives of civil society, indigenous peoples, and local representatives.

“Beyond the technical level, it is important to have the perspective of those people who will be impacted by the decisions. It enriches and contributes greatly to the final version of the document.”

The MINAM promoted a participatory, expanded, and multisectoral process, in which four major issues in climate change were discussed: (i) the Framework Law on Climate Change, (ii) Updating of the NDCs, (iii) Forests, and (iv) Desertification. This experience allowed actors such as regional governments, municipalities, indigenous peoples, women, and youth to be integrated into the climate change discussion.

¹⁰The High-Level Commission on Climate Change (CANCC) was created in September 2020 as an agency responsible for updating and reporting on the NDC, with the participation of the President of the Council of Ministers, who chairs the Commission and the heads of the sectors of Foreign Affairs; Agriculture and Irrigation; Economy and Finance; Energy and Mines; Transport and Communications; Production; Housing, Construction, and Sanitation; Health; Education; Development and Social Inclusion; Culture; Women and Vulnerable Populations; in addition to the National Center for Strategic Planning; the National Assembly of Regional Governments and the National Association of Local Governments. This group is responsible for validating the contents established in the Strategy (Environmental News, 2020).

¹¹The National Commission on Climate Change is the body established in the Framework Law on Climate Change chaired by the Ministry of the Environment, which forms a permanent space through which the public sector and civil society can monitor compliance with public policies on climate change, as well as the international commitments assumed by the State before the United Nations Framework Convention on Climate Change.

“We believe that the mechanisms have been transparent and have generated spaces for contributions and criticism on various issues.”

Finally, the interviewees highlighted the institutional and regulatory progress the country has achieved in terms of climate change. The Framework Law on Climate Change unified guiding principles, established roles and responsibilities for existing institutions and integrated the climate perspective into other policy instruments.

In addition, the institutional structure was strengthened with the creation of new agencies focused on climate change (i.e., the High-Level Commission and National Climate Change Commission).

III. Identified value adding elements of LT-LEDS

“Backcasting” methodologies for constructing long-term scenarios

The use of *Backcasting* methodologies to build long-term scenarios is new in most countries. It is identified as a good practice that contributes to the country’s ability to improve its strategic planning processes. In the opinion of the interviewees, the use of this type of methodology permits: (i) thinking in the long term, (ii) visualizing decarbonization routes, and (iii) identifying decisions to be made in the short and medium term to achieve the expected objectives. The use of forward-looking methodologies favors more robust decision-making, as it facilitates the communication of a more concrete and coherent account of how to shape a decarbonized and resilient economy, and what measures are needed for a climate transition.

For most of the interviewees, the formulation of their climate strategies required methodological support converting the results of the studies into a strategy as such. In Peru, the prospective studies carried out were valuable but were mainly academic and distant from public policy. It is recommended to strengthen the studies, integrating a more detailed sectoral capacity analysis, an analysis of the regulatory gaps and capacities for implementation, and a better understanding of the dynamics at the local level that could impact the execution of the plans.

Strategic planning needs to reflect the importance of planning in conditions of uncertainty and integrating the governance challenges derived from a complex problem such as climate change, which requires multi-level changes in a synchronous and articulated manner. Approaches such as “anticipatory governance”¹², discussed in the literature on adaptation (Quay, 2010), as well as the model for “mission-oriented policies” (Mazzucato, 2018), could be valuable alternatives to explore.

Comprehensive view of climate policy

Colombia, Costa Rica, Chile, and Peru noted that the LT-LEDS formulation process allowed them to address the causes and impacts of climate change with a more comprehensive and systemic approach, and thus better respond to the challenges imposed by the climate transition. This strengthened the knowledge and perspective of participants, particularly from the public sector.

¹²Anticipatory governance is presented as a tool for planning in conditions of uncertainty and includes the following: (i) anticipation and analysis of the future, (ii) creation of flexible strategies, and (iii) monitoring and action.

The process also made it possible to discuss and define approaches to governance and the integration of climate policy, which were absent from previous planning instruments.

In Colombia and Costa Rica, participants highlighted the contribution of having a joint reflection on the challenges of achieving higher levels of resilience and carbon neutrality in the working groups. In the opinion of the interviewees, this experience strengthened the understanding of the problem and its interdependencies and improved the capacity of the participants to become part of the solution.

“Based on the results of the studies, which were diverse and rich in new information and the questions that were raised, the different stages that were needed between different actors (Colombia) were being considered.”

In Peru and Chile, the participating bodies had many diverse actors, mainly acting in a consultative and informative manner. However, two different points of view are apparent in these countries. Participants from the public sector appreciated the opportunity to interact with other ministries that were part of the working groups.

“... It is super relevant because it does not occur naturally. We have met people, links are established, and policies are made jointly... because what happened before is that environment and energy departments did this work without asking much of the sectors and proposed goals that went against (sectoral) policies, assigning a ministry powers that it did not have (Chile).”

In contrast, representatives of academia and civil society emphasized the need to improve the participation and involvement of actors. In Peru, they asked to improve the methodological support and design of the processes, and in Chile, to expand the selection of participants with sectors traditionally marginalized from the discussion on climate change, along with greater involvement of the economic sector.

In Colombia, Costa Rica, and Peru, there is a positive perception of the inclusion of new actors in participatory processes. In Colombia, the work with indigenous communities, Afro-Colombian organizations, and non-organized civil society, including activists and youth was emphasized. In Costa Rica and Peru, young people, women, and indigenous peoples were included in the working groups, which enhanced their ability to influence the definition of policies.

Identifying governance challenges

In all countries, interviewees warned about the need to generate governance models during the formulation of the LT-LEDS that then favor the transition. In Chile and Colombia, for example, “sectors/commitments” were identified that did not correspond with traditional definitions. In the case of Chile, “water resources” and “coastline” stand out, for example, and in the case of Colombia, “resilient and intelligent cities-regions.”

“(For Colombia) A commitment does not necessarily have the proper name of the sector that will implement it. This is very important because the strategy does not set specific and exclusive goals for a specific sector. However, it is quantifiable and measurable and the responsibility for its implementation can be attributed to different actors.”

Participants also warned about the challenges of designing and implementing a climate change policy and facing multidimensional problems in a context of existing regulatory and institutional gaps.

Articulation with NDCs

In the official documents, all countries mention a high level of alignment between the NDCs and the content of the LT-LEDS, emphasizing that the strategy defines the 2050 goals and the NDCs constitute an intermediate milestone for 2030.

In practice, the development of the NDCs prior to the formulation of the strategies meant an additional effort and let them to miss the opportunity to integrate efforts to generate data and align the work teams in the various processes.

Going forward, the LT-LEDS is expected to provide coherence, feasibility, and a projection base to the commitment of the NDCs and enable the fulfillment of medium- and long-term commitments. These enabling conditions include the identification of objectives, targets, and relevant actors for policymaking at the macro level, and the identification of specific instruments to implement the commitments set out in the NDCs.

IV. Main difficulties/weaknesses and lessons learned from the process

Reflecting climate change priorities and emergencies in LT-LEDS

The needs behind the formulation of the strategies or 'mandates' differ between countries. These needs inform the processes and influence the participants' perception of the scope of the instrument, its legitimacy, and its potential to be implemented. It highlights the importance of generating mandates that are recognized as legitimate and necessary and that reflect the priorities and urgencies that the countries themselves recognize as relevant to their local reality.

In Peru, the interviewees stated that the main reason to update their LT-LEDS is to comply with Art. 4.19 of the Paris Agreement. In the view of many, the formulation of the strategy is valuable for the process, which makes it possible finding opportunities for mitigation and adaptation, offering opportunities for intersectoral articulation and providing a plural vision on the challenges posed by climate change. However, they pointed out that Peru still does not accept carbon neutrality as a necessary or feasible objective for its development in a transversal way.

"The term is one thing but creating knowledge on how we develop the energy sector in the future is another. We cannot talk about carbon neutrality if we do not talk about stopping the exploitation of oil and gas, or if we do not stop polluting the northern Amazon. The polluting energy sector has not been included in the debate."

The interviewees pointed out the need for greater political leadership to articulate a vision of development aligned with the decarbonization of the economy to move forward.

"The formulation of a decarbonization strategy touches the interests of powerful sectors in the local economy that cannot be addressed until there is a legitimate political leadership aligned with a climate policy that can help facilitate change."

Those who designed the process suggest formalizing the binding nature of the strategy by integrating it into the National System of Public Policy Planning so as not to rely on the leadership of one particular person.

Regarding the content of the LT-LEDS, the interviewees highlight the strong emphasis on mitigation, ignoring the relevance of issues related to adaptation and climate resilience.

In the case of Costa Rica, the mandate for the formulation of the plan is its strength since it integrates a high-level political sign of a tacit political and social agreement on a carbon-neutral development model. The interviewees pointed out that the country's structural conditions, its early commitment to nature-based solutions, the integration of its environmental policy with economic growth objectives around tourism, and the construction of a “green” country brand favored the perspective that carbon neutrality was widely accepted at the national level, inherent to Costa Rica's “DNA”.

“It is built on solid foundations of the past, making good use of the country's resources and advances to project a transformed Costa Rica by 2050. For me, the most positive element is that it is not a painting of the dream of a group of experts but a collection of strengths, lessons, encounters, and actors that allow us to visualize a different Costa Rica.”

In the case of Colombia, the internal mandate for the formulation of the E2050 is diffuse. Despite the President's political endorsement, the strategy is not seen as a necessity or opportunity to achieve carbon neutrality by 2050. The mandate, according to the interviewees, stems from President Duque's commitment to the international community and commitments under the Paris Agreement.

In Chile, the mandate for the formulation of the strategy was mainly external, associated with compliance with the Paris Agreement, and was processed in parallel with the Framework Law on Climate Change, which enshrines the contents, formulation processes, monitoring mechanisms, and mandatory implementation of the goals established in the strategy.

For the interviewees in Chile, the lack of institutional articulation in the internal processes for the development of climate policy damages the process since the strategy largely depends on the law to be binding.

Recognition of the LT-LEDS as a cross-cutting development strategy

For all cases, except for Costa Rica, the interviewees stated that it was a problem that the LT-LEDS were rather seen only as environmental policy pieces instead of country-wide strategy papers. They also stated that sectors were only invited to attend as guests collaborating in the process, but not as co-responsible parties.

“They need to be seen as country strategies, put forth at a very high level. The ministries need to be responsible for implementing transformation and not just be participants.”

In Chile, Peru, and Colombia, most of the interviewees questioned whether the leadership for the formulation of a strategy, which focuses on the decarbonization of the economy, should be in the hands of the ministries of environment, which do not have the powers or the legitimacy to lead a systemic and economy-wide transformation such as proposed in the strategy and its measures.

“... there, perhaps the strategic questioning is that the ministry for environment is not seen by its peers as a ministry with the power to set the country's path”.

In Chile and Peru, the Councils or Committees of Ministers – which are part of climate governance – are seen as being absent from the process and could be more directly integrated to address political discussion and decision-making at the highest level.

In Costa Rica, the Ministry of the Environment and Energy, through the Climate Change Directorate, carried out excellent work according to interviewees that established the governance of transition and monitoring of the plan. However, the interviewees said that if the process was carried out again, they would address the design of the institutional framework for the implementation and monitoring of the plan required to carry out the necessary transformations.

Lacking mobilization of the private sector

At the global level, the need to integrate climate change objectives with the Sustainable Development Goals and a transformational adaptation, as reflected in the LT-LEDS formulated to date, is emphasized. However, the main weakness identified during the interviews was the lack of a vision and strategy for productive development that includes economic opportunities based on clean and low-carbon technologies.

“A clear and explicit strategy for productive development along these lines is needed and should include the economic instruments behind building these objectives toward the medium term (2030) so as not to compress the years of recovery, but to provide clarity on the decisions that must be taken by the private sector in the future.”

This approach seeks to center the analysis on the perspectives of countries on productive development. This includes the sectoral commitments, participation in global value chains for goods and services, and, if possible, differentiating themselves with carbon neutrality as an ally in the development of their competitiveness.

“The productive sector is absent from the discussion. I feel that they are not aware of the level of impact the strategy has. It is true that there are guilds, but the productive sector is blind, I think. The information has not come down and while some say that it is better because they do not slow down when approving, I think the opposite. I think that will slow down the implementation of the measures... Without the private sector, there is no implementation of the strategy.”

Because Chile, Colombia, Costa Rica, and Peru are economies that are open and integrated into the global market, the private sector is sensitive to international markets. The proliferation of environmental tariffs and the risk of obsolete technologies being transferred to developing countries jeopardizes the fulfillment of their commitments.

“It makes sense in the export sectors to accelerate decarbonization beyond the fact that we are 0.6% of global emissions because climate action requires products created in Chile, and this creates a virtuous circle where we become part of the solution.”

In Costa Rica and Chile, the interviewees proposed that it was necessary to have fiscal policy and pre-existing economic instruments consistent with the strategy's design. In addition, they raised the need to advance a financing plan. This issue requires greater precision to understand what mechanisms make it possible to mobilize resources – public and/or private – for the implementation of a high-level investment plan.

“Such great transformation requires resources from many sides: from international cooperation partners, the private sector, the public sector, and the global financial system... With a change of this depth, we have to identify a whole range of possibilities that helps us think of new institutional arrangements to mobilize investment.”

Loans from the IDB and other multilateral banks allow for important progress but are not sufficient. It is necessary to identify public-private participation models that reflect the reality of the economic policy in the countries, and which therefore make implementation possible.

“...just as the tenders to develop the infrastructure in the countries were developed during a certain time, and today are not the solution for the crises of trust that exist and the problems of corruption, the financing models and institutional arrangements that make it possible to solve the problem must be innovated.”

In Chile, the discussion about financing appears less relevant. In particular, the energy sector has benefitted from incentives and market conditions favoring its transition to renewable energies. By contrast, its fiscal policy does not integrate carbon neutrality. The interviewees acknowledged the efforts of the Ministry of Finance to participate in international coordination and discussions on climate finance. However, the discussion does not reach a level of maturity that allows for defining an aligned fiscal policy that, for example, addresses the subsidies to pollutants still in force.

However, the private sector and representatives of the public sector in Chile stated that the lack of dialogues and technical discussions with the different production guilds was a weakness of the process.

“... we need to work early to make visible the conditions that enable the implementation of the measures and gather that information together with those who will implement the changes on the ground. This has not yet been done and it is urgent given that the strategy is focused and viable if implemented.”

In a period of the post-COVID financial crisis, the public sector faces budget cuts that possibly impact the implementation of the measures. The allocation of resources for the achievement of long-term objectives, which should be reflected in a change in fiscal policy, is a concern among all interviewees in the four countries.

“...the Achilles heel in Costa Rica is that we still have a political sector, the legislative assembly, and certain political forces that do not agree with the commitments regarding climate change, and do not maintain that level of ambition toward carbon neutrality, and do not provide the necessary resources. We have had a fiscal crisis in the country's economy for years and we do not have a political pact that allows us to tie those commitments to financing for the strategic plan in the long term. That is worrisome because, in the name of the crisis, a new government could decide to shelve these goals.”

Lack of expertise in long-term strategic planning for the public sector and involvement of strategic actors

The used methodologies seek to contribute to the legitimacy, robustness, and credibility of the processes. They are based on studies focused on decision-making and the validation of evidence through participatory processes with a diversity of actors.

There is no doubt that such a methodology strengthens the capacity of countries to view climate change as a long-term policy issue. Some countries have been however more effective than others in transforming robust data and analysis into concrete plans and strategies.

In Costa Rica, there was extensive discussion and subsequent agreement prior to the formulation of the plan and possible decarbonization routes. Emphasis was placed on defining a plan to materialize carbon neutrality by 2050. Early on, Costa Rica identified the positions and visions of strategic institutional actors and supported the participatory process by providing feasibility analyses of the proposals.

“It is fundamental to train people in anticipation of the future. This has always had two forms: quantitative training, and more qualitative training anticipating the future. We trained 25 people in advance and those people supported us in the workshops, which was fundamental. Because this is an iterative process, with plans to adjust the strategy and measure progress every two or three years to achieve goals, it cannot always be an external entity. The country must have the capacity to do so.”

On change management as a central element in the LT-LEDS development process, the interviewees highlighted: (i) the value of involving change agents to expand the levels of ambition and build the political feasibility to advance in the implementation, and (ii) the need to integrate new competencies in the technical government teams to help successfully develop strategic plans under conditions of uncertainty.

“... to be clear about where you want to go and how the decisions of the country are made, and identifying the opportunity to carry out this process, to be clear about the political environment in which this strategy is going to be immersed, about the decision-making process, its characteristics, in terms of studies that support it, participation, so that once it is done there is a high chance that they will be implemented... Here we have the best quality strategy, but then what? ... I think it is important from the beginning that there is a strategic person who can see the best way to carry out the process so that the results are taken into account and are carried out.”

“There is a technical-political role that should identify the right momentum. Recently, there was a relevant legislative initiative that failed, and no one took up the challenge, probably because the momentum was misunderstood and there was not any will to do it.”

Regarding the involvement of change agents, the interviewees, in particular in Chile, Colombia, and Peru, stated that it is necessary to demand for expanded spaces for participation that favor the inclusion of highly relevant strategic actors in the implementation of the plan. In Colombia, it is necessary to emphasize:

“... working very closely with the sectors that must transform by establishing a balance between expanded participation and the generation of agreements and commitments by those who will have to lead the changes as the common purpose is to advance in implementation.”

Finally, new categories should be considered to identify the change agents necessary to mobilize the processes behind the implementation of measures and policies. For example, the inclusion of representatives from groups that have traditionally been excluded from decision-making spaces in climate change, such as young people, women, and indigenous peoples, makes only sense when the role they can play in transformations is understood and not only because it is politically correct to include them.

“We young people have become part of the process because we believe that it is our future that is being built and we are concerned by the status quo, for instance if what we are learning today does not include climate change, there will be no resilience and there will be job losses. If jobs are not decarbonized, they will cease to exist. Careers must continue to be suitable and resilient

[sic] to climate change. That is the motivation. It is our future, so we want to include climate change in careers and in formal and informal education.”

The participation of academia and its technical support is an urgent need to provide expertise and technical capacity, as well as social, cultural, and public policy ideas that favor implementation.

“The ministries already have the information that allows them: [sic] this is my effort, but the ministry, hardly on its own initiative, is going to explore much more ambitious scenarios that represent profound transformations because its priorities are sectoral (and it has the responsibility to fulfill them). Then information generated by academia or by a group of researchers makes it possible to contrast less ambitious or more realistic scenarios, but as [the ministry] it is not aligned with carbon neutrality, it does not explore those scenarios that can be explored by academia.”

In the case of Peru, the interviewees pointed out the weakness of the state in generating robust data to favor discussion and generate agreements, and the failure to integrate expert knowledge into the process.

“...to set conservation and reforestation objectives without addressing the causes that could be at the base of these processes is 'naïve' and not well adjusted to reality, so it is urgent to generate information and a more systematic reflection that makes it possible to identify the multiple actions that should be taken with the implementation of a mitigation measure like this so that it can become a relevant policy at the national level.”

The Peruvian strategy has been developed without continuous technical support. The process in Peru did not fully count on an academic team providing knowledge to reflect on the solutions and generated lines of action, in particular on the relevance and viability of the mitigation measures proposed.

“... we do not know the microanalysis of costs, the requirements of a waste management plan, for example, which implies specific knowledge that must be taken into account. Even knowing that the greatest benefit for society could be achieved, it is likely that it will not be implementable if the details are not known or explained.”

V. Factors impacting the implementation of the National Climate Policy Strategies

Capacity and institutional design to address the transformations required by an LT-LEDs

The interviews showed that the implementation of a decarbonization strategy means a systemic transformation of the country, demanding a new form of governance. To this end, countries have proposed different responses as part of the LT-LEDs they have formulated.

Costa Rica integrates the modernization of public management as one of the measures to be developed in its Decarbonization Plan. The plan establishes transitional governance under the leadership of the Presidency, which includes the Ministry of the Environment, Planning, and Finance. It is based on the urgent need to design an institutional framework that would improve the levels of articulation, integration, and coherence of public action.

Colombia's strategy mentions the need to implement a radical transformation of systems to achieve resilience and carbon neutrality, the integration of policy instruments, and higher levels

of intersectoral articulation. For the interviewees, the National Planning Department is central to improving the alignment of policies.

In its strategy, Chile mentioned the governance challenges generated by its implementation and designates coordination responsibility to the Ministry of the Environment. It also mentions the need to improve: (i) vertical and horizontal policy integration, (ii) capacity-building at the subnational level, and (iii) the empowerment of civil society as central actors in the solution.

Peru, for its part, mentions the challenge imposed by the complexity of the changes and stresses that the ability to implement them will be addressed to a large extent by the vertical and horizontal integration of the policy instruments, and by the improvement of their contents according to the new CEPLAN guidelines.

From the interviewees' perspective, the challenge requires more than the vertical and horizontal integration of public planning instruments. It will require significant efforts to coordinate intersectoral work, planning between sectors in a more integrated manner, and mapping the relevant actions to be implemented in detail. The interviewees noted that presenting the strategies is only the first step at the political-institutional level to reach the point of implementation.

Public institutions are highly dependent on international cooperation

In all countries, but especially in Chile and Peru, the parties interviewed raised institutional fragility of the Ministry of the Environment and the lack of financial capacity to support experts without international cooperation resources as risks.

“... there is a structural theme of the ministry that depends too much on external sources of financing. It is a problem because we have too much dependence. We must aim for greater institutionalization, with internal capacities equal to that of other units in the Ministry with permanent funding.”

“Many things are ad honorem, and in the end, it works because people are committed, but these efforts are not sustainable over time and weaken efforts at the country level.”

“...there is no possibility of doing what we do without external support, even more so in a period of fiscal crisis where emergencies at the domestic level are real and thinking about strengthening capacities and increasing the budget is difficult.”

There is also concern that resource management capacities at the sectoral and subnational levels are weak in the management of international cooperation resources.

This fragility adds to the long-term challenge of developing the roadmaps and keeping alive a strategic planning system that enables responding to the dynamic character of climate change and to manage the policies on the subject. This requires monitoring, continuous information updating, and spaces for reflection and shared articulation.

VI. Conclusions

The LT-LEDS add value in formulating climate policies at the national level. This value is in addition to the NDC update processes and previous experiences in defining high-level climate policies. The formulation of LT-LEDS makes it possible to gain perspective, clarity, and agreement on the challenges posed by transforming economic, productive, social, and cultural systems to achieve carbon neutrality and climate resilience. LT-LEDS are a necessary step but are not sufficient in ensuring coherent action to achieve carbon-neutrality.

In the four cases analyzed, a high level of compliance was observed in the formal aspects of the international guidelines for the formulation of the LT-LEDS. These aspects – which include generating robust analyses, developing a long-term vision, and linking key actors, among others – are necessary for the formulation of instruments that generate a change of perspective that accompanies climate policy.

It has been observed that countries value the capacities they have developed over the last ten years in climate matters, generating robust evidence and institutional capacities for the management of policy co-creation processes. An increase in capacity was also observed in all countries, although gaps in technical (Peru) and methodological (Chile, Peru) capacities that need to be addressed persist. To varying degrees, all countries have conditions for modelling mitigation scenarios, creating decarbonization pathways and capacities for open policymaking processes.

Thanks to the use of *backcasting* methodology and the development of multi-stakeholder scenario co-creation processes, the formulation of the LT-LEDS enabled countries to integrate a long-, short- and medium-term dimension into their strategies. They build on the goals expected to be achieved by 2050 and allow countries to identify the governance challenges they will face in implementing their decarbonization pathways and achieving their resilience goals.

Following main difficulties, weaknesses, and lessons were identified by the actors: (i) the lack of priorities and urgencies in climate matters reflected in the LT-LEDS, (ii) the lack of recognition of the LT-LEDS as a transversal development strategy, (iii) the lack of definition of a vision of productive development that manages to mobilize the private sector, and (iv) gaps in the transition from robust studies to the management of change or implementation of climate change policies.

VII. Recommendations

Based on the above results, the following recommendations are made:

(i) Establish a mandate aligned with the country's needs

The countries that best addressed LT-LEDS processes better linked the external international mandate with the internal development mandate, which establishes the priorities of the national actors. Countries such as Costa Rica and Chile had a clear vision regarding the contribution that carbon neutrality could generate for their development processes prior to the formulation of the strategy. For them, their favorable energy mix and the “green” country brand are advantages for positioning themselves globally in a world committed to carbon neutrality.

For its part, in Colombia there is an articulated discourse on the importance of designing a climate policy that makes it possible to achieve carbon neutrality and the urgency of addressing

national challenges in adaptation and risk management to achieve a resilient development model. Colombia built a vision for 2050 relevant to the country and seeks to provide greater coherence in its global climate policy.

In Peru, however, there was no articulated discourse on the value of carbon neutrality for the country's development, nor did it consider including a perspective into its climate policy that responds to national priorities and emergencies. This showed that it is necessary to continue working on creating a vision for the country regarding climate policy that is relevant to local actors.

It seems that it is not possible to make progress in the formulation of LT-LEDS at the national level without discussing and integrating the elements that are urgent and relevant for the countries themselves, beyond international mandates.

In addition, because they are not binding, strategies that respond exclusively to complying with the global commitment, with a strong emphasis on mitigation, have a high probability of becoming irrelevant instruments that only constitute a foreign policy formality. That said, the international mandate has been, and appears to remain, key in catalyzing these processes.

(ii) Recognize the LT-LEDS as an economic development strategy for countries

Countries need to have an institutional design that enables the formulation of strategies with political legitimacy. It should further address the discussion on the type of development that the country will pursue. Climate change is widely understood by different actors as a problem associated with the economic development model and not as a simple environmental problem. However, the definition of the strategy mainly remains anchored in the ministries of environment, which is a potential weakness of the process.

Countries have made progress in articulating the objectives of the fight against climate change with the Sustainable Development Goals, but not in articulating climate policy with the objectives for their productive development. This hinders the integration of the private sector as part of the climate transition. Although there is a discourse on the macro contribution of carbon neutrality to the countries' economies, there is no vision for country-specific opportunities for competitiveness, nor for the measures needed to achieve this transformation.

(iii) Integrate a change management vision to make way for implementation

Countries have made progress in building long-term visions and identifying concrete measures to achieve carbon neutrality. However, there are gaps in translating the above into implementable public policies. In most countries, there are high levels of agreement on mitigation, but the challenge is not only the goal itself, nor the technologies that could be adopted, but how to trigger decision-making to move to implementation, how to assess the best alternatives to achieve sectoral results, and how to manage climate policy effectively and consistently during the transition.

Countries require better tools for addressing public policy planning and to design processes for complex problems, which involves: (i) strengthening capacities to build visions with a process perspective, (ii) strengthening capacities to integrate feasibility analysis and implementation in conditions of uncertainty, (iii) managing change based on methodologies focused on stakeholder involvement, the generation of agreements, construction of coordination, collaboration, and negotiation spaces, and (iv) anticipating possible institutional alternatives

that permit better intersectoral coordination and the strategic management of policies over time. Once the “what” has been defined, it is necessary to define “how” policies are to be designed and implemented.

Given the interviewee responses, three reflections are derived to ensure the integration of the LT-LEDS in the formulation and/or adjustment of plans and measures, according to their objectives:

- LT-LEDS cannot be translated into concrete policies and measures without significant adjustment at the institutional level¹³.
- In the short term, it is likely that it will not be feasible for most of the countries analyzed to develop these processes without international cooperation.
- Once the LT-LEDS are defined, the effort spent loses meaning if there is no continuity in the work. This exercise is the beginning of a process that only reaches its potential if it is complemented by plans and roadmaps for the relevant actors, and if it has the following: (i) a strategic implementation management and monitoring system, (ii) management of intersectoral and public-private articulation spaces, (iii) feedback circles, and (iv) ongoing adjustments, as part of an iterative process. With the LT-LEDS, the work is just beginning, and their ongoing management and development are central to ensuring the achievement of the objectives proposed. Lastly, it should also be noted that the implementation of LT-LEDS requires political pacts between parties and actors at the local, regional, and national levels.

¹³A true strengthening of the public sector implies the development of long-term and multisectoral institutional capacity, which is part of broad climate governance and political authority that permits coordinated, dynamic, and flexible action to integrate the uncertainty and speed of change.

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