Long-term Adaptation Planning in Latin America and the Caribbean

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About this Report

This report was prepared by the World Resources Institute (WRI) with the coordination, assistance and funding of the Inter-American Development Bank (IDB) and the Agence Française de Développement (AFD). Research began in February of 2021 and writing was completed in October. The report aims to enhance long-term adaptation planning efforts in the region by providing useful information on approaches, tools, and methodologies, followed by a diagnostic of current national efforts in the region and in select countries, highlighting country needs, the institutions involved, and opportunities. The report zooms on eight countries chosen by IDB and AFD for deeper analysis and engagement: Argentina, Barbados, Colombia, Costa Rica, Guatemala, Jamaica, Mexico and Uruguay. The report concludes with recommendations on how Latin America and the Caribbean (LAC) countries can be further supported in long-term adaptation planning and is accompanied by a proposed framework for intervention with relevant lines of action.

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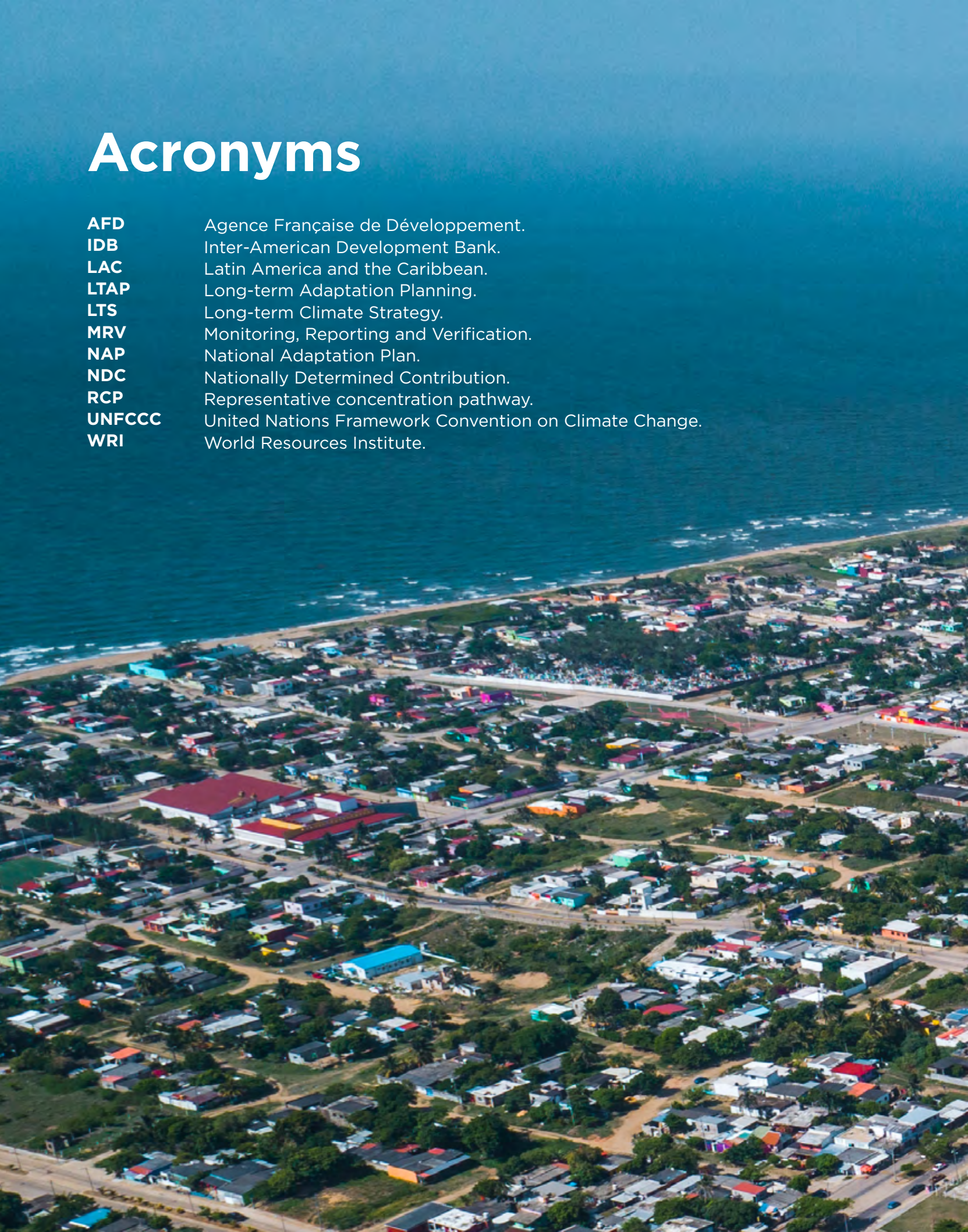
Acronyms

AFD	Agence Française de Développement.
IDB	Inter-American Development Bank.
LAC	Latin America and the Caribbean.
LTAP	Long-term Adaptation Planning.
LTS	Long-term Climate Strategy.
MRV	Monitoring, Reporting and Verification.
NAP	National Adaptation Plan.
NDC	Nationally Determined Contribution.
RCP	Representative concentration pathway.
UNFCCC	United Nations Framework Convention on Climate Change.
WRI	World Resources Institute.



Executive Summary

Long-term adaptation planning (LTAP) is an important element of the response to the impacts of climate change, particularly in Latin America and the Caribbean (LAC), a region that is highly vulnerable to such impacts.

Long-term adaptation planning (LTAP) is an important element of the response to the impacts of climate change, particularly in Latin America and the Caribbean (LAC), a region that is highly vulnerable to such impacts. This report shows the progress that the region has made in terms of LTAP, considering the general planning exercises while also taking into account that policy instruments, tools and approaches take different forms in each country. Therefore, the report seeks to establish a common understanding of the approaches to long-term adaptation planning and describe how this concept is integrated into existing climate action strategic planning exercises.

After a thorough review of the frequently-used tools and methodologies for LATP approaches and a mapping of the efforts of eight LAC countries on this topic, the report proposes an intervention framework and a set of recommendations to mainstream and integrate LTAP into long-term climate action planning. In its preparation, a combination of qualitative methods was used, including an extensive literature review, interviews with experts and country officials,

and workshop discussions with the countries that were part of the study to identify the main barriers to LTAP and the best regional practices.

This report is divided into six sections. The first summarizes the key concepts and frameworks for adaptation planning and introduces the LTAP topic. Additionally, it reviews the most widely used tools and methodologies in the region, such as adaptation pathways, scenario workshops, multi-criteria analysis, cost-benefit analysis, and robust decision-making.

The second section features ongoing efforts with LTAP processes in LAC with a focus on eight countries: Argentina, Barbados, Colombia, Costa Rica, Guatemala, Jamaica, Mexico, and Uruguay. An emerging trend in Latin America and the Caribbean is to plan concurrently for longer-term decarbonization and climate adaptation to achieve better sustainable development outcomes. This is evident in the formulation of cross-cutting long-term strategies in Argentina, Colombia, Chile, Uruguay, and Peru. However, these efforts have yet to be replicated broadly throughout LAC, where almost half of the countries lack a clear long-term vision (2050 and beyond) and a roadmap to set it into motion.

The second section features ongoing efforts with LTAP processes in LAC with a focus on eight countries: Argentina, Barbados, Colombia, Costa Rica, Guatemala, Jamaica, Mexico, and Uruguay.

While we can find diverse and powerful adaptation-related policy instruments in Latin America and the Caribbean, such as comprehensive laws, frameworks, regulations and inter-ministerial committees, we also witness that challenges remain for execution and enforcement. The third section of this report

Identifying best practices and highlighting the examples of those countries that have managed to overcome the aforementioned barriers.

describes what the countries identify as their main needs and barriers to overcome in LTAP. The most salient challenges that emerged are shortcomings in policy alignment and adherence to long-term national visions, limited cross-sectoral coordination, insufficient finance, needs for enhanced and deepened public participation, and inadequate information and tools for planning.

The fourth section focuses on identifying best practices and highlighting the examples of those countries that have managed to overcome the aforementioned barriers. Factors that enable progress on adaptation planning include high-level political buy-in and alignment of adaptation with long-term national priorities, which can help address the disruptive effects of the constant rotation of technical personnel derived from government administration changes; critical technical and financial support from multilateral banks, climate funds, international NGOs, multi-partner initiatives, the United Nations, and foreign government agencies to advance long-term adaptation planning efforts; inclusive and meaningful participation of civil society; and effective transversal and flexible communication between ministries and sectors.

The fifth section proposes an intervention framework to overcome these barriers and disseminate best practices, with specifics on tailoring technical assistance for the Latin America and the Caribbean region.

Finally, the report presents a series of conclusions and recommendations that provide context to the intervention framework proposals in LAC. The recommended lines of action to better support LTAP are categorized into: institutional; monitoring, reporting and verification (MRV) and data; implementation, finance and the private sector; public participation; and a LAC regional platform proposal (see Table 1). The Appendix provides a detail of the legal frameworks for adaptation in each of the eight countries studied, as well as a additional information of the methodology used to undertake this study.

Table 1: Recommendations in light of barriers, good practices and the proposed intervention framework

	Barrier	Good practices	Proposed intervention framework	Recommendations
Vision	A need for development and adherence to a long-term resilience **vision** and for improved policy alignment.	Encourage high-level political buy-in and alignment of adaptation to long-term national priorities and policies.	A high-level political meeting to recognize progress achieved within the framework of meetings, regional policy dialogues and country technical assistance thus far.	**Tangibly align climate-relevant policy frameworks and laws to better leverage the synergies between climate adaptation action and national priorities.**
Coordination	Lack of cross-sectoral **coordination.**	Foster strong and agile inter-institutional coordination to strengthen adaptation planning processes.	Dedicated in-country technical assistance and in-depth support to strengthen adaptive capacities. The appointment of an inter-ministerial body with sectoral focal points can enable coordination.	**Promote efficient public action based on greater coordination and collaboration between all sectors in order to plan and implement necessary adaptation measures.**
Finance	Limited **finance.**	Identify internal and external resources to build capacity and access finance. Develop a strategy for continuous and dedicated international climate finance.	Develop investment plans and finance strategies. Develop climate and natural capital budget tagging methodologies, aligned to the country's budget exercises.	**Develop guidance on how to incentivize and involve the private sector to unlock larger adaptation investments and innovation for long-term planning.**
Participation	A need to continue widening inclusive and meaningful public **participation** efforts.	Ensure broad and meaningful participation of civil society and local actors in long-term planning processes, starting from the design stage.	Provide financial and technological resources to facilitate virtual formats to increase inclusion and participation. Develop guidance materials in Spanish.	**Develop guidance in Spanish on step-by-step mechanisms and best practices from the region on how to involve stakeholders and the wider civil society in long-term planning exercises to ensure public support and continuity of strategic climate action plans.**
Information	Lack of, or limited availability of **information** and tools.	Provide opportunities for shared learning across the region.	High level political meeting to kick off the launch of a regional peer-exchange initiative. A dedicated virtual space for LAC regional peer exchanges. Training workshop series on the five factors in the intervention framework and other high priority topics identified in the research process.	**Gather, monitor and share evidence of adaptation benefits to generate greater support for adaptation commitment and action.** **Create easy-to-use, sector-specific guides and tools in both Spanish and English for ministry officials on how to plan beyond short-term impacts and how to estimate longer-term adaptation costs.** **Create more frequent opportunities, including virtual, for LAC countries to share their experiences and learn from each other.**

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Introduction

Countries must urgently plan and prepare for human-caused climate change impacts.

The Paris Agreement, ratified by 193 parties, including all countries in Latin America and the Caribbean (LAC) (United Nations, 2022), aims to strengthen the global response to climate change including by increasing the ability of countries to adapt to the adverse impacts of climate change and foster climate resilience and by making finance flows consistent with a pathway towards climate-resilient development (Paris Agreement, 2015, Article 2). As stressed by this international agreement and more recently the Global Commission on Adaptation's call to action, countries must urgently plan and prepare for human-caused climate change impacts that are already occurring and will worsen in the coming decades, such as stronger and more frequent storms and heat waves. Other slow-onset events like salinization of freshwater supplies and arable land, growing food insecurity, and desertification may take years to materialize fully, yet are no less severe.

Planning for and responding to the short-term impacts of climate change is therefore only half of the picture: this must be complemented or embedded in long-term planning for the decades ahead. Long-term plans must incorporate adaptation policies as a means to ensure the sustainability and viability of national development priorities, programs, goals, and investment strategies. Building long-term resilience to variable and uncertain future climate change impacts, and the socioeconomic and ecological effects that accompany them, requires long-term adaptation planning (LTAP).

Planning for adaptation with a long-term horizon has many economic, social and environmental benefits. The Latin America and the Caribbean region's great vulnerability to climate change in its coastal areas and the need to prioritize an adaptation agenda have been continuously emphasized by ECLAC (Bárcena Ibarra et al., 2020). The region has more than 27% of the population living in coastal areas, with an estimated 6–8% living in areas that are at high or very high risk of being affected by coastal hazards (WMO, 2021). Given the increase in extreme weather events and the lower cost of prevention compared to reconstruction, Mexico's Special Climate Change Program acknowledges the need to address the large federal spending asymmetry that exists, wherein greater resources are spent on reacting to rather than preventing natural disasters: during the period 2005-2011, for example, 37 times more was spent on reconstruction than prevention (Government of Mexico, 2013).

The aggregated value of the projected annual economic damages in LAC resulting from some of the major physical impacts associated with a 2°C increase over preindustrial levels is expected to grow gradually, reaching approximately $85 billion–$110 billion annually by 2050 (1.8–2.4% of LACs GDP compared to a GDP of approximately $5.35 trillion in 2021 (IMF, 2021).

Adaptation needs are increasing, but every dollar invested today for resilience purposes remains cheaper and the best business case to avoid

Investing now in adaptation– even when upfront costs may seem high –can save lives and assets, present and future, valued.

The IPCC special report on Global warming of 1.5 °C (2018) highlights that, compared with current conditions, 1.5 °C of global warming would pose heightened risks to eradicating poverty, reducing inequalities, and ensuring human and ecosystem well-being

greater investments and recovery costs once the country faces the consequences of climate change. For every dollar invested in resilient infrastructure and development, can generate up to four dollars in economic benefits (IDB, 2020).

Investing now in adaptation– even when upfront costs may seem high– can save lives and assets, present and future, valued at many times more than reconstruction would cost, and in some cases can prevent, reduce or delay irreversible damages caused by climate change. By investing in adaptation, LTAP can minimize future losses, maximize the efficient use of scarce resources, and lead to greater social equity (Gordon et al., n.d.). The IPCC special report on Global warming of 1.5 °C (2018) highlights that, compared with current conditions, 1.5 °C of global warming would pose heightened risks to eradicating poverty, reducing inequalities, and ensuring human and ecosystem well-being. Understanding projected climate change scenarios can reduce the risk of insufficient measures or costly lock-in of investments that could lead to maladaptation; for example, financing a large infrastructure or agricultural project could draw more people to an area where future sea level rise or recurring droughts will actually increase climate risks over the coming decades. Furthermore, IPCC´s AR6 has underlined that minor, marginal, reactive or incremental changes won't be sufficient "Most observed adaptation is fragmented, small in scale, incremental, sector-specific, designed to respond to current impacts or near-term risks, and

focused more on planning rather than implementation. Maladaptation can be avoided by flexible, multi-sectoral, inclusive and long-term planning and implementation of adaptation actions with benefits to many sectors and systems.

A long-term perspective can reveal the limits of proceeding with business-as-usual, and also of implementing insufficient incremental adaptation measures while shining a spotlight on situations that require more transformative or systems-wide actions (see Ferdinand et al., 2020 for three specific case studies). LTAP can also help ensure greater equity by identifying the needs of vulnerable groups from the start so that they can be meaningfully included in planning activities and resources allocated in a way that enhances their resilience.

The COVID-19 pandemic has provided a stark warning to everyone about the impacts of unexpected stressors, and revealed the underlying fragility of countries' institutions, societies, and economies to them. Climate change, often referred to as a threat-multiplier, is already testing these systems, further emphasizing the importance of adequate planning and implementation before, during and after crises. For Latin America and the Caribbean, a region with some of the highest inequality rates in the world and where the pandemic is erasing many hard-won development gains, adaptation is especially important to prevent more people from falling into poverty (Government of Mexico and Global Center on Adaptation, 2021).

This report shows progress is being made in the LAC region when it comes to long-term planning for climate impacts, based on the countries' experience with long-term planning exercises in general.

This report shows progress is being made in the LAC region when it comes to long-term planning for climate impacts, based on the countries' experience with long-term planning exercises in general - yet it varies widely, with policy instruments, tools and approaches taking many forms. Section 1 begins with an introduction to long-term adaptation planning (LTAP), followed by a description of key concepts and the tools and methodologies that are most frequently employed by countries. Section 2 zooms in on the experiences of 8 countries (Argentina, Barbados, Colombia, Costa Rica, Guatemala, Jamaica, Mexico, and Uruguay) highlighting on-going efforts and best practices for LTAP. These include the development of National Adaptation Plans (NAPs) and integration of adaptation elements into long-term development plans and long-term climate strategies. Sections 3 draws from the information retrieved during this study to synthesize main barriers and needs identified by countries, and Section 4 showcases best practices from the countries studied to overcome these. Section 5 builds on the barriers and best practices to propose an intervention framework that would enhance their dissemination and strengthen the response to LTAP throughout the region. Finally, Section 6 features conclusions and recommendations that provide a context to the intervention framework proposals for the region.

1.1. Methodology

The research methodology for this report consists of a combination of qualitative methods, including literature and country document review; a two-phased interview process, first with Inter-American Development Bank (IDB) and the Agence Française de Développement (AFD) regional and country specialists and subsequently with country officials; and discussions and responses gathered during a three-hour virtual workshop and a two-hour technical workshop. A draft version of the first four sections of the report was shared with approximately 40 stakeholders to solicit their feedback and make any necessary changes and corrections. The full draft of the report was similarly shared in October 2021 and February 2022 for peer-review. A detail of the methodology used, and workshops and interviews organized is included in Annex VIII.

The deeper dive – through additional country document review and interviews – into individual LAC countries' long-term planning processes was primarily limited to eight out of 30+ in the region. This limitation is a result of the limited scope and human resources to research all countries in LAC.
Another limitation of this report is that some LTAP processes are still underway, for which information is limited or not publicly available.

1.2. Key Concepts and Tools for Long-term Adaptation Planning

Using the literature review as a foundation, the section explains key concepts and frameworks, as well as approaches, tools and methodologies found to be most often employed by countries in conducting LTAP, with a view to making them more accessible to a wider public.

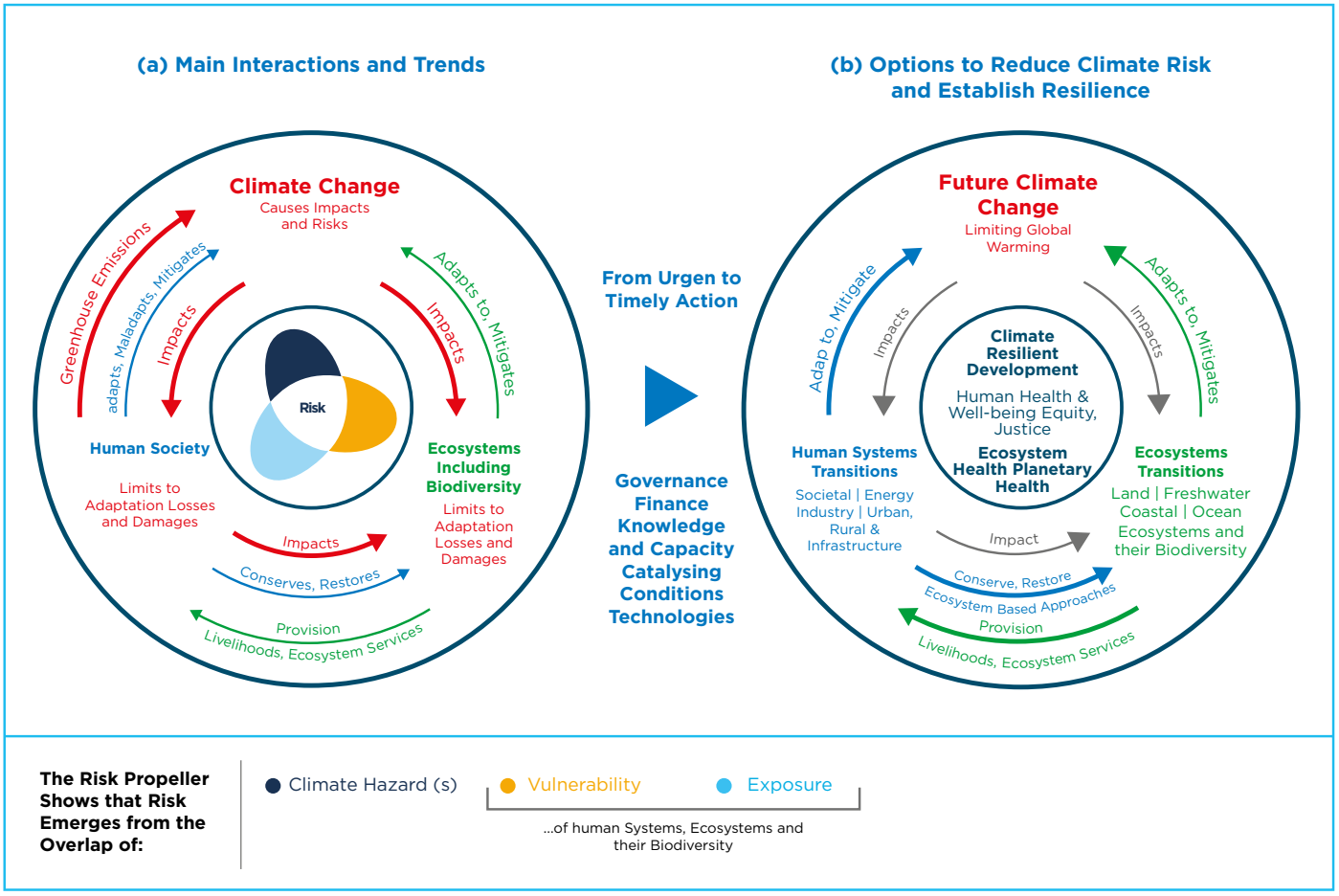
1.2.1. Adaptation and Resilience

In human systems, **adaptation** is the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities (IPCC, 2018). **Resilience** is a related but distinct concept: it is the ability of social, economic, and environmental systems to cope with a hazardous event, trend, or disturbance, responding in ways that maintain both essential functions, identities, and structures as well as the ability to adapt, learn, and transform (IPCC, 2018). In other words, while adaptation pertains to a planning and adjustment process, resilience refers to the ability or capacity to cope with great change or disruption.

1.2.2. Climate Risk and Vulnerability

Vulnerability is the propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt (IPCC, 2018). Along with exposures and hazards, vulnerability is one of the three factors that help determine **climate risk**, as shown below in Figure 1. This definition along with other key concepts are further expanded upon in the IPCC's Sixth Assessment Report on climate change.

Figure 1: Understanding the factors that contribute to climate risk and options to reduce them to enhance resilience



Source: IPCC, 2022.

1.2.3. National Adaptation Plans - NAPs

National Adaptation Plans (NAPs) have been the primary vehicle established by the UNFCCC in 2010 (prior to the adoption of the Paris Agreement) to help countries embed flexible medium- and long-term adaptation and resilience decision-making into core development planning, instead of treating it as a separate issue (Hammill et al., 2019). The guidance on NAPs emphasizes that they should be a key component of long-term adaptation strategies, which should be developed and updated with international support (Noble, n.d.), while McGray (n.d.) and LIFE-AR (2019) stress the broad importance of integrating adaptation into Long-Term Climate Strategies (LTS) and national development.

As of July 2022, 36 countries[1] had officially submitted a NAP to the UNFCCC, while 126 out of 154 Global South countries are in the process of formulating, submitting and implementing NAPs (UNFCCC, 2021). Others are not developing NAPs but rather mainstreaming adaptation into existing development or national plans (Hammill et al., 2019). It is likely that as international finance starts to be available LTS and Nationally Determined Contributions (NDCs) planning will absorb NAPs and extend their reach.

One shortcoming of NAPs is that, outside of the actors involved in drafting them, they are not usually included by ministries and stakeholders in larger planning efforts or across sectors. Unlike Long Term Strategies which set more aspirational goals, NAPs are formulated with the goal of both planning and implementation in mind, and UNFCCC guidance suggests that they should include costing, prioritization, and evidence gathering for iterative future planning. NAPs are expressly adaptation-focused and are more closely aligned with the five- to ten-year planning cycles that are the standard for many developing countries (Gordon et al., n.d.). The two planning strategies complement each other because of these differences; however, few countries have submitted both. NAPs can be specific to sectors or regions and may proceed at different paces; in Uruguay, for example, an expert interviewee shared that the Agriculture NAP, the NAP Cities and Infrastructures and the Coastal NAP are developed, while, the Energy NAP and Health NAP are under elaboration.

[2] https://www4.unfccc.int/sites/NAPC/Pages/national-adaptation-plans.aspx

1.2.4. Nationally Determined Contributions (NDCs)

According to the UNFCCC, countries are making important strides to create and build upon linkages between their NAPs and NDCs (UNFCCC, 2021). NDCs, designed to be updated every five years, embody the goals and efforts of individual countries to reduce their emissions and adapt to climate change. Countries include adaptation in their NDCs to vastly different degrees and with varying detail, a key gap that requires to be addressed in all updates.

Consideration of Mitigation and Adaptation in Climate Action Planning

Aguilar et al. (2021) highlight that there are 4 possible ways to articulate adaptation and mitigation in climate planning:

1. A separate approach where independent adaptation or mitigation plans are created that do not consider possible interactions (synergies and conflicts) between adaptation and mitigation objectives.

2. A parallel approach where adaptation and mitigation plans are carried out in parallel with some common goals but without considering the interrelationships between planned actions and activities.

3. A co-benefits approach where mitigation and adaptation plans are developed separately but incorporate common goals and a consideration of the mutual synergies and/or tradeoffs and conflicts of their planned actions and activities.

4. An integrated approach where a single plan is developed with mitigation and adaptation components and an evaluation of their possible positive and negative inter-relations (and mitigation actions in the latter case) (p.33).

1.2.5. Long Term Adaptation Planning (LTAP)

Long-term adaptation planning (LTAP) is the process by which countries identify and incorporate long-term climate risks into development planning and articulate a set of priorities and actions to enhance resilience in the face of these risks. **The results of the planning process can take many forms and be presented as distinct adaptation and resilience plans and strategies, as adaptation considerations in long-term development plans, or as part of a Long-Term Climate Action Strategy (LTS).**

LTAP requires consideration of slow-onset events, decadal and longer-term data and projections, intersectoral trade-offs, and other non-climate variables important for planning and prioritization—all of which differ widely from country to country. Likewise, the strength of a country's institutional and technical capacity and enabling governance structures, such as level of decentralization or the degree to which an economy is centrally planned, are a determining factor for the conceptualization and implementation of long-term actions.

LTAP can also identify policy reforms needed as well as investment priorities. Because climate change impacts affect so many sectors and facets of society, and adaptation must address all of them to truly build resilience, it is crucial that a diverse group of ministries and stakeholders, including local actors, are involved in the planning, implementation and monitoring processes of an LTAP.

Differentiation Between Adaptation and Development Actions

The relationship between adaptation and development actions should be clarified. The World Resources Institute (WRI, 2007) distinguishes both elements by creating a continuum where pure development activities are on one end and very explicit adaptation measures on the other. "At one far end of the continuum, the most vulnerability-oriented adaptation efforts overlap almost completely with traditional development practice, where activities take little or no account of specific impacts associated with climate change. At the far opposite end, highly specialized activities exclusively target distinct climate change impacts, and fall outside the realm of development as we know it. In between lies a broad spectrum of activities with gradations of emphasis on vulnerability and impacts" (p. 2).

1.2.6. Long Term Climate Strategies (LTS)

Long-term low greenhouse gas emission development strategies were incorporated in the Paris Agreement as part of mitigation planning asking parties to "strive to formulate and communicate long-term low greenhouse gas emission development strategies, mindful of [the goals of the Paris Agreement in] Article 2 and their common but differentiated responsibilities and respective capabilities in the light of different national circumstances" (article 4.19). This seemingly convoluted phrasing seeks to allow different approaches to LTS, which most Latin American countries and other developing countries are interpreting to include adaptation, as well as careful alignment with broader development goals, including SDGs. This trend is consistent with an integrated approach to climate resilient pathways.

At the international level, however, tensions among countries' interpretations on what should be regulated internationally lead to mitigation and adaptation continuing advancing in parallel lanes. However, the situation is changing. There is a renewed interest in climate change and the linkages between mitigation and adaptation, not least following the publication of the IPCC 1.5°C report (IPCC, 2018), which is likely to lead to a larger integration in future LTS and NDCs. The recent results of the Sixth Assessment Report (AR6), Climate Change 2022: Impacts, Adaptation and Vulnerability, assesses the impacts of climate change, looking at ecosystems, biodiversity, and human communities at global and regional levels. It also reviews vulnerabilities and the capacities and limits of the natural world and human societies to adapt to climate change which should allow to empower additional inputs from a resiliency perspective.

As of February 2022, 50 countries (including the European Union with its 27 member countries) have presented their LTS to the UNFCCC (UNFCCC, 2022). From the LAC region, this includes Mexico, Guatemala, Costa Rica, Chile, Colombia and Uruguay. The six of them mention adaptation, although while Mexico, Uruguay and Chile have a whole section on this topic, others like Colombia address adaptation in an integral manner throughout the document. An analysis of the first 29 LTS submitted finds that all these strategies recognize future climate impacts and describe the risks from inaction (Ross et al., 2021). Practitioners, thinks tanks, WRI and others have suggested that countries further expand their scope and ensure the inclusion of adaptation measures, which often have synergies and co-benefits with mitigation actions and sustainable development considerations. Long term planning without resiliency is a missed opportunity that developing countries cannot miss as they plan for a long term development, as it endangers their pathway to sustainable finance and investments.

Table 2: Incorporation of Adaptation in Long-Term Climate Action Strategies - LTS

Country and Year of Submission to UNFCCC	Includes a Whole Adaptation Section in Its LTS or Adaptation Integrated Into LTS?	Description
Mexico (2016)	YES	Mexico has a National Climate Change Strategy, Vision 10-20-40 (in the process of being updated) that includes adaptation. The Special Climate Change Programs are limited to the years of the current government, the PECC of 2014-2018 is cited, now there is a PECC 2020-2024. However, these programs have a defined period. In addition to the National Strategy, it is suggested to mention the adaptation component of the NDC, which has a vision for 2030.
Guatemala (2021)	NO	The National Action Plan for Adaptation and Mitigation to Climate Change of Guatemala works on the issue of adaptation to climate change independently of the LTS (Government of Guatemala, 2021).
Costa Rica (2019)	NO	Adaptation measures of Costa Rica are developed in its National Adaptation Politic and its National Adaptation Plan (Government of Costa Rica, 2019).
Chile (2021)	YES	The country has 11 Sectoral adaptation plans in the Forestry, Agriculture, Biodiversity, Fisheries and Aquaculture, Health, Infrastructure, Energy, Cities, Tourism, Water Resources, Mining and Coastal sectors, under development (Government of Chile, 2021).
Colombia (2021)	YES	The Colombian LTS integrates adaptation in its different chapters, tackling both the needs for a low carbon transformation of the economy as well as adapting to climate risks and addressing vulnerabilities.
Uruguay (2021)	YES	The LTS of Uruguay takes up what is addressed by its NDC and its Adaptation Plan. The main measures for adaptation to climate change emerge from them. It consists of 38 measures distributed in 11 areas: Social; Health; Disaster Risk Reduction; Cities, infrastructures and Territorial Planning; Biodiversity and Ecosystems; Coastal Zone; Water resources; Agricultural; Energy; Tourism and Climate Services.

The reason for including adaptation in LTSs include that:

1. Many emissions reduction strategies increasingly require adaptation to ensure long-term success,

2. Tackling adaptation and mitigation together—under the framework of sustainable development—creates efficiencies, "win-wins" and opportunities for innovation, and

3. The politics of emissions reduction can be tricky, and adaptation can help build the necessary political will for mitigation (McGray n.d.).

1.2.7 Climate Resilient Pathways (CRP)

Climate Resilient Pathways (CRP) comprise both adaptation and mitigation actions. Although there may be trade-offs between adaptation and mitigation, according to the IPCC, in many cases strategies for climate change responses and strategies for sustainable development are "highly interactive" and can bring about mutual benefits (Denton et al., 2014). The IPCC 1.5C and AR6 reports promote climate-resilient development pathways, defined as trajectories that strengthen sustainable development at multiple scales and efforts to eradicate poverty through equitable societal and systems transitions and transformations while reducing the threat of climate change through ambitious mitigation, adaptation and climate resilience (IPCC, 2018; IPCC, 2022).

Table 3: Normative Frameworks for Adaptation Planning

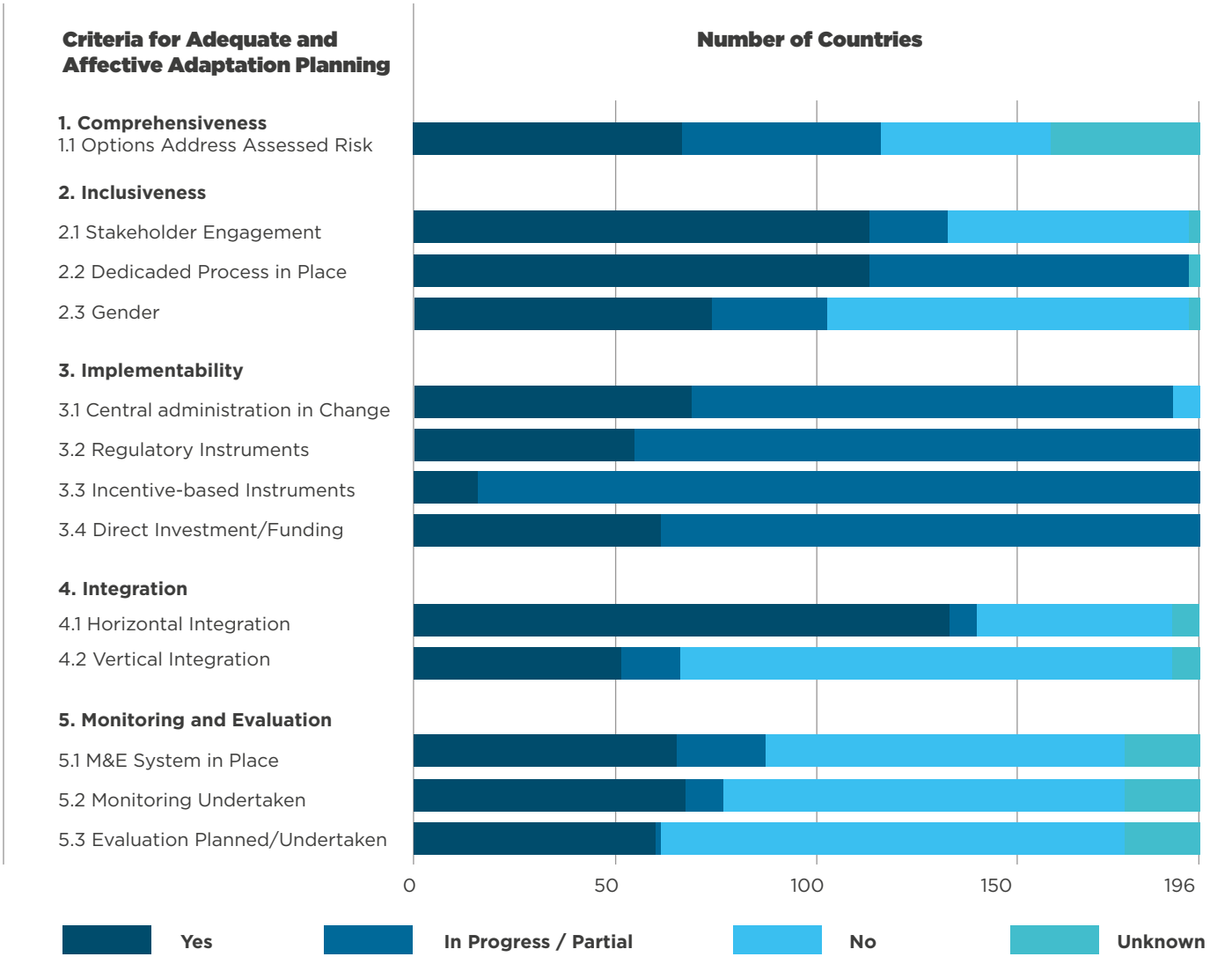
Document	Source	Focus	Long or Medium Term
NAP	UNFCCC, 2010	Adaptation **actions** and project pipelines. Sectoral or economy wide.	Medium
NDC	Paris Agreement, 2015	Mitigation **actions** with some countries adding adaptation.	Medium
LTS	Paris Agreement, 2015	Mitigation **trajectories** with some countries adding adaptation.	Long
PLP	Acuerdo de París, 2015	Adaptation **policies** based on climate risk assessments and projections.	Long
CRP	IPCC	Integrated mitigation and adaptation **policies** with a focus on climate risks impacts and low carbon trajectories.	Long

The following sections in the report will describe the approaches, tools and methodologies that are used most frequently to achieve effective LTAP.

1.3. Approaches, Tools and Methodologies for Adaptation Planning

The 2021 Adaptation Gap report explains that assessing the effectiveness of adaptation planning at the global level is currently not possible because there is no consensus on how to conduct such an assessment (UNEP, 2020). Nevertheless, the report states that different dimensions of adaptation planning can be examined to understand how carefully countries are addressing their climate risks: comprehensiveness, inclusiveness, implementability, integration and monitoring and evaluation (see Figure 2). These aspects help provide a clearer picture of whether relevant stakeholders – including women – are participating in planning processes and whether and how integration is present across sectors and government levels (UNEP, 2020).

Figure 2: Assessing the Adequacy and Effectiveness of Adaptation Planning Worldwide



Fuente: UNDP, 2021.

The 36 documents in the LTAP literature review discuss a diverse number of methodologies, tools, and models being used by practitioners to plan adaptation actions. A range of **approaches** to carry out adaptive action exist, from ecosystem-based adaptation to community-based approaches. The parties to the Paris Agreement also have adopted a Global Goal on Adaptation and launched a process at COP26 to identify methodologies and metrics to assess progress in the implementation of Art.7.1 of the Paris Agreement.

Article 7.1 *Parties hereby establish the global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal referred to in Article 2.*

Ecosystem-based Adaptation and Community-based Adaptation Approaches

Ecosystem-based Adaptation proposes the use of biodiversity and ecosystem services as the first adaptation measure (before considering large investments in infrastructure). When peri-urban ecosystems are healthy, such as forests, wetlands, and mangroves in coastal areas, they can be essential to control floods, contribute to groundwater replenishment, purify water, and provide storm protection services, among other benefits. There are standards for ecosystem based adaptation that are useful to ensure an effective application of this approach.

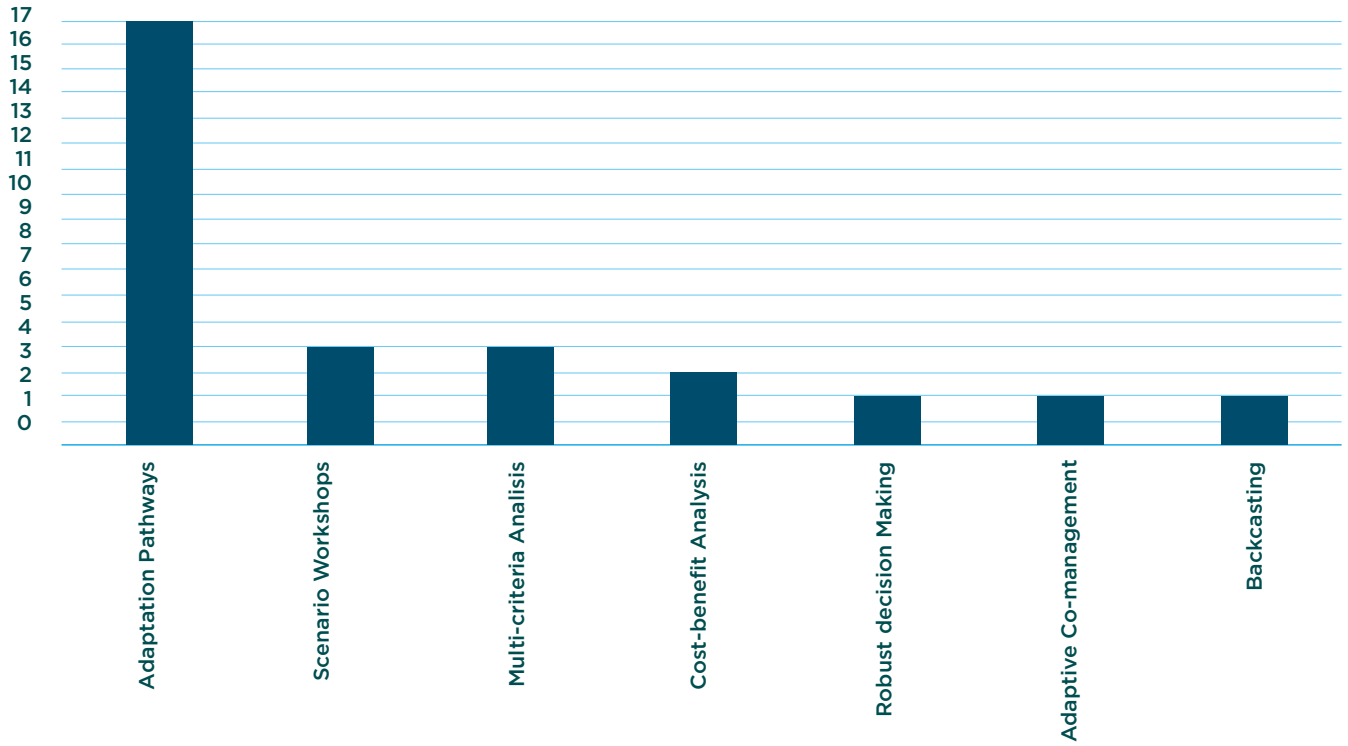
Community-based Adaptation positions communities as the protagonists in adaptation, being themselves the ones who lead the action to reduce their vulnerability and increase their adaptive capacity. This approach is based on the priorities, needs, knowledge and capacities of the community of the territory to be adapted and its link with its local, regional and national context.

Source: Aguilar et al. 2022, p.22-23.

Different planning tools and instruments are also used to implement adaptive action, such as designing adaptation pathways, holding scenario workshops and making cost-benefit analyses. The common goal of these planning tools is to conceptualize a desired future state, and analyze potential roadmaps for achieving this vision, while considering the critical interdependencies, choices, and trade-offs that these options may bring about. Underlying these factors is climatic, socioeconomic and ecological uncertainty, which must also be taken into account.

By far the most common tool identified in the review for this report was the adaptation pathways planning method, which was referenced in seventeen documents (see Figure 3). Other tools include scenario workshops, multi-criteria analysis; cost-benefit analysis; and robust decision making (RDM). Adaptive co-management tools and backcasting were also cited. As another reference point, a joint study of adaptation planning processes in Brazil, Colombia, Dominican Republic and Peru found that the primary tools used in these countries were scenario building, climate change impact frameworks, time series analysis and multi-criteria analysis, interviews and Delphi consultations (Rodríguez Escobar and Cuervo González, 2014).

Figure 3: Recorded frequency in this report of use of different planning tools

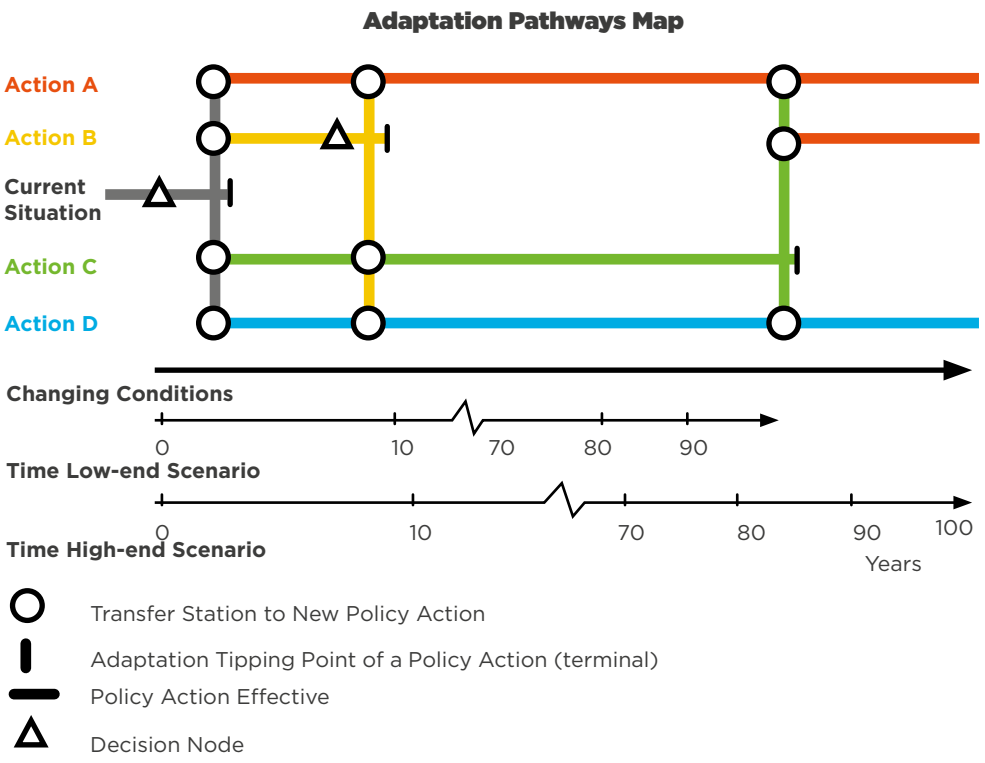


Based on the literature review, a brief summary of definitions of tools and methodologies for LTAP are provided below.

1.3.1. Adaptation Pathways

The adaptation pathways method is widely used for long-term adaptation planning as it encourages flexibility and openness to different options (Ramm et al., 2017). This method identifies and assesses the feasible responses and measures over time to different climate change scenarios and is designed to be dynamic and adaptive to changing environmental conditions over long time periods (Zandvoort et al., 2017). It makes use of 'signposts' and 'triggers' to shift adaptation policies over time, before a given strategy reaches the tipping point of becoming maladaptive (Hermans et al., 2017). It can comprise other tools such as scenario workshops and robust decision-making (see other entries in this section).

Figure 4: Graphic scheme of the Adaptation Pathways method



Source: Haasnoot et al. (2013)

Haasnoot et al. (2012, 2013)[2] lay the groundwork for adaptation pathways as a valuable method for decision making under deep uncertainty, highlighting their ability to offer feasible and flexible policy options to diverse stakeholders. Deep uncertainty is a lack of exact knowledge which arises through the combination of two types of uncertainty – complexity, which refers to uncertainty in interdependent systems, and deficit, which comes from inaccurate models and measurement (Tye and Altamirano, 2017). Given countless sociological factors, interdependent systems and limitations of climate projection methods, deep uncertainty remains a pervasive issue in the climate change field. By pointing out when a policy could fail over long timeframes, this approach provides decision makers a unique flexibility to address deep uncertainty and avoid maladaptation – whether through inaction or through inappropriate actions. At its core, adaptation pathways are attractive for policy-makers due to: 1) the use of objective-based thresholds; 2) the ability to handle uncertainty in principal drivers; 3) offering a wealth of adaptation options and "no regrets" anticipatory options in a timely manner; 4) the ability to address possible lock-ins; and 5) incorporating multiple stakeholder preferences (Haasnoot et al., 2012; IPCC, 2022). The approach identifies actionable policy options and should generate useful knowledge and challenges for investors to implement actions at the local, regional, national and sectoral level (Ross and Fransen, 2017).

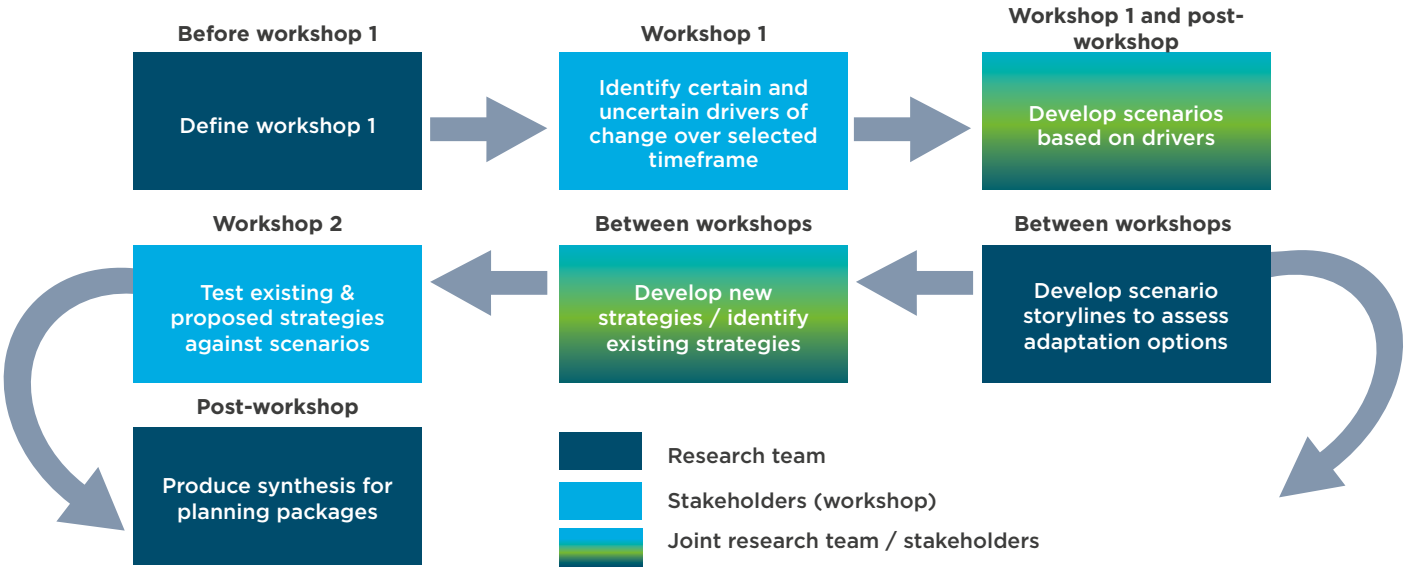
This method faces barriers due to a perception of high complexity and subsequently low accessibility, limiting its usefulness for decision makers in crafting adaptation policy. Governments often do not possess the expertise to address uncertainty using the adaptation pathways method, while deterministic or stochastic assumptions about the future are not considered sophisticated enough for long-term adaptation planning (Ramm et al., 2017). Simulation and visualization tools (see Figure 4) may help overcome the accessibility barrier by helping decision makers better navigate the complexity of this process (Hyun et al., 2021).

1.3.2. Scenario Workshop and Scenario Planning

The scenario workshop method is a commonly cited participatory tool for adaptation planning. Workshops are designed to understand local and diverse stakeholder attitudes, address preferences, and to anticipate future challenges and needs. The exact methodology for scenario workshops is diverse and context-specific but tends to seek consensus regarding adaptation policy options and the development of an action plan (Zandvoort et al., 2017).

[2] https://www.sciencedirect.com/science/article/pii/S095937801200146X

Figure 5: Explorative Scenario Planning and Workshops



Source: Serrao-Neumann et al. (2019).

Scenario workshops can carry the added social dividends of connecting diverse groups and fostering dialogue in order to galvanize local action and are used in a variety of sectors from business to national defense. However, there are challenges associated with scenario workshops and participatory approaches more broadly, including time constraints, low stakeholder experience in scenario analysis, and difficulty engaging participants (Reimann et al., 2021).

Scenario workshops present strong synergies with the adaptation pathways approach, and the integration of these two – referred to as scenario workshop and adaptation pathways (SWAP) – can carry added benefits. The wealth of policy options adaptation pathways method offers synergizes with the scenario workshops' tool collaborative structure. Additionally, the incorporation of diverse stakeholder views and the framing of adaptation in the context of local storylines can increase support for policy decisions made using adaptation pathways. The complexity and large datasets associated with adaptation pathways present a challenge for their use alongside scenario workshops; however, this barrier can be overcome with support from experts. Ultimately, the transdisciplinary use of both tools together is found to successfully accelerate adaptation planning, as opposed to adaptation pathways implemented via a top-down approach (Campos et al., 2016).

1.3.3. Multi-criteria Analysis

Multi-criteria analysis (MCA) or multi-criteria decision analysis (MCDA) is a tool which allows decision makers to evaluate conflicting priorities (Hafezi, 2018). This methodology involves defining a series of action alternatives in relation to different criteria, generating a comparative matrix. Each cell represents the alternative performance regarding the criteria (**See Table 4**).

Table 4: Example of a Comparative Multi-criteria Analysis Comparative Matrix

	Objective/Target **Reduce in 70% the average annual number of displaced** people as a result of extreme weather events by year 2050.			
		Criteria 1 Adaptation Effectiveness	**Criteria 2** Cost/Benefit	**Criteria 3** Distributive Impact and Equity
Alternative Actions	**Alternative 1** Public Infrastructure Works	High	High (fiscal), Low (private sector)	High (relocation)
	Alternative 2 Voluntary Building Improvement Promotion Scheme	Medium/Low	Low (fiscal), Low (private sector)	Low
	Alternative 3 New Land Zoning/Building Rules	High (long term), Low/ Medium (short term)	Low (fiscal), Medium (private sector)	Low

Through qualitatively determining which trade-offs are acceptable for different scenarios, decision makers can employ this tool to make otherwise difficult adaptation choices. Multi-criteria analysis can be a powerful tool because it incorporates both monetized and non-monetized costs and applies values beyond cost efficiency (Gordon et al. N/D).

Multi-criteria analysis synergizes well with participatory tools such as the scenario workshop tool. As a consensus-based approach (Gordon et al. N/D), multi-criteria analysis can be applied in collaborative and participatory situations and has been used successfully in combination with workshops for adaptation planning (Zandvoort et al., 2017).

One potential drawback to this tool is that reducing a set of qualitative and quantitative criteria down to a single score is seen as too subjective, and therefore easily influenced by stakeholders. Multi-objective optimization is a method that can help overcome this subjectivity; however, it requires a much higher technical capacity (Ramm et al., 2017).

1.3.4. Cost-benefit Analysis

Cost-benefit analysis is another structured tool used to support adaptation policy decisions and can help address the field's many competing priorities (Gordon et al. N/D). Like multi-criteria analysis, cost-benefit analysis offers an avenue for decision makers to evaluate key trade-offs between policy options, albeit with less qualitative flexibility.

Cost-benefit analysis offers a framework to assess if the cost of implementing a measure is higher or less than the benefits that would flow from it. It requires identifying and quantifying the costs and benefits associated with the alternative measures over time and comparing them. Among its limitations resides the need to make these estimates incorporating discount rates to bring future benefits and costs to the present (**Fig. 6**).

Figure 6: Graphical representation of the process of a Cost-benefit analysis

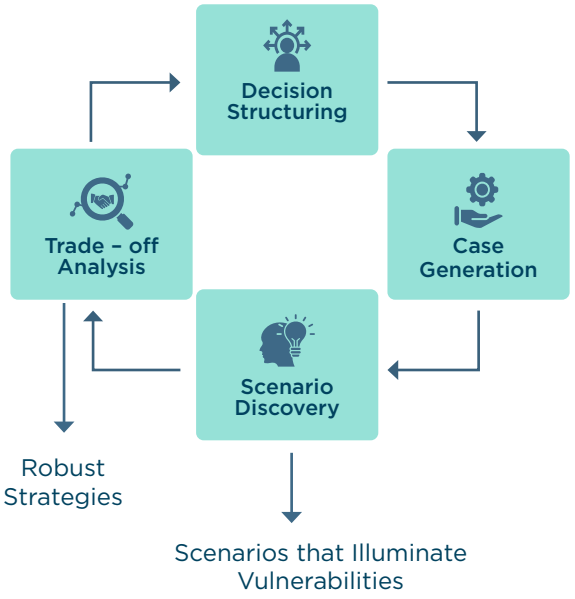
Source: WeAdapt Platform (2017).

Cost-benefit analysis is commonly used in conjunction with other tools and methods, such as multi-criteria analysis and scenario workshops (Zandvoort et al., 2017; Gordon et al., n/d). Additionally, cost-benefit analysis has been used by some researchers to evaluate uncertainty and risk in the context of adaptation, though others find it inadequate for LTAP (Ramm et al., 2017). One issue with Cost-benefit analysis is adequately incorporating the value of reducing future risks, which means assigning an appropriate discount rate (to learn about these methodologies, see Mechler et al., 2008).

1.3.5. Robust Decision-making

Robust decision-making (RDM) is another tool for evaluating trade-offs between policy options, specifically designed for conditions of uncertainty. The RDM methodology seeks to support current decisions considering all possible future scenarios of climate, land use, and socioeconomic conditions (see figure 7). It combines quantitative modeling with information provided by stakeholders, most of whom must deal with the social, environmental, and economic problems arising from climate change. A strategy based on RDM is more likely to have political support as it combines the specific sets of future conditions (Bhave et al., 2016). Decision makers can benefit from the robust decision-making approach in long-term adaptation planning, as uncertainty affects both long timeframes and adaptation more broadly (Williams and Waisman, 2017).

Figure 7: Robust Decision Making Tool



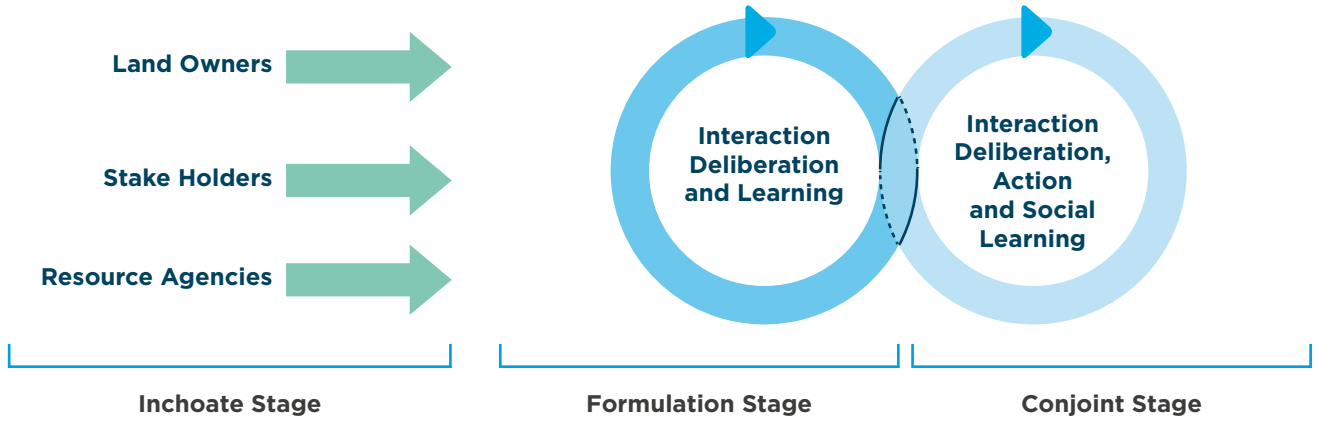
Source: Dittrich et al. (2016).

Despite its potential value of this tool, some governments have opted for more traditional tools such as cost-benefit analysis in adaptation planning – possibly due to gaps in knowledge and capacity – while researchers have found that simpler methods for evaluating uncertainty such as cost-benefit analysis (CBA) are inadequate for long-term adaptation (Ramm et al., 2017). Ramm et al. (2017) identify that, while tools such as RDM offer the potential to advance long-term adaptation planning through addressing uncertainty, many governments (especially local governments) lack the capacity to utilize such tools effectively.

1.3.6. Adaptive Co-management

Adaptive co-management (ACM) is a methodology to adaptation planning that emphasizes the continuous revision of institutional arrangements and environmental knowledge through an iterative learning process (see Figure 8). The method consists of three evolutionary stages for dynamic adaptation governance: 1) priming stakeholders; 2) enabling policies and programs; and 3) implementing adaptation (Butler et al. 2016b). Co-management involves resource users' communities in the management of natural resources as main actors, sharing power and responsibility with government agencies (Kofinas, 2009).

Figure 8: Adaptive Co-Management for Climate Change Adaptation



Source: Plummer & Baird (2013).

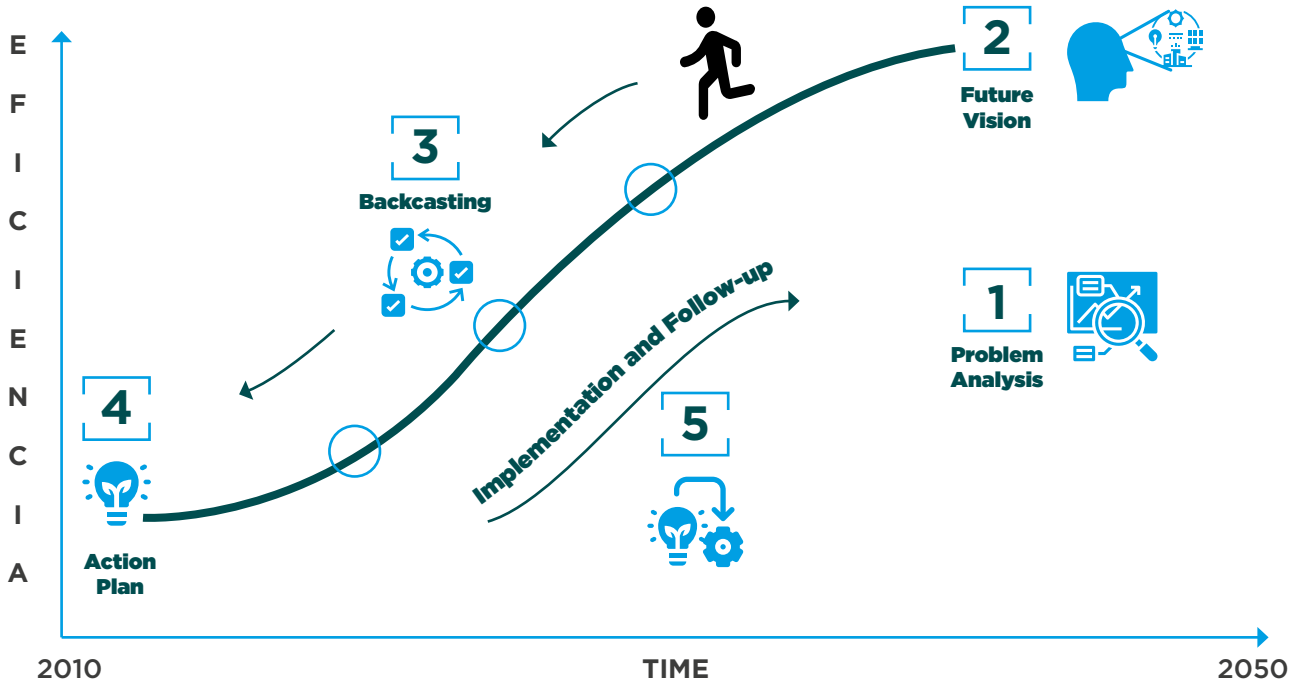
The dynamic nature of this method has strong synergies with adaptation pathways and is used in design approaches to prime transformative adaptation pathways. The emphasis on learning and the priming of stakeholders is additionally conducive to synergies with participatory approaches such as scenario workshops, which can also be used in conjunction with this tool (Butler et al., 2016).

Despite offering high flexibility and synergies with common approaches, adaptive co-management appears to be challenging to implement due to the lack of policy windows and the substantial amount of time needed for sufficient political engagement and institutional change to affect existing planning processes (Butler et al., 2016).

1.3.7. Backcasting

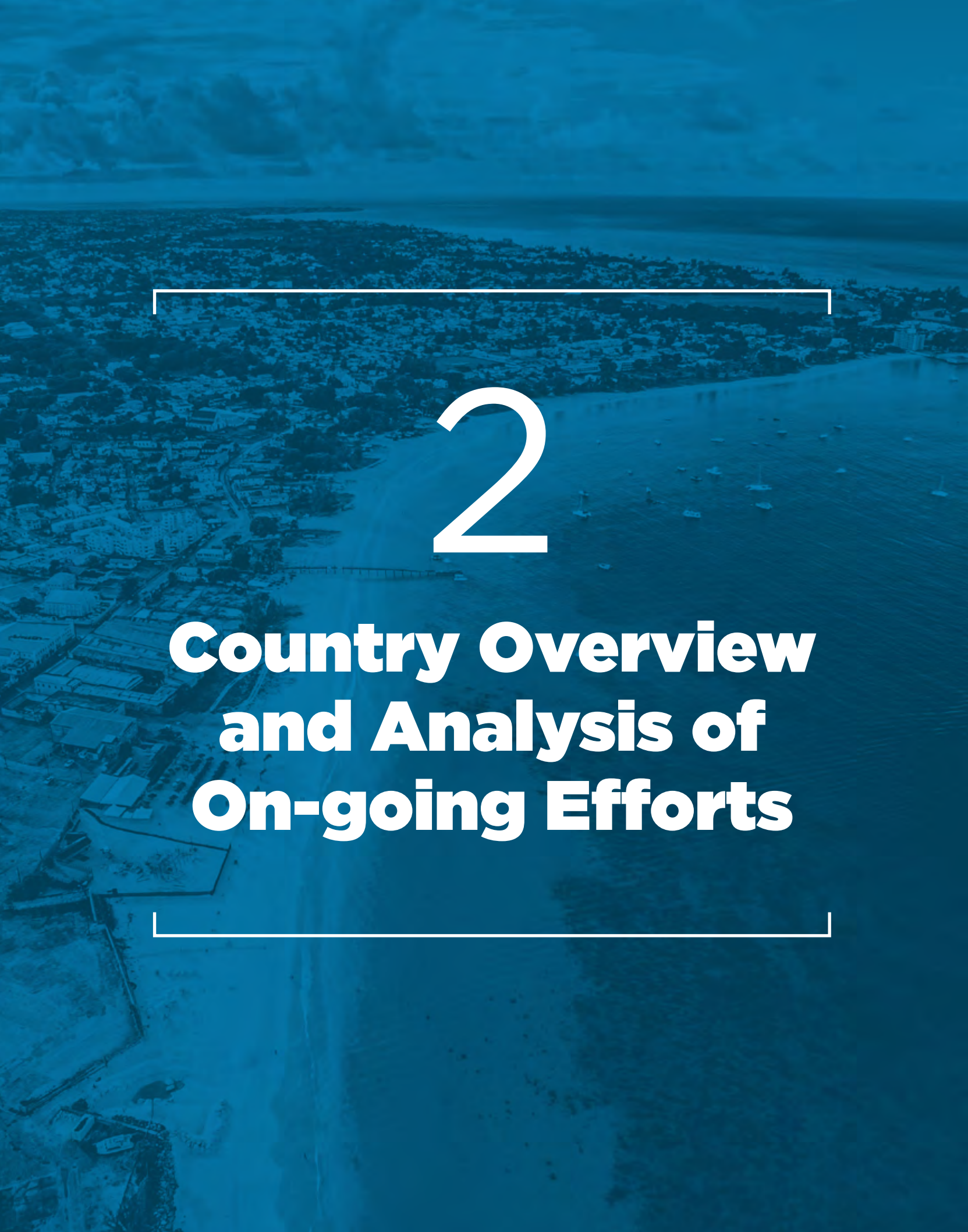
Backcasting is a planning method which can be valuable for adaptation over longer timeframes. The process consists of starting with the desired end state and working backwards to the present (see Figure 9). It can identify tipping points or thresholds that are to be avoided or exploited.

Figure 9: Backcasting Methodology



Source: Vojinovi & Maksimovi (2019).

Backcasting guides analysis to make it consistent with ambition and can serve to indicate transformational decisions and potential barriers (Williams and Waisman, 2017). Backcasting is additionally useful because it can help countries avoid locking resources into specific actions that may be prove maladaptive over long time periods (Robertson et al., n.d.). For example, Colombia took advantage of backcasting decarbonization and carbon neutrality models to integrate mitigation and adaptation targets, defining through this method an Agriculture, Forestry and Other Land Use (AFOLU) target. In this case, the mitigation-oriented information and models were also useful to define adaptation trajectories.



2

Country Overview and Analysis of On-going Efforts

EThis section presents an overview of the long-term adaptation planning processes and approaches in eight LAC countries, listed alphabetically: Argentina, Barbados, Colombia, Costa Rica, Guatemala, Jamaica, Mexico, and Uruguay. When it comes to formulating long-term adaptation plans, there is no one-size-fits-all approach or structure, and each country undergoes their own unique and appropriate process (United Nations, 2019). For these reasons, a country's unique environmental, development and political context must inform which planning approach is most suitable and realistic. Countries in Latin America and the Caribbean typically integrate their long-term adaptation goals into one or more of the following: LTSs, National Adaptation Plans, Nationally Determined Contributions (NDCs), national development plans, sectoral plans and more.

Taking a climate resilient pathway that includes both mitigation and adaptation in a long-term planning process can also help integrate and align a country's multiple policies and plans, acting as an umbrella framework (Robertson et al., n.d.). The inherent intersectionality of decarbonization with climate resilience and sustainable economies is increasingly recognized, as evidenced by the IDB's new NDC Invest initiative, which provides technical and financial support to countries in the LAC region (Jaramillo and Saavedra, 2021). This emerging trend in LAC and elsewhere is resulting in countries such as Argentina, Colombia, Chile, Uruguay, and Peru developing Long-Term Climate Strategies that are not focused solely on mitigation, and that include specific adaptation targets (Jaramillo and Saavedra, 2021). An example of an LTS with cross-cutting vision of climate resilience is Chile's Long-term Climate Strategy (ECLP), which has a 30-year time horizon extending to 2050 and gives equal weight to both decarbonization and adaptation (Government of Chile, 2022). Along these lines, the Colombian LTS integrates mitigation, adaptation and disaster risk management.

For some governments, long-term strategies with their multi-decade timelines and ambitious goals are appealing but aspirational. Up to now, many countries have conducted adaptation planning via National Adaptation Plans (NAPs) using available international finance and employing their planning departments, ministries of environment and other national actors. Even though progress has been achieved at the policy and planning level on many fronts, and long-term climate plans in various sectors have been articulated, almost half of LAC countries do not yet have a long-term resilient vision and roadmaps to set them into motion (**see table 5**).

Table 5: Latin American and Caribbean countries are generally planning for climate adaptation more towards the short- and medium-term rather than the longer-term (2050)

Country	Time Horizon	Country	Time Horizon	Country	Time Horizon
Argentina	2030	Dominicana	2030	Nicaragua	2030
Antigua & Barbuda	2030	Dominican Republic	2030	Panamá	2050
Bahamas	2030	Ecuador	2030	Paraguay	2030
Barbados	2030	El Salvador	2025	Perú	2050
Belize	2030	Guatemala	2050	St. Kitts & Nevis	2030
Bolivia	2030	Grenada	2030	St. Lucia	2028
Brazil	2040	Guyana	2025	St. Vicent and the Grenadines	2030
Chile	2050	Haití	2030	Suriname	2030
Colombia	2050	Honduras	2030	Trinidad and Tobago	2030
Costa Rica	2050	Jamaica	2030	Uruguay	2050
Cuba	2030	Mexico	2050	Venezuela	2030

Many countries are aware that climate change cannot be addressed as an isolated problem, and it is interesting to see that particularly those facing higher levels of poverty, **incorporate adaptation, resilience building, and disaster risk reduction, as well as the protection of biodiversity**, into national development strategies. The strength of these types of planning documents is their cross-cutting nature; they encompass a wide range of sectors and interests and can be written in anticipation of intersectoral trade-offs and other non-climate variables. **This format helps countries address the relationship of poverty and climate change via the lens of changing livelihoods**. In some cases, countries will build adaptation into individual sectoral plans, such as Barbados' detailed Integrated Coastal Zone Management Plan (Barbados Coastal Zone Management Unit, 2020). **Some countries may also choose to integrate long-term adaptation goals into their NDCs**.

Icon Table of Sectors for Adaptation

Agriculture and Farming	Food Security	Human Settlements	Livelihoods
Transport	Coastal Zone	Energy and Mining	Biodiversity & Ecosystems
infraestructure	Disaster Management	Social Protection	Cities
Tourism	Health	Housing, Water and Sanitation	Oceans, Water Resources and Blue Biodiversity
Energy	Development and Territorial Planning	Forest Resources	
Water	Fisheries	Food Security	Strategic Infrastructure Protection and Cultural Assets
Waste Management	Industry and Commerce	Integrated Water Resources and Water Management	

2.1 ARGENTINA

Policy Instruments at the National Level that Integrate the Component of Adaptation to Climate Change

LTS: under development
NDC 2030: First NDC (2016), Second NDC (2020), Enhanced NDC (2021).
NAP: Under development, expected by second semester of 2022.

Argentina submitted its first NDC (2016) a second NDC in 2020 and an enhanced NDC in 2021 which **includes a section on adaptation** in line with its Second Adaptation Communication.

Sectoral Coverage for Adaptation

Agriculture and Farming	Transport
Industry and Commerce	Infraestructure
Tourism	Energy
Health	Biodiversity & Ecosystems

Consideration of Long-term Climate Projections:

Yes, they are considered in the NDC and also has online interactive climate risk maps (Gobierno de la República Argentina, 2022).

Argentina is working to build an integrated, long-term approach to climate resilience that aligns visions and planning processes for both its LTS and NAP (currently in development by different teams within the same ministry). While a NAP has not yet been articulated, it will involve a regional approach that emphasizes gender and diversity; ecosystem-based adaptation; community-based adaptation and integrated management of disaster risk (MAyDS, 2020). Argentina published seven sectoral Plans for the implementation of its NDC, three of which incorporate an adaptation approach: Agriculture (GNCC-MAyDS, 2019), Infrastructure (GNCC-SAyDS, 2019), and Health (GNCC-SAyDS, 2019). These plans are currently under review to incorporate new priorities and align them with the enhanced NDC (Presidencia Argentina, 2021).

Capacity-building is heavily emphasized and already underway, including training an adaptation consultant in each of the country's 24 provinces (Expert interview, 2021). The country's enhanced NDC (Presidencia Argentina, 2021) highlights priority areas, knowledge and tools gaps for adaptation and its priorities that will be aligned with the LTS. Argentina largely takes an approach that highlights self-sufficiency, inter-ministerial coordination and participation of civil society (Expert interview, 2021). Regarding adaptation, Argentina is implementing a bottom-up process to address the regional approach of the NAP, together with sub-national governments and civil society. It has online maps presenting the long-term projections and climate risks and vulnerability on the basis of data from in its third national communication (Gobierno de la República Argentina, 2022) (See further information in **Appendix 1**).

2.2 BARBADOS

Policy Instruments at the National Level that Integrate the Component of Adaptation to Climate Change

LTS: No.
NDC: First NDC (2016), Barbados Second National Communication (Government of Barbados, 2018), and Updated First NDC (2021)
NAP: Planning stage.

Adaptation planning is incorporated into its NDC, its national Roofs to Reefs program, and included in its national climate communications.

Consideración Sectorial de la Adaptación

- Coastal Zone
- Water
- Health
- Disaster Management
- Agriculture and Farming
- Tourism
- Fisheries

Long-term Climate Projections Consideration:

N/A

The Government of Barbados considers climate change as a threat to its growth and prosperity and views adaptation as imperative to protecting its environment, society and economy (Government of Barbados, 2018). As emphasized in the Roofs to Reefs vision, adaptation and climate resilience are Barbados' main priorities, and have been holistically integrated into the development of all government policies (Government of Barbados, 2021). Barbados also aims to be the first 100 percent fossil-free island-state by 2030 (Government of Barbados, 2021). To facilitate a coherent climate-resilient development, the Government of Barbados aligns its national adaptation measures with the Sendai Framework on Disaster Risk Reduction, the Sustainable Development 2030 Agenda and the Paris Agreement. Additionally, the country's Updated First NDC is aligned with other Small Island Developing States (SIDS) and member countries of the Alliance of Small Island States (AOSIS) (Government of Barbados, 2021). In addition to basing adaptation approaches on objective data, the Government of Barbados emphasizes the importance of considering material and behavioral constraints to adaptation, cultural norms, and underlying conditions and structures to foster locally-sensitive and balanced decision-making processes for adaptation (Government of Barbados, 2021) (See further information in Appendix 1).

2.3 COLOMBIA

Policy Instruments at the National Level that Integrate the Component of Adaptation to Climate Change

LTS: Government of Colombia, 2021.
NDC: 2020.
NAP: 2016.

Colombia incorporates adaptation both in its revised NDC (2020) and its LTS (2021). It also has several territorial Adaptation Plans, as well as a PNACC Action Plan that defines adaptation actions to 2030.

Sectoral Coverage for Adaptation

Transport	Energy and Mining
Infrastructure	Industry and Commerce
Agriculture and Farming	Defense and Social Protection
Housing, Water and Sanitation	Health
Water	Biodiversity & Ecosystems

Consideration of long-term climate projections:

Colombia´s LTS considers long-term climate projections to 2040, 2070, y 2099, under all the representative concentration pathways (RCPs).

Colombia is far along in developing policies and frameworks for long-term adaptation, although the national long-term strategy E2050 is yet to be implemented. Colombia's National Planning Department has taken a leading role in developing long term strategies. The E2050 will be implemented through the NAP, the NDC and existing sectoral and territorial instruments. Colombia's National Climate Change Adaptation Plan (PNACC) was informed by national policies, studies conducted at the local and international levels, and results from future climate scenarios (Republic of Colombia DNP, 2018). Colombia has submitted an enhanced first NDC (Government of Colombia, 2020) and Comprehensive Climate Change Management Plans are developed and implemented at the sectoral and territorial levels through the SISCLIMA framework.

Overall, Colombia seeks to take a holistic approach to resilience building while strengthening the economy (Delgado, 2020; Republic of Colombia, Ministry of Sustainable Development, 2020) and seeks to tackle vulnerability and disaster risk in tandem, with quantitative adaptation targets (Republic of Colombia DNP, 2012; Cruz and Ospina, 2019) (See further information in Appendix 1).

2.4
COSTA RICA

Policy Instruments at the National Level that Integrate the Component of Adaptation to Climate Change

LTS: 2019.
NDC: First NDC (2015) and Updated First NDC (2020).
NAP: National Adaptation Plan finalized in 2022, NAP-Ag (2017), National Adaptation Policy (2018).

The Updated First NDC (2020) includes a comprehensive adaptation component in all its climate projections.

Sectoral Coverage for Adaptation

- Transport
- Waste Management
- Development and Territorial Planning
- Agriculture and Farming
- Energy
- Oceans, Water Resources and Blue Biodiversity
- Infrastructure
- Industry and Commerce
- Biodiversity & Ecosystems

Consideration of long-term climate projections:

Costa Rica used the Central America Climate Change Scenarios Viewer (https://centroamerica.aemet.es/) to plan their climate change scenarios in adaptation. It includes consideration of adaptation in climate projections under all RCP scenarios to 2010-2039, 2040-2069, 2070-2099.

In the 4th National Communication, and to generate the NDC / Communication on adaptation and the NAP 2022-2026, the information generated by the IMN with the PRECIS model has also been used. (the one from aemet uses the CORDEX model).

Costa Rica's holistic approach to long-term planning makes use of existing policy and programmatic frameworks and integrates sophisticated tools such as adaptation pathways and scenario workshop methods. Costa Rica seeks to generate innovative opportunities and promote sustainable development through inter-institutional and cross-sectoral articulation of priorities and collaboration, which the country can facilitate thanks to existing inter-institutional coordination, and the establishment of several climate change councils (NAP, 2018). The approach to long-term planning is centered on human rights, gender and social equity with an emphasis on civil society engagement and transparency, which Costa Rica does through public consultations. For example, the NDC was translated to different languages (Expert Interview, 2021). Its National Adaptation Policy process, for example, was formulated through six thematic working groups (agriculture, livestock and fishing; biodiversity; infrastructure; water resources; health; and tourism) (NAP, 2018) (See further information in Appendix 1).

2.5 GUATEMALA

Policy Instruments at the National Level that Integrate the Component of Adaptation to Climate Change

LTS: 2021.
NDC: 2017.
NAP: 2018

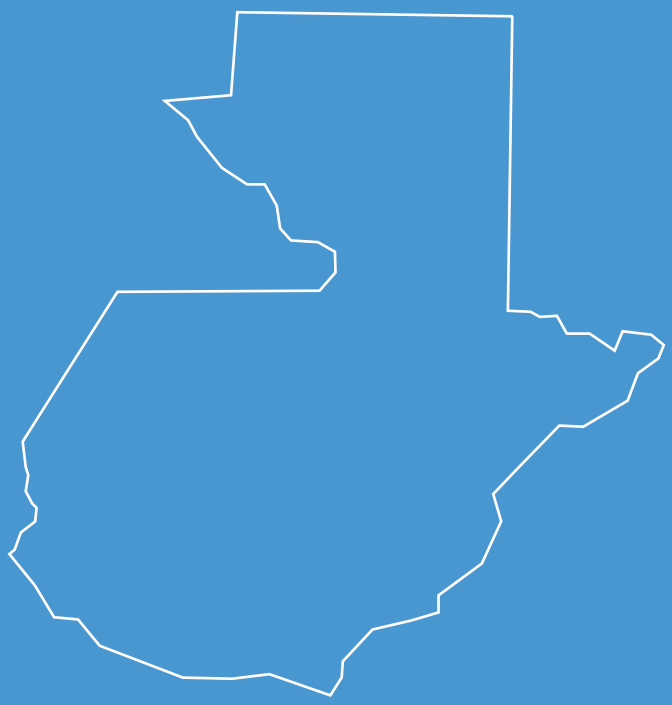
Reports on adaptation measures in its Third National Communication, which will be included in its next NDC (MARN et al, 2021).

Sectoral Coverage for Adaptation

- Health
- Food Security
- Coastal Zone
- Integrated Water Resources and Water Management
- Agriculture and Farming
- Forest Resources
- Infrastructure
- Biodiversity & Ecosystems

Consideration of long-term climate projections:

Third National Communication (MARN et al, 2021) includes scenarios RCP2.6, RCP4.5 y RCP8.5 for the period 2010-2099.



Guatemala has recently presented its LTS (Gobierno de Guatemala, 2021a) and published a Third National Communication which incorporates long term climate change projections, considers adaptation and features the executive summary in four languages (English, Spanish, Kaqchikel and K'iche') (Gobierno de Guatemala, 2021).

Guatemala's 2018 "Plan de acción nacional de cambio climático" is in its second iteration. It targets six focal areas for adaptation: public health; coastal marine zones; agriculture and food security; forest resources, ecosystems and protected areas; infrastructure; and integrated water resource management. There are 153 actions distributed across the focal areas, 28 goals, and 9 results. The plan includes a Monitoring and Evaluation framework which appraises progress based on international agreements like the country's NDC, from national processes, and from the perspectives of linked actors (MARN, 2018).

In 2013, a Framework Climate Change Law was passed that established the National Council of Climate Change, presided over by the President (Art. 8). Recently, the Council declared Guatemala as a highly vulnerable country and requested that all national government interventions focus on improving adaptation capacities and enhancing resilience of most vulnerable groups where climate change effects are growing in frequency and intensity (Gobierno de Guatemala, 2021). The Council, made up of multiple governmental actors, is expected to be able to plan the development of Guatemala taking into account the expected impacts of climate change. Notably, the law established a national climate change fund for projects that address adaptation, risk management and/or mitigation (80 percent of the fund allocated to the former two) as well as a national climate change information system (MARN, 2013) (See further information in Appendix 1).

2.6 JAMAICA

Policy Instruments at the National Level that Integrate the Component of Adaptation to Climate Change.

LTS: Under development.
NDC: First NDC (2015). Updated NDC (2020).
NAP: Jamaica has a National Adaptation Planning Process and received resources from the GCF in 2021 to commence the preparation of its NAP.

Jamaica has a National Adaptation Planning Process, the development goals of which are laid out in Vision 2030 Jamaica (national development plan). In its Vision 2030 Jamaica outlines four national strategies: 1) improve resilience to all forms of hazards; 2) improve emergency response capability; 3) develop measures to adapt to climate change; and 4) contribute to the effort to reduce the global rate of climate change (Planning Institute of Jamaica, 2009). Jamaica's Updated NDC (Government of Jamaica, 2020) focuses primarily on increasing the ambition of its mitigation component.

Sectoral Coverage for Adaptation

Agriculture and Farming	Coastal Zone
Fisheries	Tourism
Transport	Health
Water	Human Settlements

Consideration of long-term climate projections:

N/A

Understanding the need to be less reactive to crises and frequently changing political landscapes, in the early 2000s, the Jamaican government adopted a more strategic, long-term framework, which became the "Vision 2030 Jamaica: National Development Plan" (Expert interviews, 2021). In its Third National Communication Jamaica also explains the sectoral application of its adaptation goals (Government of Jamaica, 2018). In Vision 2030 Jamaica out of fifteen National Outcomes identified by the plan, one is explicitly related to climate adaptation while two others are related (Planning Institute of Jamaica, 2009). The Ministry of Finance and the Public Service uses this Plan and the accompanying three-year Medium-Term Socio-economic Framework (MTF) to ensure all programs and interventions are informed by and aligned with national priorities. The MTF also aids in keeping the Vision 2030 document "alive" in that each MTF reviews the previous 3-year term and seeks to address gaps/challenges as well as incorporate and plan for new and emerging issues. Many of the policies that Jamaica develops and adopts benefit from consultations with university scientists. This is one of the factors that makes Jamaica a regional leader: their State of the Jamaican Climate (2012, 2015 and 2019) are considered best practice and are used as templates by other countries (Government of Jamaica, 2022). See further information in Appendix 1.

2.7 MEXICO

Policy Instruments at the National Level that Integrate the Component of Adaptation to Climate Change.

- **LTS:** Estrategia Nacional de Medio Siglo (EMS) de Cambio Climático de México, 2016.
- **Updated NDC:** 2020.
- **NAP:** planning stage.
- General Law on Climate Change (2012, 2018)
- National Climate Change Strategy, Vision 10-20-40, 2013 (updating phase in terms of adaptation)
- Special Climate Change Program (PECC) 2021-2024 with an adaptation objective with seven strategies and 50 specific actions and an adoption objective with synergies in mitigation of Greenhouse Gases.

The 2020 updated NDC maintains the commitments made in terms of vulnerability reduction in 2015 and significantly increases the attention and weight of adaptation to climate change by having greater detail on the type of actions that make up the entire adaptation process. The adaptation component of Mexico's NDC[3] considers 27 lines of action, integrated into five strategic axes.

It should be noted that the ENCC is currently the document that contains the most complete information on adaptation for the country.

Sectoral Coverage for Adaptation

Agriculture and Farming	Disaster Management
Infrastructure	Integrated Water Resources and Water Management
Development and territorial planning	Strategic Infrastructure protection and cultural assets
Coastal Zone	Biodiversidad y Ecosistemas
Livelihoods	

Consideration of long-term climate projections

Mexico´s LTS presents a strategy for climate change adaptation, based on a vulnerability assessment for temperature and precipitation expected changes in Mexico in a RCP8.5 scenario.

[3] As of the publication date of this publication, Mexico's NDC updated to the year 2020 is suspended by order of a collegiate court. Therefore, the information presented here reflects the information in the document presented by the Government of Mexico to the UNFCCC in December 2020.

Mexico has adopted strong national climate policies (framed under the General Climate Change Law), comprehensive institutional arrangements and legal and regulatory instruments (including federal and subnational coordination programs and public-private working groups) which create a positive enabling environment to design and promote long-term mitigation and adaptation planning. Mexico outlines a vision for the next 10, 20 and 40 years in its LTS (SEMARNAT-INECC, 2016) and three of the five priority areas include adaptation: society, ecosystems and infrastructure and productive systems (See further information in Appendix 1).

2.8
URUGUAY

Policy Instruments at the National Level that Integrate the Component of Adaptation to Climate Change.

LTS: 2021 (SNRCC, 2021a).
NDC: 2017.
NAP:2017; 2021.

Uruguay has developed sectorial NAPs at the national level: National Adaptation Plan for Agriculture (NAP Agro) launched in 2017; National Adaptation Plan for Cities & Infrastructures (NAP Cities) launched in 2021 (SNRCC, 2021c); and National Adaptation Plan for Coastal Areas (NAP Coasts) launched in 2021 (SNRCC, 2021b).

In addition, the NAPs for Energy and for Health are in initial stages of development.

The NDC includes an adaptation component and marks all adaptation measures as unconditional.

Sectoral Coverage for Adaptation

Coastal Zone

Health

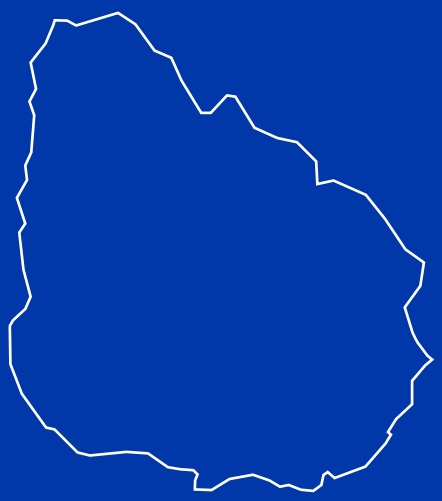
Cities

Energy

Agriculture and Farming

Consideration of long-term climate projections

Uruguay´s LTS used climate projections with horizons to 2040, 2050, 2070, 2100, under the four RCP and SSP scenarios.



Uruguay has increasingly institutionalized its adaptation planning processes under the National Climate Change Policy (PNCC), which was developed in 2017 to articulate overarching goals, strategies and lines of action in a way that aligns with mitigation and development goals and human rights priorities (Government of Uruguay, 2017b). Its Nationally Determined Contribution (NDC) articulates the implementation of the PNCC, framing and defined by sectoral NAPs. The sectoral approach to adaptation planning allows for a more specific, localized approach that aligns with national goals and international agendas. Planners use existing and promote new national studies on climate risks, vulnerability, and adaptation options, and new processes are advancing disaggregated, georeferenced data for vulnerability (MVOTMA and SNRCC, 2020). The LTS of Uruguay, in its adaptation section, includes climate projections of the NAPs and risk atlases for short and long-term time horizons under the RCP 2.6, RCP 4.5, RCP 6.0, RCP 8.5, SSP245, SSP370, and SSP585 scenarios, with time projections to 2040, 2050, 2070, and 2100 (SNRCC, 2021a) (See further information in Appendix 1).

3

Barriers, On-going Efforts and Needs for Long-term Adaptation Planning and Implementation in LAC

This section brings together key elements and takeaways from the eight countries individually featured in **Section IV** (more details for each country available in Appendix C), with additional insights from the literature review. While not exhaustive, it is meant to provide an overview discussion of current efforts and approaches, as well as barriers faced and needs to successfully engage in LTAP processes.

LAC countries showcase a rich diversity of climate policy frameworks, laws, and regulations to enable long-term adaptation planning, including planning efforts at a subnational and local level. These policy instruments are meant to be supported by institutional arrangements like climate change committees and national climate governance systems to enable planning processes and nurture whole-of-government approaches. However, according to interviewees it is a challenge for many government ministries to operationalize these arrangements, as well as to think ahead more than four or six years, i.e., beyond the current administration. In some countries, the lack of ownership of these documents beyond the environment ministry means that many other sectors do not feel adequately included which could help explain limited execution, given the lack of knowledge on climate change instruments and therefore large adoption. Nevertheless, the urgency and cross-sectoral nature of the climate crisis is pushing for more long-term and holistic thinking, which are required for LTAP development. Costa Rica, Mexico and Colombia were frequently cited by workshop participants as good regional examples to follow.

In this context, this report identifies the barriers and needs which are addressed in the following subsections (**see Table 6**).

Table 6: Barriers and Needs for LTAP

Barriers and Needs
A need for development and adherence to a long-term resilience **vision** and for improved policy alignment.
More cross-sectoral **coordination** needed.
Finance continues to be a major barrier.
A need to continue widening inclusive and meaningful public **participation** efforts.
Lack of, or limited availability of **information** and tools.

3.1. A Need for Development and Adherence to a Long-term Resilience Vision and for Improved Policy Alignment

A review of national long-term strategies and plans (both those centered on climate adaptation such as NAPs and documents with adaptation considerations such as national development plans and LTS), conducted for this report reveals that, on average, LAC countries are planning with a view towards 2035. Chile, Colombia, Costa Rica, Guatemala, Mexico, Panama, Peru and Uruguay have a longer-term planning horizon (2050) yet the median for the region is 2030 (see Appendix for a regional overview).

While progress may be achieved towards long-term, decadal visions and strategies in some countries, this momentum does not always survive changes in administration and high staff turnover, leading to delays or a complete pause on adaptation work. According to interviewees, resources are often used in a siloed manner, which can slow down progress. Most countries are currently at different stages of designing and developing long-term adaptation plans and actions. While Mexico and Colombia have launched their 2050 strategies, these are nascent and not yet being implemented.

Promising trends, on the other hand, include increasing interest in and demand for integration of the climate agenda with national development priorities and a rise in efforts to meaningfully involve the participation of society – especially vulnerable groups – in the design and co-creation of long-term planning efforts.

3.2. More Cross-sectoral Coordination Needed

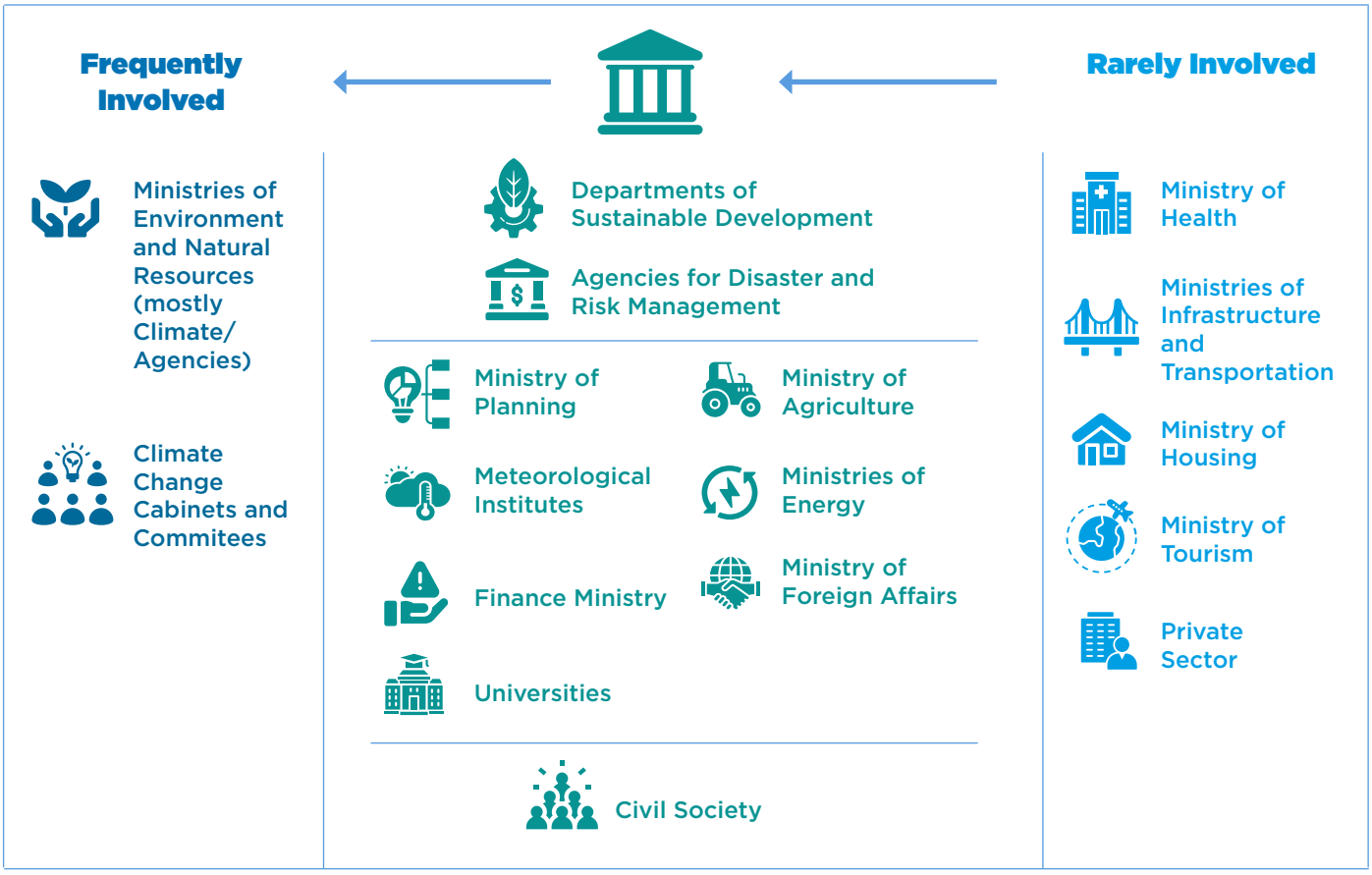
Uruguay follows a sectoral approach to long-term adaptation planning, while the other LAC countries reviewed opt for a national ministry-led approach, with political direction for inter-ministerial coordination and collaboration. In all countries reviewed, these exercises are led by their ministries of environment but the way they interact with other sectors varies; the ownership of these sectors depends on their capacity, understanding, political priorities, resources, data, and other factors. Although collaboration is occurring to an extent, many processes and ministries remain fragmented and siloed in practice.

As shown in Figure 10, responsibility for long-term adaptation processes generally falls to a small group of ministries: environment and natural resources ministries (and ad hoc climate change cabinets, committees and councils); in some cases, planning ministries also play a major role (e.g., Jamaica, Colombia), along with disaster risk management units and meteorological institutes. Sustainable development departments, finance and energy, foreign affairs, and agriculture are typically involved to a lesser extent. Ministries that are often marginally or not at all involved – despite their critical vulnerability to climate risks – include health, infrastructure, transport, housing and rural development.

Jamaica's involvement of its Ministry of Finance from design to implementation is an exception to the rule and has served the country well. A common coordination feature is the creation of climate change councils, committees and information systems; however, these do not always receive the necessary resources, including funding, to operate as they were meant to, or they may lose resources during a change in administration, significantly impacting their effectiveness. This is why it is recommended that the organs created have the direct support of the maximum executive authority of the jurisdiction (Aguilar et al., 2021).

The involvement of the ministries of finance and economics has been a clear sign of adaptation prioritization since not all countries have a planning entity. Finance and planning ministries have a critical role to play, in coordination with environmental ministries, to "support the full mainstreaming of climate policy and deliver Paris-aligned budgets and project pipelines. An effective whole-of-government approach demands stronger participation by finance ministries as well as planning and budgetary entities... Mainstreaming climate change implies a shift: climate policy should no longer be considered a purely environmental concern" (Cárdenas et al., 2021). To make the mainstreaming of climate action effective, every ministry whose competences are related to climate adaptation must be incorporated in the planning process (Aguilar et al., 2021).

Figure 10: Spectrum of actors generally responsible for developing long-term adaptation processes



3.3. Finance Continues to be a Major Barrier

Adaptation finance is a major and well-known challenge globally, both for planning and for implementing long-term adaptation plans (Ross & Fransen, 2017; LIFE-AR 2019; Mena-Carrasco and Dufey, 2021; CEPAL, 2019). Milestones for short- and medium-term objectives are also required to develop a long-term planning. While some countries of the cases studied have difficulty accessing external finance due to their rising incomes and relatively high ranking on development indexes (e.g., many LAC are ranked as middle income or high income and thus have limited access to concessional finance, even if their exposure or vulnerability to climate hazards is high), others have difficulties developing financial strategies to design actions and estimate their costs and outcomes. Finance limitations lead to insufficient human capital and the limited development of technical knowledge.

Additionally, climate finance executed by Ministries of Environment has

usually involved grants, which can limit the expectations when transformational changes are needed in pre-feasibility studies that will finance major infrastructure shifts.

There are a number of country intervention and support needs which emerged from analyses included in the literature review. Most broadly, countries need financial support to implement long-term adaptation activities. Mena-Carrasco and Dufey (2021) note the disparity in financial development across LAC and support the need for improved financial systems for adaptation. While some countries possess sophisticated sustainable finance markets, many others – especially in the Caribbean – still lack the frameworks and capabilities to direct capital flows towards climate action (Mena-Carrasco and Dufey, 2021). Multiple documents call for consistency of finance over long time periods, recognizing that delivery mechanisms should come with predictable budgets rather than sporadic funds for prescribed activities (Patel and Gebreyes, 2020) (LIFE-AR, 2019). Mena-Carrasco and Dufey (2021) identify multilateral development banks and the International Monetary Fund (IMF) as key actors that should improve their performance and "walk the talk" to match discourse with actual support through climate finance to build resilience.

Country documents and expert interviews reveal a strong appetite to better involve and incentivize the private sector in adaptation investments, as well as a continuous increase in the availability of means of implementation for the Paris Agreement, in line of international commitments and obligations. During the workshop, multiple participants also remarked that the private sector and local governments and communities should participate more robustly in long-term adaptation planning processes.

3.4. A need to Continue Widening Inclusive and Meaningful Public Participation Efforts

Workshop results reveal that various types of support received for the development of technical and participatory tools have been useful for long-term adaptation planning. Climate modeling and risk scenarios in general were referenced, with a need for more on-the-ground technical assistance as adaptation must be compatible with local environmental conditions and enabling factors. Participants also noted the value in developing methodologies to engage local actors and civil society. In some contexts, this has meant establishing information exchange networks at the local level, developing accessible climate tools that empower local climate monitoring, mapping sub-national financing instruments, and training local actors about accessing climate finance.

The desire for inclusive and meaningful participation of civil society is high,

and certain countries are taking special measures to promote equitable outcomes by better including citizens, in particular marginalized groups. The shift from in-person to virtual formats necessitated by the COVID-19 pandemic has greatly facilitated the public's involvement in participatory processes and expanded who can participate, but also limited the inclusion of a broader set of actors as not all have access to the basic needs for online consultations – such as rural or Indigenous communities – and the invitations are usually shared among usual actors.

3.5. Lack of, or Limited Availability of Information and Tools Also Remain a Barrier

The breadth and depth of climate methodologies, information and tools (such as climate models and climate scenario analysis) available varies from country to country. According to interviewees and workshop participants, many LAC countries lack baseline and basic climate information (as risk analysis and local data for greenhouse gas inventories), as well as the capacities and resources to generate and use information adequately, especially climate services. The challenge of how to address climate change uncertainty often surfaced during discussions with country stakeholders, specifically not knowing how the future will unfold and preparing for multiple scenarios.

The literature finds that decision-makers sometimes misuse or misinterpret adaptation theory or are misled by the dichotomous framing of adaptation concepts (i.e., transformative vs. incremental and maladaptive vs. adaptive; Magnan et al., 2020). Additionally, large data sets are not user-friendly for decision-makers (e.g., Hyun et al.,

2021; Zandvoort et al., 2017; Campos et al., 2016; Magnan et al., 2020). This last challenge was often cited in relation to adaptation pathways, while visualization and simulation tools were commonly listed as potential solutions to this problem (Hyun et al., 2021). Maladaptation has also been misunderstood and led to inaction.

Government officials interviewed note that countries, especially those with more limited resources, find great value in the information contained within IPCC reports. Some maintain that enough climate data and information exist to identify priorities and vulnerabilities (though not necessarily concrete actions and activities). Relatedly, there is also a need for information that is specific and practical for each sector, e.g., models of climate impacts on agricultural production for agricultural ministries. In other cases, the information exists yet is scattered across institutes and agencies, and difficult to find. Even countries in the region with more sophisticated climate data, tools, and even regional climate models, such as Costa Rica, stated in their interviews the need for better information and to increase accessibility for all sectors to identify key climate risks.

To some extent however, specific approaches such as Dynamic Adaptive Policy Pathways (Haasnoot et al, 2013) can help and overcome the lack of available data by fostering the dialogue between policy-makers, experts and civil society so as to define policies and action in spite of uncertainties - cf section 1.3 Approache and tools. The actual issue may less be the lack of data in itself than providing policy makers with relevant framings and tools to take decisions under uncertainties (Hallegatte, 2009).

4

Good Practices in Support of Long-term Adaptation Planning and Strategies in the LAC Region

This section discusses factors that stood out among countries that have helped them progress with LTAP. It includes lessons learned relevant to the LAC region that surfaced in the literature and country document review, as well as information gathered from expert interviews and workshop discussions. Concrete examples from LAC countries are included to illustrate the factors and good practices at work.

Table 7: Barriers, Needs and Good Practices for LTAP

Barriers and Needs	Good Practices
A need for development and adherence to a long-term resilience **vision** and for improved policy alignment	High-level political buy-in and alignment of adaptation to long-term national priorities and policies to support continuity of adaptation agendas.
More cross-sectoral **coordination** needed	Strong and agile inter-institutional coordination to strengthen adaptation planning processes.
Finance continues to be a major barrier	External support to build capacity and access finance. Continuous and dedicated international finance.
A need to continue widening inclusive and meaningful public **participation** efforts	Participación significativa y amplia de la sociedad civil y de actores locales en los procesos de planificación, comenzando con la etapa de diseño.
Lack of, or limited availability of **information** and tools	Opportunities for shared learning across the region.

4.1. High-level Buy-in and Aligning Adaptation to Long-term National Priorities and Policies to Support Continuity of Adaptation Agendas

EIn the LAC region, high-level political buy-in and aligning adaptation to long-term national priorities helps to address the disruptive effects of administrations changing every few years, which in some countries can mean a complete shift in priorities along with high staff turnover.

The eight countries reviewed are taking significant efforts towards integration of climate resilience into policies, and sectoral plans and strategies. These countries are responding to common critiques of adaptation planning by frequently and consistently stressing the need for a holistic approach to resilience building that strengthens the economy, improves social outcomes, and reduces climate vulnerability, among other national priorities like increasing human rights (e.g., see UN Task Team on Social Dimensions of Climate Change, 2011). Global guidance documents reviewed advocate for the integration of adaptation and LTS to create efficiencies, as well as to make long-term sustainable development more compatible with short- and medium-term planning and create synergistic policy processes (McGray, n.d.; CEPAL, 2019; Gordon et al., n.d.; Anderson, n.d.; Dazé et al., 2018). Integration is also called for mitigation and adaptation, and across national and local development (LIFE-AR, 2019).

In the LAC countries included in our analysis, adaptation and resilience are seen as imperative priorities due to the region's high vulnerability to climate change. There is wide acceptance of the co-benefits of resilience building and explicit need for "transversal" or cross-sectoral visions going forward. Integration is especially evident through Barbados' Roofs to Reefs Vision, Colombia's National Climate Change Adaptation Plan, Costa Rica's Territorial Economic Strategy for an Inclusive and Decarbonized Economy 2020-2050, and Uruguay's National Climate Change Policy. Jamaica also advocated explicitly for integrated mitigation and adaptation actions in its Updated NDC, although this appears to have translated to more mitigation-oriented commitments (Government of Jamaica, 2020).

Ensuring a holistic vision that future administrations will be committed to requires making visible the benefits of adaptation in working to achieve national priorities (e.g., synergies with sustainable development, social benefits, etc.). Such a vision is evident in Barbados' Roofs to Reefs program, which serves as an umbrella for climate, social and economic resilience and with which investments and policies must align (Expert interview, 2021). This plan enjoys full support from the Prime Minister and Ministry of Economic Affairs; nonetheless, it requires being translated into a political instrument to ensure implementation and investment prioritization. Alignment can also enable better and more consistent technical support and secure more predictable internal finance. To close the planning and implementation gap, there must

also be direction and clarity on how finance and institutions and actors will work together. Jamaica's "Vision 2030 Jamaica: A National Development Plan", centered on sustainable natural resource management, climate resilient planning processes and policies, and disaster risk management, is another example of how a cross-sectoral medium-term vision can ensure that the climate agenda thrives even after changes in political parties (Planning Institute of Jamaica, 2009).

In the case of Mexico, the General Climate Change Law has kept climate change on every administration's agenda. The General Law on Climate Change approved in June 2012 at the end of one presidential cycle mandated specific targets and climate commitments that ensured actions take place. Therefore, although some of the main governance structures, such as the Intersecretarial Commission on Climate Change (CICC), remained active, meeting at least twice a year for specific issues and through specific Working Groups such as the Working Group on Adaptation Policies (GT-ADAPT) has achieved the consolidation of a vision and common knowledge of the members of 15 Secretaries of State and several of their decentralized and decentralized agencies, who in turn have integrated the vision of each dependency in the commitments of reducing vulnerability to climate change such as the NDC and mainstreaming the adaptation approach in sectoral commitments. . In particular, and according to one of the experts interviewed, it is crucial for the continuity of these processes to document and maintain the communication of the people involved, keeping contact information, lists of attendees and following up on the decisions that are made. they take and their justification. This documentation can help overcome changes in presidents, ministry directors, and staff turnover.

In Costa Rica, the National Planning Ministry (MIDEPLAN) centralizes long-term strategic planning efforts via a dedicated branch, which heavily involves other ministries and

stakeholder participation in planning discussions and seeks alignment with other plans and programs by fitting under a common vision. The National Strategy, with a view to 2050, for example, is strongly aligned with the National Decarbonization Plan and to a lesser extent (due to limited access to information) with the National Adaptation Policy, and interlinks with other national priorities like conservation, growing the economy and the SDGs. It touches upon all sectors. Notably, the National Strategy recognizes that progress across the country has been historically uneven and concentrated in the capital area and seeks to close these gaps in social equality by promoting a decentralized, region-tailored approach (MIDEPLAN, 2021). MIDEPLAN ensures a high-level figure leads the political dialogue to clarify and support the national vision (Expert interview, 2021).

Advancing further toward greater integration of adaptation and LTS involves a series of operational issues. Methods to support this integration include: 1) linking the concept of mitigation and adaptation synergies to the climate mainstreaming agenda at the policy level, 2) using the "demand pull" potential of climate finance, whereby the public-good value of mitigation and adaptation integration can be estimated and results-based awards for achieving integration can be offered, and 3) applying "whole of government" approaches that synergize with the SDGs, particularly SDG 13 and its relationship with longer term planning (Anderson, n.d.).

4.2. Strong and Agile Institutional Coordination to Strengthen Adaptation Planning Processes

The governance and institutional coordination structures for long-term resilience planning vary from country to country. These structures may take the form of an inter-ministerial committee and working groups (e.g., Mexico), a core team of adaptation staff in a relatively small unit, existing departments that take a leading role in long-term adaptation planning (e.g. Colombia's National Planning Department), or another form. It is essential that these groups be able to communicate transversally and flexibly with other ministries and sectors, and work at the national and subnational levels. Flexibility is a characteristic of the most effective institutions; dialogue can be slow and difficult when institutions are slow to change and very formal (Expert Interview from Costa Rica, 2021).

Colombia's National Climate Change System (SISCLIMA)'s Regional Climate Change Nodes—nine around the country—foster peer learning at the local level and coordinate inter-sectoral and inter-institutional climate planning and action between the national and territorial levels (Cruz and Ospina, 2019). Managed by the Ministry of Environment and Sustainable Development's (MADS)

Regional Environmental Authorities, the Regional Nodes are particularly valuable in filling information gaps and disseminating national-level guidelines and policies by convening meetings with actors from different levels (Gonzales Niño, 2019). A co-benefit of the nodes is the creation of a community of practice on adaptation that involves a broader range of experts in shaping the agenda (Expert Interview, 2021). Similar to Colombia, Costa Rica also takes a regional participatory approach to help define country priorities and addresses the intersectoral nature of adaptation planning for its National Adaptation Policy via the creation of thematic groups spanning agriculture, livestock and fishing; biodiversity; infrastructure; water resources; health; and tourism (NAP, 2018). After this exercise, it should be noted that between 2020-2021 processes were carried out to identify adaptation priorities in each of the country's six socioeconomic regions within the framework of the COREDES (Regional Development Committees). The results/priorities that emerged from these regional planning processes were incorporated into the development process of the National Adaptation Plan, which was also fed by thematic sectoral consultations, similar to those that were held in 2018 to develop the policy (See annexes of the national adaptation plan for more details on these consultation processes of a regional and sectoral nature).

In Uruguay, the Ministry of Environment houses various technical directorates linked to adaptation and collaborates within the National Climate Change and Variability Response Coordination Group (SNRCC) across government entities. Instead of competing against larger and better funded Ministries for funds, they play a more consultative role with other Ministries' staff whose work pertains to climate change (Expert interview, 2021). Uruguayan NAPs have successfully built transversal groups and held very consultative sessions with stakeholders. Its Cities NAP has reached nearly every city mayor in the country and has been able to transform implementation into very concrete actions. Thanks to the strength of their institutions, Uruguay can plan long-term despite limited resources.

Universities and academia, especially domestic universities, often also work closely with national governments to develop the necessary climate risk information and knowledge. In Barbados, for example, considerable progress in climate science has allowed for an assessment of the country's climate vulnerability by modeling climate scenarios for the next 50 to 100 years. Climate projections for 2039, 2050 and 2080 were developed based on research by Oxford University and the University of the West Indies using regional and global climate models, as defined by the IPCC (Government of Barbados, 2018). Uruguay's collaboration with academic institutions to produce and share models on sea level rise and map risks with coastal engineers is a strong example of effective engagement highlighted by workshop participants. Domestic and international universities have also played a key role developing climate projections and indicators in Jamaica. A prime example is the Climate Studies Group at Mona, formed in 1994 within the University of the West Indies. Physicists in the group have conducted essential climate and geophysical research, including climate projection scenarios and indicators, that is then used by the government. Another example is the alliance with Oxford University, which is leading the systemic risk assessment and investment prioritization tool work in Jamaica, as part of the global Coalition for Climate Resilient Investment. Having a strong technical base that taps into its national university system has therefore worked well for Jamaica. When developing programs, Jamaica struggles less to gather evidence to support its positions; now the country is aiming to integrate databases into a central database for processes like the NDC and National Communication which should further centralize technical knowledge (Expert Interview, 2021).

4.3. External Support to Build In-country Capacity, Generate Country-relevant Climate Information, and Finance Adaptation Programs

LAC countries are receiving critical support from multilateral banks and climate funds, international NGOs, multi-partner initiatives, the UN and foreign government agencies to advance long-term adaptation planning efforts. However, access to finance continues to be signaled as one of the key barriers for long-term planning and there is a visible reliance on international finance in long-term climate action planning exercises. Furthermore, physical and transitional risks are expected to significantly impact economic activity, and public finances. The implications of climate change for macrofinancial stability and sovereign risk are likely to increase the climate and financial vulnerability of developing countries. Recent studies on the impact of an RCP 8.5 (business as usual) scenario on sovereign

ratings would impact all countries: it is "estimated that as rating cuts usually increase countries' borrowing costs in international markets; the climate-induced downgrades would add $137–$205 billion to countries' annual debt service payments by 2100" (Cevik and Jalles 2020; Klusak et al. 2021). Table 8 below shows the external actors providing adaptation planning support most frequently referenced by the eight countries featured in this report.

Some examples featured in the workshops and interviews held, include the following:

- GCF and UNDP are providing adaptation planning support in Uruguay to facilitate the integration of adaptation activities outlined in the NAP Cities into new and existing policies and programs (GCF, 2018).

- A new source of funding much requested by LAC country heads of state of the intergovernmental Community of Latin American and Caribbean States (CELAC) is the creation of a regional disaster response fund to confront climate impacts. The CELAC forum – comprising 33 countries – approved the creation of such a fund in 2020 and, in September 2021, secured an initial US$15 million (Bloomberg Línea, 2021).

- In Jamaica, IDB supported the creation of downscaled climate information with funds from the Climate Investment Funds' Pilot Program for Climate Resilience (PPCR) managed by the World Bank. The information was then used in reports on the State of the Jamaican Climate, which looks at projected climate change impacts' effects on the economy so they can be integrated into development policies and planning (Expert interview, 2021).

- In Colombia, the IDB, with AFD (2050 Facility) and Expertise France, has informed the development of the LTS with a study of climate risks and adaptation options. This effort will continue with Pilot Program for Climate Resilience PPCR funds and will evaluate more granular adaptation pathways at the municipal level.

- Similar work with PPCR funds will be done in Peru and will support the implementation of the LTS and NAP.

- IDB also contributed to the development of the LTS for Chile, particularly the chapter on water. The work led to a second phase of work that will identify adaptation pathways at the watershed level in Chile and will inform the NAP in water resources under elaboration.

- In its updated NDC, Mexico notes the importance of having the support of international cooperation agencies to share best practices and experiences to integrate the information within the national context, through capacity-building, knowledge and technological transfer

[4] https://www.climateinvestmentfunds.org/topics/climate-resilience

Table 8: Many external actors are heavily engaged in support long-term adaptation planning processes in LAC, according to country documents and interviewees

Multilateral Banks, and Climate Funds	IDB, Adaptation Fund, GCF, CIF, GEF, World Bank, the Climate Investment Funds
NGOs and Research Institutes	CCAFS, Nature Conservancy, Conservation International, WWF, WRI
Multi-partner Initiatives	NAP Global Network, Climate and Clean Air Coalition, Caribbean Community Climate Change Centre (CCCC)
UN	FAO, UNDP, UNICEF, UNEP
Foreign Government Agencies	AFD, GIZ, USAID, Australian Government Overseas Aid

Note: this list is not exhaustive and focuses on external actors providing support to the eight focus countries in this report (Argentina, Barbados, Colombia, Costa Rica, Guatemala, Jamaica, Mexico and Uruguay).

A vital enabling condition for international funds to support planning exercises is the ability of international funding projects to survive changes in political administrations. Such qualities are present in Jamaica and Colombia which have shown the ability of long-term climate planning to continue to operate and receive funding independent of changes in political administrations (Expert interviews, 2021). A legacy of the IMF's presence in Jamaica is that public investment programs require the involvement and incorporation of the Ministry of Finance and the Public Service from the very start of the planning process for financing to be approved. This facilitates the prioritized allocation of scarce resources. The Ministry is therefore familiarized with the issues and, once approved, implementation can go ahead more smoothly. This steady consistency contrasts most countries' adaptation process, which generally first design programs and then seek approval for their financing.

IDB and AFD Support for LTAP and LTS Processes

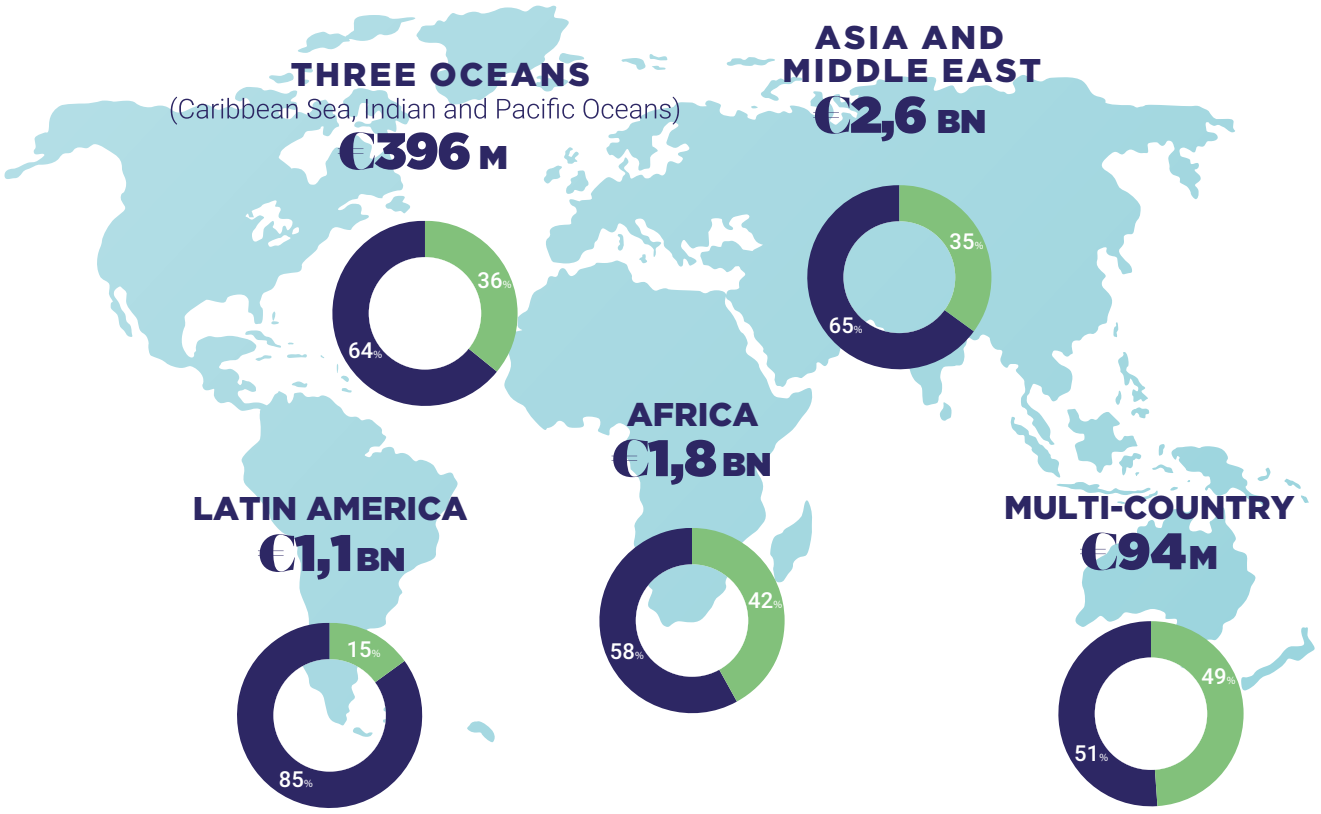
IDB is supporting countries' develop updated NDCs and start LTS by assisting with (i) understanding the impacts and risks of climate change in different socioeconomic sectors and priority development areas; (ii) developing robust adaptation pathways, in consideration of climate impacts and risks, with identification of adaptation tilting points; and (iii) understanding institutional and cross-sectoral arrangements required to monitor, analyze, and adjust potential pathways (adaptive capacity). On the implementation side, the IDB supports countries with a framework to develop Finance Strategies and Investment plans, which includes not only the definition of pipeline of projects and roadmaps for delivery, but the development of methodologies and frameworks to systematically inform the use of public finance and support to countries to align the financial sector with the Paris Agreement goals.

The AFD is providing various climate-vulnerable countries with technical assistance and capacity-building support. Through technical cooperation and capacity-building activities, 2050 Facility provides an opportunity for governments to forecast the budgetary and financial costs of their initiatives and to identify the policy reforms and priority investments required to build toward a resilient, low-carbon future. Another key tool for this support is AdaptAction. Since 2017, the programme supports 15 countries and regional organizations. Through technical assistance and capacity-building activities, AdaptAction helps countries make sure that climate-change adaptation is better integrated in their governance tools, public policies and investments. The leverage effects of AdaptAction on projects funded or co-funded by AFD (eg. with GCF or the UE) is currently estimated at 595 million euros. Endowed with an additional 15 million euro budget for 4 years (2022-2024), the second phase is aimed at strengthening people and ecosystem's resilience of 12 partner Countries in Africa through 3 pillars: understand (research), plan (governance and public policies), invest (vulnerability and feasibility studies) (AFD, n.d.).

AFD Group Climate Commitments

Our Climate Activity in 2021

Breakdown by Region



€6 BN

committed by AFD Group to fight climate change and its effects, including €2 BN for adaptation. Of that total, €5.8 BN was directed to developing countries and €234 M to Overseas France.

In 2021, 330 projects were financed, an increase of 128 over the year 2020.

- Adaptation projects (including NGO projects and public-policy loans)
- Attenuation projects (including NGO projects and public-policy loans)

AFD Group's climate commitments in developing countries and in Overseas France saw a decrease in 2020 linked to the impacts of the health crisis, but they went up by 15% in 2021. With €6 billion in climate finance including €2 billion for adaptation, we met our objectives.

4.4. Broad and Meaningful Participation of Civil Society and Local actors in Planning Processes, Starting from the Design Stage

An important trend emerging from this research is the desire from countries for more inclusive and meaningful participation of civil society. Certain countries are taking special measures to promote equitable outcomes by better including citizens, in particular marginalized groups.

Typical Public Participation Spheres in Climate Action Planning

Participation mechanisms vary in their degree of openness depending on the authorities' preferences and level of conflict in the topics at stake. Involvement of civil society in planning processes not only helps build efficient policies but also provides political support during its implementation. Aguilar et al. (2021) suggest dividing the participation mechanism into three typical spheres to be contacted throughout the steps of a climate action planning process.

1. A first sphere of key stakeholders with specific knowledge on issues necessary to adequately dimension climate action, and those with "veto power", political weight or high-level advocacy whose support is key to ensure effective implementation of a measure. This sphere should participate actively in the design of climate action measures and activities.

2. A sphere of relevant actors whose contribution and validation is important for the plan as a whole. This group includes a broader spectrum of actors as, for example, the advisory council on climate change (if such a body exists), workers' associations, environmental NGOs and neighborhood associations or heads of communes and youth associations. This sphere should participate and validate the results of each stage of the planning process.

3. A sphere of general civil society, a non-specialist public whose support is needed for the implementation of the plan as a whole. This sphere is usually consulted at the end of the planning process and is the main target of the plan's communication strategy.

Source: Aguilar et al. (2021)

Involvement of civil society, including academia, enables more detailed identification of needs and priorities across a country, and ensures representation of groups highly vulnerable to climate change. Meaningfully involving local stakeholders who are or will be impacted by climate change results in more robust design of adaptation plans and greater societal buy-in and can also provide greater authenticity to national long-term strategies and agendas (Mfitumukiza et al., 2020). Several of the countries studied for this report (e.g., Costa Rica, Colombia, Mexico and Chile) are making significant and comprehensive efforts towards inclusion that go beyond traditional public consultations (such as posting drafts of NDCs online to gather public comments) and instead using, for example, scenario-based planning workshops to more meaningfully understand and integrate diverse perspectives. The State of the Jamaican Climate (2012, 2015 and 2019) all have a summary for policy makers which presents climate scenarios and impacts in much simpler language than the full report.

The COVID-19 pandemic has played a role in shifting meetings from in-person towards virtual formats, inadvertently leading to an increase in participation and inclusivity – especially of climate vulnerable groups. To design and inform its 2050 Territorial Strategy, Costa Rica engaged with a broad spectrum of stakeholders by means of virtual events, which helped decentralize planning processes and resulted in greater civil society and private sector participation. The government facilitated virtual engagement by providing pre-paid access to internet connectivity so more civil society and Indigenous territory representatives could participate. It also leveraged regional committees that already met once a month. Colombia had a similar experience due to the pandemic; for example, the switch to virtual events of its agroecological groups decentralized the process and enabled greater civil society participation.

4.5. Opportunities for shared learning across the region

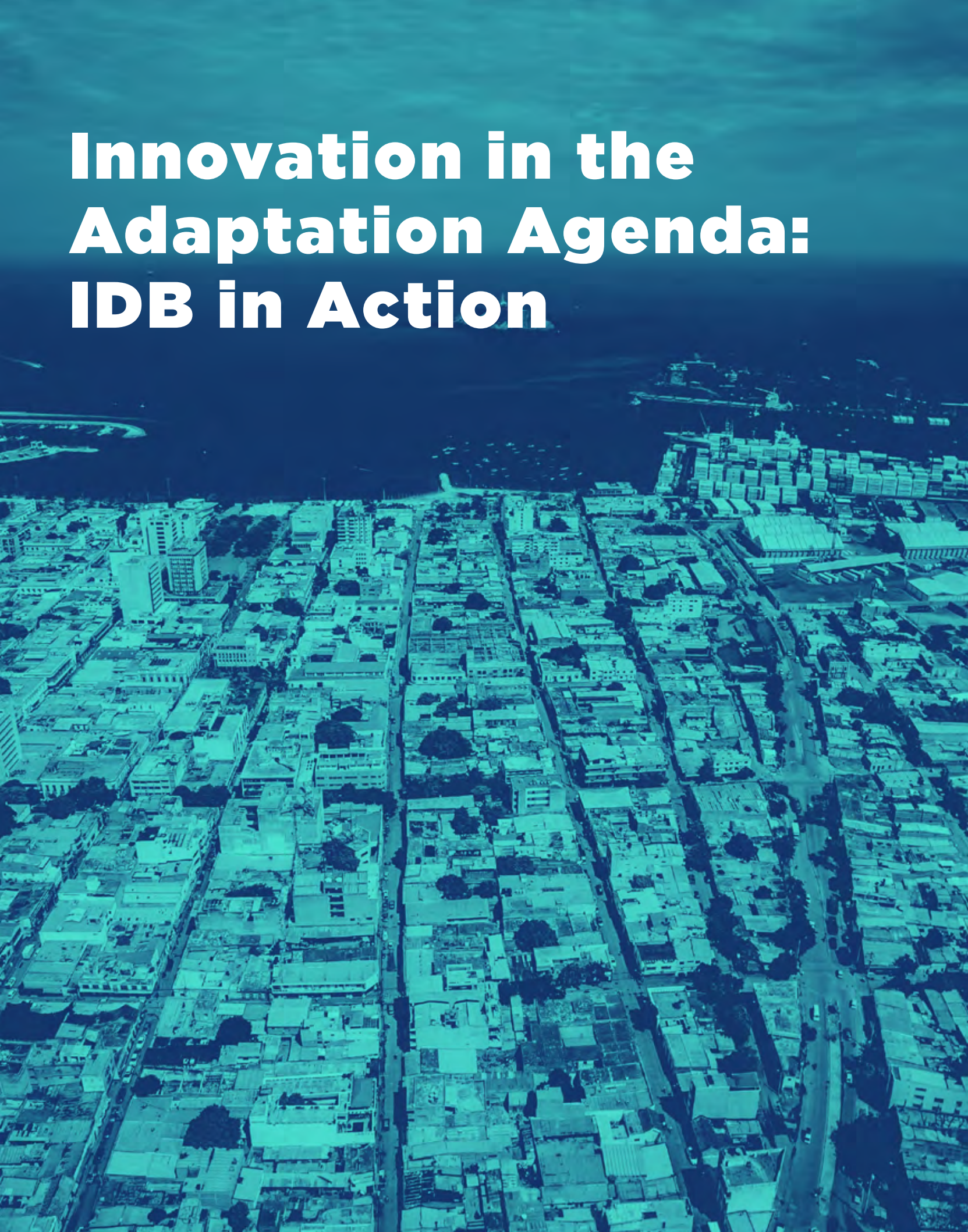
Workshop participants affirm that countries which have already developed long-term climate strategies are valuable resources for others that are beginning to articulate or develop their own; this expertise could be tapped through the exchange of knowledge, tools and best practices. Three participants identified improved knowledge management at the national and regional level as necessary to advance these efforts, suggesting permanent national and regional dialogues as a potential methodology.

Relatedly, utilizing climate change models and scenarios to project future changes and better understand their associated risks and vulnerabilities were noted as most useful by workshop attendees, and a few participants noted their particular value at the local or watershed levels. A local climate vulnerability atlas is one such tool that was specifically mentioned during this discussion.

Other useful tools mentioned include policy documents such as NAPs and NDCs, decarbonization routes, and a disaster and risk atlas. For example, Jamaica with funding from the GEF is aiming to strengthen its transparency framework through the design and implementation of a fully functional and harmonized domestic monitoring, reporting and verification (MRV) system for the effective implementation of the country's NDC and other transparency-related activities.

An important finding from this research is the need for more Spanish-speaking experts and Spanish-facing resources, since many of these are in English which often imposes an insurmountable language barrier.

Innovation in the Adaptation Agenda: IDB in Action



Disaster and Climate Change Risk Assessment (DCCRA) Methodology

The IDB is committed to assessing disaster and climate change risk and identifying opportunities for resilience and adaptation measures in the projects it finances. Our Disaster and Climate Change Risk Assessment (DCCRA) methodology takes a phased approach that allocates resources commensurate with project risk. The methodology is organized around five steps: (1) screen for hazard exposure, (2) complement hazard screening with criticality and vulnerability criteria, (3) complete a simplified qualitative analysis (narrative), (4) conduct a qualitative analysis if needed, and (5) conduct a quantitative analysis if needed.

All investment loans, investment grants, and investment guarantees, including co-financed operations and associated facilities are screened for disaster and CC risk (steps 1 and 2), as part of the Bank's Environmental and Social Due Diligence to report the Disaster and Climate Change Risk Classification. Operations are classified in any of the following categories: High, Moderate or Low Disaster Risk. Operations classified as High or Moderate risk must prepare a simplified qualitative risk assessment (step 3) which defines if further analysis (step 4 or 5) are needed to measure and mitigate disaster and climate change risks and the key points to address in the respective Disaster Risk Management Plan (DRMP) required to all operations classified as Moderate and High risk. We have committed to reporting annually on projects with considerable disaster and climate change risk that applied risk analysis to identify resilience actions in our Corporate Results Framework. Our target by 2023 is for 100% of high- and moderate-risk projects to have completed Step 3 of the DCCRA methodology (the disaster and CC risk narrative).

The Bank's Disaster Risk Management team has also developed and applied the Index of Governance and Public Policy in Disaster Risk Management (iGOPP), which has allowed to identify good practices for appropriate disaster risk management governance based on the 241 indicators that constitutes the Index.

The Hurricane Clause

Given the frequency and destruction caused by these extreme weather events, Caribbean countries have been demanding climate-resilient debt instruments and other innovative means to build financial resilience. The IDB has introduced for this purpose the hurricane clause which also considers similar disaster-linked clauses in their loan agreements.

The hurricane clause is designed to provide cash flow relief at the crucial period after a natural disaster event, when financing needs are high and new sources of funding are limited. By embedding "hurricane-linked clauses" in debt contracts, countries can tap into extended maturity periods in the event of a natural disaster. As part of IDB loans, a country hit by a predefined disaster can chose to defer principal payments for two years. In the region, Barbados has recently included this clause in its loans.

Climate-resilience Metrics

The IDB worked on a conceptual framework to seize climate resilience opportunities in development projects by presenting definitions and examples for climate resilience elements and capacities as a basis for a conceptual climate resilience metrics framework and guide sectorial specialists in identifying output and outcome indicators to monitor climate resilience results at the project level and to later evaluate the effectiveness of implemented adaptation and climate resilience activities. More information can be found here "Identification of Climate Resilience Opportunities and Metrics in Financing Operations: A Technical Reference Document for IDB Project Teams".

Building Adaptive Capacity

One of the key areas in the work on adaptation is helping national and sub-national entities building transformative adaptive capacity at the institutional level. Given that impacts of climate change will be primarily felt through water, a study was conducted with the University of Geneve to fine-tune an existing conceptual framework to measure adaptive capacity in the water sector. The study uses three key determinants, namely regime, knowledge, and networks- for which the assessment framework establishes several indicators that can be measured in accordance with operational criteria. The methodology was previously used both in Switzerland and Chile and then adjusted to be used in Bolivia in the context of a CIF-cofinanced water project in the metropolitan region of La Paz- El Alto. More information can be found here "Building Transformative Institutional Adaptive Capacity: Assessing The Potential Contribution of PPCR to Build a Climate Resilient Water Governance Framework in The Plurinational State of Bolivia".

At the Specific Project Level

Ecosystem-based Approach to Adaptation (EbA)-High Mountain Ecosystems (Colombia)

High-mountain ecosystems- in particular, moorlands, are key for catching, storing, and regulating water resources. Andean metropolitan areas in the high mountain, such as the one around Bogota, depend on this water for day-to-day activities and changes to its availability or quality will hinder productivity and economic growth. Poor communities living at the margin of these metropolitan areas are the most vulnerable to these changes exacerbated by climate change. Specific knowledge about the extension and nature of climate change impacts to the services these ecosystems provide is limited. To that aim, together with the Minsitry of Environment and Planning and Conservation International, IDB implemented a project aimed at strengthening the hydrological buffering and regulation capacity of the upper watershed of Chingaza–Sumapaz–Guerrero, which supplies drinking water to the Bogota metropolitan area and its

adjoining rural municipalities. The proposed GEF-funded intervention demonstrated how to incorporate climate change considerations into watershed planning and management programs associated with high mountain ecosystems.

More Information can be found here "Adaptacion al cambio climatico en alta montaña colombiana: Chingaza-Sumapaz-Guerrero".

An Integrated Approach to Adaptation of Fisheries and Marine-coastal Ecosystems (Peru)

Oceans are not only the largest world's carbon sinks but the holders of a rich biodiversity and income source for many coastal communities around the globe. Changes to its temperature and chemical composition could affect the temporal and geographical distribution of its hydro-biological resources- which at the end will cripple the livelihoods of already marginalized poor coastal communities. The Humboldt current in the Pacific Ocean with its cold waters, has been providing for several hundreds of years abundant micro-nutrients to marine species producing herewith some of the most successful commercial fisheries of the world. Major catches include for example, sardines, anchovies, mackerel, hake and squid, among others. Limited knowledge on how a warmer and CO2-richer Ocean impact seasonal availability of fish will have serious implications for timely decision making and resource planning processes. To close this gap, IDB together with the Adaptation Fund co-financed an integrated program to help Peru adapt its fishing sector and reduce the vulnerability of coastal communities to anticipated impacts of climate change.

More Information can be found here "Avances del Perú en la adaptación al cambio climático del sector pesquero y del ecosistema marino-costero".

5

Proposal for the Development of an Intervention Framework

Based on the research conducted for this report, this section outlines a possible intervention framework to further support LAC countries as they design, develop and enact their LTAP processes and strategies. This framework aligns with the barriers and best practices identified, as well as with the recommendations outlined in the next section (**see Table 9**).

Recognizing that climate change impacts do not respect national boundaries, the majority of workshop participants reacted positively to the idea of a coordinated regional response to confront long-term problems while acknowledging that nuances exist between these diverse countries and between national and local levels. The exchange of knowledge and tools within the LAC region and a regional adaptation fund were each identified as key elements to a successful regional strategy. Both of these mechanisms could be included for consideration in a possible intervention framework. Additionally, regionally coordinated implementation adaptation strategies were highlighted as a key element, for which transnational coordination within the Orinoco and Plata River Basins were identified as constructive examples.

Table 9: Barriers, Good Practices and a Proposed Intervention Framework

	Barrier	Good Practices	Proposed Intervention Framework
	A need for development and adherence to a long-term resilience **vision** and for improved policy alignment.	High-level political buy-in and alignment of adaptation to long-term national priorities and policies to support continuity of adaptation agendas.	**A high-level political meeting to recognize progress achieved within the framework of meetings, regional policy dialogues and country technical assistance thus far.**
	More cross-sectoral **coordination** needed.	Strong and agile inter-institutional coordination to strengthen adaptation planning processes.	**Dedicated in-country technical assistance to countries and in-depth support to strengthen adaptive capacities.**
	Finance continues to be a major barrier.	External support to build capacity and access finance. Continuous and dedicated international finance.	**Develop investment plans and finance strategies.**
	A need to continue widening inclusive and meaningful public **participation** efforts.	Broad and meaningful participation of civil society and local actors in planning processes, starting from the design stage.	**Provide financial and technological resources to facilitate virtual formats to increase inclusion and participation. Develop guidance materials, in Spanish.**
	Lack of, or limited availability of **information** and tools.	Opportunities for shared learning across the region.	**High level political meeting to kick off the launch of a regional peer-exchange initiative.** **A dedicated virtual space for LAC regional peer exchanges.** **Training workshop series on the five factors in the intervention framework and other high priority topics identified in the research process.**

The process for implementing the intervention framework could include:

- **A high-level political meeting to recognize progress achieved within the framework of meetings, regional policy dialogues and country technical assistance thus far**, along with an official hand-over of the leadership of the Regional Platform or Community of Practice to encourage South-South group ownership of the initiative.

- **Dedicated in-country technical assistance to countries and in-depth support to strengthen adaptive capacities.**

  - Facilitate and improve access to climate information and assist countries to improve their baseline information to understand vulnerability, develop climate change scenarios and models, and design adaptation pathways. To the extent possible, local actors should be meaningfully involved in adaptation planning, implementation and monitoring of activities that will directly impact them.

  - Support to increase the country-by-country evidence base of the benefits of adaptation measures.

  - Co-develop institutional analyses to identify opportunities to enhance alignment of climate-relevant policy frameworks, laws, regulations, and programs and to improve institutional coordination between planners and implementers, and across institutions and vertically (between national and subnational levels).

- **Develop investment plans and finance strategies** for public institutions to attract, incentivize and involve the private sector. Develop a multidimensional vulnerability index (MVI) to be used as a replacement to GDP in determining development status to access concessional climate funding.

- **Provide financial and technological resources to facilitate virtual formats** to increase inclusion and participation.

- **Develop guidance materials, in Spanish**, on the five intervention framework factors, and eventually other priority topics such as how to engage the private sector and estimating costs of adaptation activities. IDB, AFD and others could structure the process of developing these materials to consider, for example, whether and how to develop a user-friendly cost-estimation tool, and also to identify teams of experts to guide countries' efforts. It is important to gather and centralize existing guidance and tools in Spanish for use as reference and training materials and translate useful materials that generally exist only in English into Spanish. Additionally, multilateral institutions can hire or train Spanish-speaking advisors with expertise in long-term adaptation planning processes to serve as a resource for government officials. Spanish interpreters and translators for workshops, live international events, and other processes would also help surmount language barriers.

- **A high-level political meeting** to kick off the launch of a regional peer-exchange initiative and the process of channeling finance and technical assistance to LAC countries, to support their development of long-term adaptation plans.

- Create and nurture a **dedicated virtual space for LAC regional peer exchanges, such as a regional platform or community of practice with regular meetings to share experiences, knowledge, and conduct peer-review of plans. Countries would be encouraged** to share best practices on topics such as how to promote high-level buy-in and policy alignment of adaptation with long-term national priorities; how to attract external support to build in-country capacity and generate country-relevant climate information; and how to ensure dedicated and continuous adaptation finance. Additionally, through this forum countries could exchange insights on how to foster strong and nimble communication and collaboration across ministries as well as on how to achieve greater and more inclusive stakeholder participation. Such a space could be linked to or joined with existing regional efforts, such as CELAC, AILAC and the Caribbean Community (CARICOM).

  - Meet bimonthly or quarterly with country or multilateral institution representatives as co-chairs.

  - Devise country pairs to advise and provide feedback on each other's plans as they are being designed and improved.

- **Hold training workshop series on the five factors in the intervention framework and other high priority topics identified in the research process**. AILAC members had one long-term climate planning

workshop last year; there was high interest in this topic and learning more but it was not repeated or followed up since AILAC only holds one workshop annually and the topics change. To choose the high priority topics beyond the five intervention factors, one could conduct a survey with a list of perhaps 10 topics and have stakeholders rank them, then address them in that order. Countries that are making good progress (for example, harnessing the five enabling factors highlighted in Section VI) could share their experiences with those countries that still have gaps. Illustrative examples of topics raised in country documents, expert interviews and workshop discussions include:

- How to develop transversal adaptation indicators (with relevant examples explaining how Northern countries are doing this);
- How to develop local adaptation plans;
- Hands-on technical assistance on interpreting climate information and models;
- Guidance on how to speak with and involve the private sector. Have countries that are more advanced present and share their methodology with countries that are just beginning.

6

Conclusions and Recommendations

The following recommendations and conclusions address the barriers, best practices and proposed intervention framework, in the wider context of planning exercises in the region. Based on the analysis and findings of this report, recommended lines of action can be categorized into four types: institutional; monitoring, reporting and verification (MRV) and data; implementation: finance and the private sector; and a proposed regional platform (**Table 10**).

Table 10: Recommendations in light of Barriers, Good Practices and the Proposed Intervention Framework.

	Barrier	Good Practices	Proposed Intervention Framework	Recommendations
Vision	A need for development and adherence to a long-term resilience vision and for improved policy alignment.	High-level political buy-in and alignment of adaptation to long-term national priorities and policies to support continuity of adaptation agendas.	A high-level political meeting to recognize progress achieved within the framework of meetings, regional policy dialogues and country technical assistance thus far.	**From planning to action. Tangibly align climate-relevant policy frameworks and laws to better leverage the synergies between climate adaptation action and national priorities**
Coordination	More cross-sectoral coordination needed.	Strong and agile inter-institutional coordination to strengthen adaptation planning processes.	Dedicated in-country technical assistance to countries and in-depth support to strengthen adaptive capacities.	**Improve institutional coordination between planners and implementers, and across institutions. Wherever possible, increase the agility of public institutions so they are able to more easily work across sectors and plan for and implement much-needed adaptation measures.**
Finance	Finance continues to be a major barrier.	External support to build capacity and access finance. Continuous and dedicated international finance.	Develop investment plans and finance strategies.	**Develop guidance on how to incentivize and involve the private sector to unlock larger adaptation investments and innovation for long-term planning.**
Participation	A need to continue widening inclusive and meaningful public participation efforts.	Broad and meaningful participation of civil society and local actors in planning processes, starting from the design stage.	Provide financial and technological resources to facilitate virtual formats to increase inclusion and participation. Develop guidance materials, in Spanish.	**Develop guidance in Spanish on step-by-step mechanisms and best practices from the region on how to involve stakeholders and the wider civil society in planning exercises to ensure public support and continuity of strategic climate action plans.**
Information	Lack of, or limited availability of information and tools.	Opportunities for shared learning across the region.	High level political meeting to kick off the launch of a regional peer-exchange initiative. A dedicated virtual space for LAC regional peer exchanges. Training workshop series on the five factors in the intervention framework and other high priority topics identified in the research process.	**MRV. Gather, monitor and share evidence of adaptation benefits to generate greater support for adaptation commitments and action.** **Data. Create easy-to-use, sector-specific guides and tools in both Spanish and English for ministry officials on how to plan beyond short-term impacts and how to estimate longer-term adaptation costs.** **Create more frequent opportunities, including virtual, for LAC countries to share their experiences and learn from each other.**

6.1. Institutional Lines of Action

- **From planning to action. Tangibly align climate-relevant policy frameworks and laws to better leverage the synergies between climate adaptation action and national priorities and align these agendas to foster continuity of adaptation over the decades to come despite changes in government administrations.**

  Countries in the region have established climate change laws and may mandate that adaptation planning take place, yet they focus on short- and medium-planning horizons without considering longer-term horizons to 2050 or beyond. On average, LAC countries are planning with a view to 2035, which provides an insufficient vision of future climate change impacts and scenarios to ensure that investments stand the test of time. It is necessary to expand these planning time horizons, as well as to ensure articulation with disaster risk mitigation and management, and with existing strategies related to biodiversity conservation and the SDGs. In the long term, synergies between themes should be a priority to avoid potential conflicts and lead to maladaptation. In this regard, the enhanced institutional arrangements currently being put in place, as well as engagement processes for political, territorial and key actor participation, should contribute to the future development of LTS including its adaptation components.

- **Coordination. Improve institutional coordination between planners and implementers, and across institutions. Establish strong communication channels and dialogue between programs and activities across sectors to better and more permanently integrate climate considerations, as well as vertical integration to ensure local impact.**

  The need for mechanisms for institutional coordination that unify and synchronize various planning efforts between agencies was cited by multiple country experts and in country documents. Even for countries like Colombia, which is widely lauded for its information coordination system, multiple experts cited a need for a better unifying instrument. It is important to seize the synergies with institutions that already focus on climate change as well as those not traditionally involved in planning to adapt to climate impacts – such as health ministries, social or welfare-centered programs and ministries, transportation and external affairs – to better integrate agendas and coordinate resources and information.

  Involving implementation actors in the design of actions and indicators will increase buy-in, resulting in medium and long-term visions that are more robust and implementable. For example, in Costa Rica the Ministry of

Transportation and the National Emergencies Committee has a dialogue on how to incorporate estimates of extreme events into the design of transportation projects, so that investments made today will endure over time (Expert interview, 2021).

→ **Collaboration. Wherever possible, increase the agility of public institutions so they are able to more easily work across sectors and plan for and implement much-needed adaptation measures.**

Many public institutions have a strongly embedded culture that emphasizes constancy, formality, and caution. These traits can complicate dialogue and stall planning processes, even to the extent of making their eventual implementation obsolete. Helping institutions become more dynamic and agile, for example by simplifying procedures and opening direct and regular communication channels between specialists, can enhance collaboration and the timeliness of on-the-ground actions.

Depending on a country's institutional structure and processes at the national and subnational level, and political circumstances at a given time, integration of climate action may not always be the most feasible or effective option. Therefore, openness and innovation in terms of how climate action is planned for – whether separate from development instruments as its own strategy, or integrated into them, or in a different form – can also facilitate adaptation planning and increase adoption. An example of this are the many municipalities in Costa Rica who are using action plans to map entry points for adaptation in existing programs, projects, and instruments. In relation, promoting non regrets actions can be crucial: according to UN-Habitat (2015) this type of adaptation actions improve adaptive capacity regardless of climate change. This way, they contribute to development goals (e.g., improved storm sewers and sanitation, water supply improvements) that a city may already have identified as important (UN-Habitat, 2014; Aguilar et al., 2021).

6.2. Monitoring, Reporting and Verification (MRV) and Data

→ **MRV. Gather, monitor and share evidence of adaptation benefits to generate greater support for adaptation commitments and action. Evidence of concrete progress will encourage longer-term adaptation decisions and investments and encourage action even in the face of future uncertainty.**

Countries have been undertaking climate adaptation measures yet monitoring to document and assess progress is lagging, in large part because countries have limited knowledge and capacities for monitoring, evaluation and learning, and also due to funding and staffing constraints. Colombia, for example, has taken adaptation action for 12 years yet has not collected evidence to demonstrate the effectiveness of these interventions. The authors recommend supporting countries in developing metrics (embedded to regular reporting mechanisms established in legal or policy frameworks) to determine the benefits of adaptation investments, before and after implementation, and building and funding associated capacities.

When starting a monitoring scheme, it is recommended to start with the information that is easier to access and progressively improve the databases. Correspondingly, a good practice is to define indicators that use information that is already being collected in daily government operations or by some other agency with which you have contact (Aguilar et al., 2021b). Metrics can guide the selection of adaptation options and help build the evidence of adaptation benefits over time which can garner support for greater action. Because of this, it is important to incorporate results in the climate action communication strategies.

- **Data. Create easy-to-use, sector-specific guides and tools in both Spanish and English for ministry officials on how to plan beyond short-term impacts and how to estimate longer-term adaptation costs. This includes the development of simple but interactive climate scenario models for decision-making, and the training of associated officials on how to assess adaptation options despite uncertainty.**

Providing countries with long-term information, technical expertise, and broad capacity to employ sophisticated climate tools and models represents a key point of intervention (Patel and Gebreyes, 2020) (Hafezi et al., 2018). Increasing ministries' and other stakeholders' technical knowledge on how to conduct adaptation planning for longer-term horizons is therefore crucial.

Ministry officials and other actors involved in long-term planning would greatly benefit from in-house or externally developed models to identify the most climate threats across time horizons, and to evaluate and prioritize different climate change policies and the effects these could have on the economy and other sectors. These types of models should be easy to use, allowing officials to interact with them and make changes to variables to view various outcomes, and be accompanied by interpretation guides and trainings. IDB has conducted a technical study along these lines that models urgent climate challenges; partial results of the study have been very welcome by government and other technical institutions who would use this information as inputs for long-term planning (Groves et al., 2021). It will be necessary to strike an acceptable balance between granularity and the quality of forecasting, due to the tension between unavailability and quality of data in some locations and inherent uncertainty present in modelling climate and non-climate risks, and the need to make decisions in spite of these gaps. If regional enough, this climate information would be particularly helpful for smaller subnational actors, such as smaller municipalities, who are unable to afford designing their own instruments.

To overcome language barriers, translate new and existing materials and processes into Spanish and train more Spanish-speaking experts in long-term resilience planning processes.

6.3. Implementation: Finance and the Private Sector

→ **Develop guidance on how to incentivize and involve the private sector to unlock larger adaptation investments and innovation for long-term planning.**

Countries are eager to involve the private sector in adaptation planning and implementation yet struggle knowing how to approach it. Government staff are rarely familiar with private sector language and often lack the data needed. Stakeholders recognize the private sector as a critical source of financing and resources, innovation, and technology – and need to have them on board as full partners to confront current and future climate impacts. Creating the right enabling environment and spaces for their input and collaboration is essential. This could include establishing public-private committees or working groups for collaboration and knowledge exchange, for example on aligning public-private agendas and sharing innovative tools and methods, and creating political and financial incentives to attract private sector participation in adaptation planning and implementation.

6.4. Public Participation

→ **Develop guidance in Spanish on step-by-step mechanisms and best practices from the region on how to involve stakeholders and the wider civil society in planning exercises to ensure public support and continuity of strategic climate action plans.**

Countries in Latin America have a history of active participation and interest by civil society, particularly the environmental community in the design and implementation of climate action policy. The needs for enhanced participation and inclusion, including the traditional knowledge of affected communities are, however, growing significantly as climate impacts are observed and suffered by communities in the region, especially those that are farther away from decision making centers or speak other languages.

This demand is likely to continue growing in the years ahead. Thus, a continuous effort to deepen and enhance public participation and communication of climate action strategies, including their translation to native languages, as well as their implementation, must be incorporated into all efforts to design long-term strategies in order to ensure their public acceptability as well as their continuity and support across different government administrations. In this sense, it is essential to develop communication and knowledge appropriation strategies in parallel with the LTAPs to enhance their results.

6.5. Proposed Regional Platform

→ **Create more frequent opportunities, including virtual, for LAC countries to share their experiences and learn from each other. Leverage regional platforms to exchange long-term adaptation planning technical expertise and good practices on how to overcome challenges.**

Countries are very interested in discussing and hearing about their peer's experiences and can be inspired by other countries' progress. Workshop participants stated that a regional platform on adaptation planning would allow for exchanges in tools and knowledge, as well as lessons learned. Identifying and developing transversal (or cross-sectoral) indicators, which countries are currently tackling individually and struggling to develop, is an example of one area that a regional platform could support. To the extent possible, the recommended data line of action –especially on training to utilize climate tools and models – and other lines of action in this report should be embedded into the proposed regional platform.

As evidenced by COVID-19 in Costa Rica and Chile's long-term planning processes, using a virtual format for these peer-to-peer opportunities greatly enhances participation and inclusivity by allowing more stakeholders to connect beyond what is typically possible with in-person events.

Appendix

Appendix I: Detailed country-by-country analysis of long-term adaptation planning process elements

ARGENTINA

Elements of Planning Approach Undertaken

Argentina is working to build an integrated, long-term approach to climate resilience that aligns visions and planning processes for both its LTS and NAP (currently in development by different teams). While a NAP has not yet been articulated, it will involve a regional approach that emphasizes gender and diversity; ecosystem-based adaptation; community-based adaptation and integrated management of disaster risk (MayDS 2020). The sectoral approach of adaptation will be addressed through the Sectoral Plans Capacity-building is heavily emphasized and already underway, including training an adaptation consultant in each of the country's 24 provinces (Expert interview 2021). The country's enhanced NDC highlights priority areas, knowledge and tools gaps for adaptation and its priorities that will be aligned with the LTS (MAyDS 2020). Argentina largely takes an approach that highlights self-sufficiency, inter-ministerial coordination and participation of civil society (Expert interview 2021).

The country's top-down approach to planning is led by the National Climate Change Cabinet, ratified as the national governing body for the definition of the national climate policy by the Law N°27.520 of Minimum Standards of Adaptation and Mitigation to Global Climate Change (Government of Argentina 2019). This Cabinet includes ministry focal points, provincial articulation (COFEMA) and then to wider thematic roundtables that are open to civil society, the private sector, and academia (Government of Argentina 2019). The technical administrative coordination of the Cabinet is carried out by the Secretariat of Climate Change, Sustainable Development and Innovation, with the technical support of the National Directorate of Climate Change, created in 2015. This structure is intended to ensure the mainstreaming of climate change in long-term state policies. It's important to note that the National Climate Change Cabinet is made of several roundtables where adaptation is being mainstreamed. Nevertheless, and especially regarding adaptation, Argentina is implementing a bottom-up process to address the regional approach of the NAP, together with sub-national governments and civil society.

Two sectors that receive much of the government's attention are energy and agriculture, according to its importance in its productive matrix. Other sectoral plans that may involve LTS are currently in revision (Expert interview 2021). With regard to long-term adaptation planning, adaptation staff have a positive collaboration with the Ministry of Health and the Ministry of Women, Genders and Diversity. The team also engages with the transportation, natural resources, mining, livestock and agriculture sectors, among others.

Gaps, Needs, and Challenges

A comprehensive analysis of existing barriers to adaptation implementation for Argentina's Third Biennial Update Report (IBA) highlights financial resources, the transfer of technology, and capacity-building as priority barriers (Republic of Argentina 2020). Financing is a tremendous challenge to long-term adaptation in Argentina, and the country's current macroeconomic situation is making this need greater still. Although political will from the current government to unify and mainstream policies with a climate lens exists, coordination and coherence across ministries, including information sharing, is still limited (Expert interview 2021). Working with different actors has been a challenge because climate risks remain poorly understood.

The Ministry of Environment has limited staff and resources, and there is a noted lack of adaptation experts along the territory (Expert interview 2021). The Ministry of Environment does not wield much power, and as a result, multilateral institutions may opt to partner with other Ministries to oversee projects (i.e., World Bank). Capacity building is needed across sectors--in technology, science, industry--as well as at the local level. The development of and training in technical frameworks was noted as key to enabling progress at the provincial level. Timelines and future planning needs to expand to the middle- and long-term (Expert interview 2021).

Policy Frameworks, Laws, and Regulations

- Decree 891 in 2016 (mandate for the creation of the National Climate Change Cabinet)
- National Plan for Adaptation and Mitigation to Climate Change [Plan Nacional de Adaptación y Mitigación al Cambio Climático], 2019.
- Law N° 27.520 Law N°27.520 of Minimum Standards of Adaptation and Mitigation to Global Climate Change (2019) and its Regulatory Decree N° 1030/2020Inclusive Rural Development Program
- Biannual climate change reports starting in 2014
- National Climate Change Communications to the UNFCCC (1997, 2008 and 2015)

LTS or Equivalent	Argentina is currently developing its long-term strategy for 2050; the initial structure will be presented in November 2021 during COP26.
NAP	A national NAP readiness process is underway (with support from the GCF) and the NAP is expected to launch in 2022.
NDC	Argentina submitted its first NDC in 2016 and its enhanced NDC (which articulates that national approach to adaptation through its Second Adaptation Communication) in December of 2020.
Use of Information and tools	Argentina is interested in creating an international platform for information and process sharing among the region of Central-South America. The country would prefer to develop their own technologies than import methods from other countries (Expert interview 2021). Argentina has less than 50% of the points of observation required for an effective coverage of meteorological observation and information; for this reason, Argentina is seeking resources to develop more stations to improve its climate monitoring capacity (Expert interview 2021). Additionally, climate change research is conducted by institutions affiliated with the National Scientific and Technical Research Center (Republic of Argentina 2015). One interviewee shared that the shift from in-person meetings in Buenos Aires to virtual formats has enabled officials to reach provinces and people that would not otherwise be reached.
Entities Responsible	• The Climate Change Cabinet (el Gabinete Nacional de Cambio Climático) is made up of ministers and secretaries of government overseeing mitigation and adaptation policies. It is presided over by the head of the Cabinet of Ministers (el Gabinete de Ministros) with technical coordination by the secretary of Climate Change, Sustainable Development and Innovation (la Secretaría de Cambio Climático, Desarrollo Sostenible e Innovación) through the DNCC (National Climate Change Directorate). • Ministry of Environment and Sustainable Development (Ministerio de Ambiente y Desarrollo Sostenible) • Federal Environmental Council (Consejo Federal de Medio Ambiente – COFEMA) • The adaptation component of Argentina's Second NDC (7.3.1) identifies the National Climate Change Directorate (Dirección Nacional de Cambio Climático); Secretary of Climate Change, Sustainable Development and Innovation (la Secretaría de Cambio Climático, Desarrollo Sostenible y Innovación); Climate Change Adaptation Coordination (Coordinación de Adaptación al Cambio Climático); External National Adaptation Plan and Climate Mitigation Advisory Counsel (Consejo Asesor Externo del Plan Nacional de Adaptación y Mitigación al Cambio Climático); and Table of Climate Change Focal Points (Mesa de Puntos Focales de Cambio Climático) as constitutive of its strong institutional climate change network (MAyDS 2020).
Other Actors Currently Providing Support (non-exhaustive)	Adaptation Fund; GCF (MAyDS 2020); UNDP; JICA (Republic of Argentina 2015)
Who else Needs to be Involved?	The private sector, particularly to explore tools and financing for adaptation.
Examples of Best Practice; What Works Well and How are Challenges Overcome	Though not adaptation-related, it is believed the RenovAr Program (renewable energies) will remain despite lack of finance (due to macroeconomic instability) because it is a vector to mobilize projects and actions in the country (Expert interview 2021). The Government of Argentina considers its gender-sensitive approach to climate adaptation planning a best practice (MAyDS 2020). After a diagnostic to identify gender inequalities in relevant policies and plans, a work plan to mainstream gender will be developed in consultation with thematic specialists, technical teams and Indigenous community members that includes training on the methodological and institutional link between gender and climate (MAyDS 2020). In addition to this consultation process, all personnel from the National Climate Change Directorate participated in a "Gender and Climate Change" training that focuses on integrating gender into Argentina's NAP development process, as well as into adaptation-specific Monitoring and Evaluation frameworks (MAyDS 2020). Working relationships with the Ministry of Women, Gender and Diversity will be strengthened to define clear lines of collaboration (MAyDS 2020).
New Opportunities	Argentina is working to develop relationships with technical teams from other countries to develop a common strategy and share instruments and best practices for mainstreaming gender in adaptation planning and implementation (MAyDS 2020).

BARBADOS

Elements of Planning Approach Undertaken

The Government of Barbados (Government of Barbados) considers climate change as a threat to its growth and prosperity (Government of Barbados 2018) and views adaptation as imperative to protecting its environment, society and economy (Government of Barbados 2018). As emphasized in the Roofs to Reefs vision, adaptation and climate resilience are Barbados' main priorities, and have been holistically integrated into the development of all government policies (Government of Barbados, 2021). Barbados also aims to be the first 100% green and fossil-free island-state by 2030 (Government of Barbados, 2021). To facilitate a coherent climate-resilient development, the Government of Barbados aligns its national adaptation measures with the Sendai Framework on Disaster Risk Reduction, the Sustainable Development 2030 Agenda and the Paris Agreement. Additionally, the country's Updated First NDC is aligned with other Small Island Developing States (SIDS) and member countries of the Alliance of Small Island States (AOSIS) (Government of Barbados 2021).

Barbados' approach to adaptation focuses on strengthening its absorptive, adaptive and transformative capacities to improve adaptation coherence, efficiency and effectiveness (Government of Barbados 2021). In particular, the Agriculture, Water Resources, Human Health, Coastal Resources and Human Settlement, and Tourism Sectors in Barbados are priority sectors (Government of Barbados 2018). Adaptation strategies are categorized based on their implementation urgency, cost-benefit, type, specifications and lifetimes (Government of Barbados 2018). With this framework, the Government of Barbados has prioritized the following: 1) data collection and research; 2) education and awareness; 3) mainstreaming adaptation into decision-making processes, policy and development plans; 4) integrating management and stakeholder participation in adaptation implementation; and 5) consistent, long-term dynamic tourism brand development (Government of Barbados 2018). In addition to basing adaptation approaches on objective data, the Government of Barbados emphasizes the importance of considering material and behavioral constraints to adaptation, cultural norms, and underlying conditions and structures to foster locally-sensitive and balanced decision-making processes for adaptation (Government of Barbados 2021).

(Government of Barbados 2021).

Gaps, Needs, and Challenges

Finance is a major challenge for adaptation in Barbados due to its ongoing public debt which has been exacerbated by COVID-19, and the private sector's under-investment in adaptation initiatives (Government of Barbados 2021). The Government of Barbados therefore intends to continue engaging with international climate finance mechanisms (Government of Barbados 2018), calling for priority international support for adaptation as a small-island state (Government of Barbados 2021), and will provide sectors with the technical platforms needed to more efficiently use public resources (Government of Barbados 2020).

Insufficient capacities are another challenge. There are limited and insufficient resources and expertise dedicated to specifically address matters related to climate change across Ministries. Many national legislative instruments function along sector or institutional lines and collaborate together yet there is no clear mechanism for inter-institutional coordination nor to mainstream climate considerations into planning processes (Government of Barbados 2020; Expert Interview 2021). The proposed structure to amend the Physical Development Plan has sought to mainstream climate considerations in the physical planning process; this document is expected to be proclaimed in parliament soon (Government of Barbados 2016). Guidance on how to plan for different climate change impacts under different emissions scenarios, data access, and uncertainty are also a key challenge to planning and implementation, and relates to the need for a more effective monitoring, reporting, verification and evaluation system to track adaptation progress and effectiveness (Government of Barbados 2018).

Finally, adaptation at the local level is hindered by the ineffective communication of strategies and key technologies, requiring more education and awareness-raising at the local level (Government of Barbados 2018).

Policy Frameworks, Laws, and Regulations

- National Climate Change Policy Framework (2012).
- Physical Development Plan (2021).
- Roofs 2 Reefs Programme (R2RP).
- Integrated Coastal Zone Management (ICZM): the Barbados Policy Framework (2020-2030).
- Barbados Comprehensive Disaster Management Country Work Program 2019-2023.
- The National Strategic Plan for Barbados: 2006-2025
- National Sustainable Development (NSD) Policy, launched in 2004.

LTS or Closest Equivalent

The National Strategic Plan of Barbados 2006-2025: Global Excellence, Barbadian Traditions, published by the Research and Planning Unit of the Ministry of Economic Affairs and Development in 2007, articulates six strategic goals to achieve "a fully developed society that is prosperous, socially just and globally competitive" (Government of Barbados 2007). Goal four seeks to build a green economy, strengthen Barbados' physical infrastructure and preserve its environment (Government of Barbados 2007).

NAP	Barbados is planning to formulate a NAP; in addition, adaptation planning is incorporated into its NDC, its national Roofs to Reefs program, and included in its Second National Communication to the UNFCCC.
NDC	Barbados submitted its First NDC in 2016 and an Updated First NDC in 2021.
Use of Information and Tools	Considerable progress in climate science has allowed for an assessment of the country's climate vulnerability by modeling climate scenarios for the next 50 to 100 years. Climate projections for 2039, 2050 and 2080 were developed based on research by Oxford University and the University of the West Indies using regional and global climate models, as defined by the IPCC (Government of Barbados 2018).
Entities Responsible	The National Climate Change Committee (NCCC) is chaired by the Ministry of Environment and National Beautification (MENB) and collaborates to ensure that actions aimed at climate change mitigation and adaptation are mainstreamed across all sectors at a national level. It also provides a forum to fashion Barbados' regional and international engagement on climate change matters. The NCCC comprises 11 other government and non-governmental entities; additional entities can be co-opted when deemed appropriate. These supporting ministries include the Ministries with responsibility for: • Agriculture, Fisheries, Water Resource Management, Health, Economic Affairs and Investment, Transport, Tourism, Coastal Zone Management, Maritime Affairs, and Energy (Government of Barbados 2018; Expert interview 2021). • The Barbados Association of Non-Governmental Organizations (BANGO) helps to involve civil society in national and international planning and discussions through technical support, among other types (Government of Barbados 2020).
Other Actors Currently Providing Support (non-exhaustive	Caribbean Community Climate Change Centre (CCCCC); Caribbean Community (CARICOM); Inter-American Development Bank (IADB); GEF Trust Fund and Special Climate Change Fund; USAID; World Bank; Global Environment Facility; European Union; UK FCDO; United Nations Environment Programme; UNDP (Government of Barbados 2018).
Who else Needs to be Involved	The private sector and the general public.
Examples of best Practice; What Works Well and How are Challenges Overcome	The Government of Barbados has promoted the mainstreaming of climate change issues across all sectors so that consideration of the impact of climate change are integrated into planning. Barbados has adopted an integrated approach to coastal planning for the past 40 years. The Coastal Zone Management Unit (CZMU) has responsibility for shoreline protection, development control and marine habitat management through the Integrated Coastal Zone Management Plan and the Coastal Zone Management Act. The CZMU is currently executing the Coastal Risk Assessment and Management Program (CRMP) which aims to enhance the capacity of the CZMU in integrated coastal zone management in Barbados while incorporating sound disaster risk reduction and climate change adaptation principles within the development planning process. Barbados' Roofs 2 Reefs Programme (R2RP) is a ten-year instrument that operationalizes the country's Physical Development Plan and serves as its public finance mechanism, acknowledging the need for climate resilience. It identifies projects and programs and evaluates their costs to secure funding, as well as coordinates their implementation (Government of Barbados 2021). While R2RP functions as an overarching framework that fosters an intersectional approach to adaptation and resilience-building, it also leaves space for sector-level project design (Government of Barbados 2021). However, despite its vision for a climate-resilient Barbados and financial support from the Green Climate Fund (Government of Barbados 2021), R2RP still lacks the necessary financing to operate at its full capacity (Expert interview 2021).
New Opportunities	The Ministry of Environment and National Beautification's goal to develop a green and blue economy is bringing innovative and non-traditional maritime areas to the forefront which can enhance climate resilience; these include marine renewable energy, maritime desalinization, and new avenues in mariculture, presenting opportunities to engage in adaptation and with other sectors in adaptation. The emerging blue economy will complement the ongoing work related to Barbados' transition to a green economy.

COLOMBIA

Elements of Planning Approach Undertaken

Colombia is far along in developing policies and frameworks for long-term adaptation. The long-term strategy E2050 launched in November 2021, in the framework of COP 26 and has already commenced its nascent implementation. Colombia's National Planning Department has taken a leading role in developing long term strategies. Within the National Climate Change Policy (PNCC) and National Climate Change System (SISCLIMA) frameworks, the National Planning Department is supported by the Ministry of Environment and Sustainable Development (MADS), the National Disaster Risk Management Unit (UNGRD) and the Institute of Hydrology, Meteorology and Environmental Studies (IDEAM). In 2005, they published the first version of Vision Colombia II Centenario: 2019, which had the goal to promote longer-term transformations to span more than one administration (Rodríguez Escobar and Cuervo González 2014). This effort, which successfully instilled a preoccupation for the future across the government, resulted in some long-term plans at the subnational level. However, the Vision program was eliminated in 2011, which some actors believe is because it wasn't led by an organization independent of the national government (Rodríguez Escobar and Cuervo González 2014).

Colombia's National Climate Change Adaptation Plan (PNACC) was informed by national policies, studies conducted at the local and international levels, and results from future climate scenarios (Republic of Colombia DNP 2018). The plan's approach includes developing Comprehensive Sectoral (PIGCCS) and Territorial (PIGCCT) Climate Change Management Plans; the National Planning Department (DNP) considers adaptation planning well-suited to the local level for the short and medium term, and views mitigation as a global objective that is longer term (Republic of Colombia DNP 2013). Overall, Colombia seeks to take a holistic approach to resilience building while strengthening the economy (Delgado et al. 2020; MAyDS 2020) and seeks to tackle vulnerability and disaster risk in tandem (Republic of Colombia, DNP 2012; Cruz and Ospina 2019). Common sectors across all of Colombia's adaptation policy are a) Transport and infrastructure; b) Agriculture and farming; c) Housing, water and sanitation; d) Health; e) Energy and mining; f) Industry and commerce.

Gaps, Needs, and Challenges

With so many initiatives, alignment between Ministries can be fragmented. Frameworks remain somewhat siloed due to insufficient intercommunication between agencies, and a unifying instrument is needed (Expert interview 2021). With so many immediate needs, Colombian officials may struggle with planning beyond the next four years. More climate models and downscaled data are needed, and when such tools are available, actors need to learn how to apply the information, particularly in infrastructure, cities, transport and coastal areas, given that 50 percent of Colombia is comprised of marine ecosystems. National actors often favor mitigation to adaptation because it is easier to attract funding. Another challenge is the frequent changes in political leadership (Expert interview 2021).

Experts interviewed also noted a knowledge gap among officials and stakeholders. The knowledge gap is noted within the NAP, however an even most pressing challenge from the plan is the need to establish a financial strategy to support the implementation of plans.

Colombia's Updated First NDC identifies 132 support needs to further adaptation efforts in general, which are grouped into the three broad categories of finance (56), capacity building (35), and technology development and transfer (41) (MAyDS 2020). Identified needs that relate to planning include tools for information analysis, early alert systems, risk analyses, and exchanging experiences (MAyDS 2020).

Policy Frameworks, Laws and Regulations

- National Climate Change Policy (PNCC)
- Plan "Los Contratos"
- Visión Colombia II Centenario
- Ley de Cambio Climático (Law 1931, 2018) and Climate Action Law (2169 of 2021).
- National Climate Change Adaptation Plan PNACC (similar to a NAP)
- Long Term Climate Change Strategy 2050 (E2050)
- Ley Orgánica de Ordenamiento Territorial
- Colombian Strategy for Low-carbon Development (ECDBC)
- National Development Plan (2018-2022): Pact for Colombia, Pact for Equity
- National Plan for Disaster Risk Management

LTS or Equivalent

Strategy 2050 (E2050) is a policy instrument still under development, that is putting forward goals that combine long-term trajectories of socioeconomic development and GHG mitigation to strengthen the country's long-term resilience. It addresses in a holistic mode mitigation, adaptation and disaster risk management and was presented at COP 26 in 2021.

NAP	The PNACC lays out a four-phase process for adaptation: Phase 1 focuses on conceptual and methodological tools for the country's sectors and regions to reduce their vulnerability; Phase 2 focuses on the provision of technical support by the DNP and MADS for the formulation of adaptation plans; Phase 3 focuses on the implementation of adaptation actions, and Phase 4 focuses on the monitoring and evaluation (M&E) of adaptation (Cruz and Ospina 2019). There is an emphasis on increasing capacity and flexibility to face unforeseen changes, reducing vulnerability by focusing on poverty, nature-based solutions and supporting locally led adaptation (Republic of Colombia DNP 2012). Colombia is one of three countries that has developed a NAP-Ag. The coordinating entities of the PNACC have also provided support with a view to making progress in incorporating climate change into planning in five sectors: agriculture, energy, transportation, housing and health (Government of Colombia, 2022).
NDC	Colombia has submitted an enhanced first NDC and Comprehensive Climate Change Management Plans are developed and implemented at the sectoral (PIGCCS) and territorial (PIGCCT) levels through the SISCLIMA framework.
Use of Information and Tools	Colombia's National Climate Change Policy mandates the generation and dissemination of strategic information and predictive and early alert systems in the establishment of the National Information System on Climate Change (SINCC); this system is in charge of informing, monitoring and evaluating climate adaptation measures. Climate Change Economic Impact Studies produced by the National Planning Department (PND) quantify the economic losses in productive sectors from climate change from 2010 to 2100 and inform measures to reduce economic vulnerability (Republic of Colombia 2016). Adaptation planning is also informed by long-term future climate scenarios conducted by the Institute of Hydrology, Meteorology and Environmental Studies (IDEAM), which leads the design and development of the Information Integration System on Vulnerability, Risk and Adaptation (SIIVRA), compliant with IPCC guidelines (Republic of Colombia 2013). This integrated system, currently in development, seeks to respond to different users' and decision-makers' information needs; it will shed light on the vulnerability of different municipalities and will facilitate the monitoring and evaluation of adaptation actions. Different climate threats, vulnerability and risks will be analyzed using indicators organized around food security, water resources, human health, biodiversity and ecosystem services, cultural patrimony, disaster risk, and infrastructure and human habitat.
Entities Responsible	• National Climate Change System (Sistema Nacional de Cambio Climático- SISCLIMA) and Inter-Sectoral Commission on Climate Change (Comisión Intersectorial de Cambio Climático- CCIC) • National Planning Department (Departamento Nacional de Planeación-NDP) • Ministry of Environment and Sustainable Development (Ministerio de Ambiente y Desarrollo Sostenible-MADS) • The National System for Disaster Risk Response Unit (Unidad Nacional para la Gestión del Riesgo de Desastres- UNGRD) • Institute of Hydrology, Meteorology and Environmental Studies (Instituto de Hidrología, Meteorología y Estudios Ambientales- IDEAM)
Other Actors Currently Providing Support (non-exhaustive)	CCAFS, FAO, GIZ, NAP Global Network (UNFCCC 2021) Nature Conservancy, Conservation International, and WWF are supporting large adaptation projects in Colombia.
Who else Needs to be Involved?	Universities could help bridge some of the data and technical gaps faced by government officials.

Examples of Best Practice; What Works Well and how Challenges are Overcome	SISCLIMA's Regional Climate Change Nodes—nine around the country—foster peer learning at the local level and coordinate inter-sectoral and -institutional climate planning and action between the national and territorial levels (Cruz and Ospina 2019). Managed by the Ministry of Environment and Sustainable Development's (MADS) Regional Environmental Authorities, the Regional Nodes are particularly valuable in filling information gaps and disseminating national-level guidelines and polices by convening meetings with actors from different levels (Gonzales Niño 2019). A co-benefit of the nodes is the creation of a community of practice on adaptation that involves experts in the agenda (Expert interview 2021). Exchanges between farmers of different regions, and sectors of different regions, as well as exchanges between local people and other local groups (i.e., mountain groups with Caribbean groups to implement low-cost measures) have been exceptionally rewarding. People learn that adaptation is affordable and important for well-being, which helps implement adaptation projects (Expert interview 2021). Conservation International's adaptation measures in the highlands of Bogota were developed for 20 families—now there are 60 families. These efforts spread by their own volition and with peoples' own resources.
New Opportunities	AILAC organizes a Colombia-Peru-Chile exchange that is composed of Ministry of Environment and Ministry of External Affairs Ministers. Leaders discuss technical reports and country efforts; the most recent agenda was on Loss and Damages. AILAC is trying to gather all LAC region countries.

COSTA RICA

Elements of Planning Approach Undertaken

Costa Rica's holistic approach to long-term planning makes use of existing policy and programmatic frameworks and integrates sophisticated tools such as adaptation pathways and scenario workshop methods, employing regional climate data, specific climate risks, and future scenarios, most of which are housed on online information platforms to facilitate decision-making (e.g., SINAMECC).

Costa Rica seeks to not just reduce damages and losses from climate change but to generate innovative opportunities and promote sustainable development through inter-institutional and cross-sectoral articulation of priorities and collaboration, which the country can facilitate thanks to existing inter-institutional coordination, and the establishment of several climate change councils (Government of Costa Rica2018).

The approach to long-term planning is centered on human rights, gender and social equity with an emphasis on civil society engagement and transparency, which Costa Rica does through public consultations. Regional participatory processes help define country priorities, and efforts are taken to ensure representation of different groups, such as Indigenous territories, youth, and populations with disabilities, and to share results; for example, the NDC which was even translated to different languages (Expert Interview 2021). This is also evident in the National Adaptation Policy process, which was formulated via the creation of six thematic working groups spanning various sectors (agriculture, livestock and fishing; biodiversity; infrastructure; water resources; health; and tourism) (Government of Costa Rica 2018)[5].

While Costa Rica's National Adaptation Policy looks only to 2030 and its NAP-Ag to 2025, the updated NDC -- with a more substantial inclusion of adaptation -- submitted in December 2020 expands the time horizon to 2099.

Gaps, Needs, and Challenges

- There is a need to better integrate climate agendas across ministries and to more clearly articulate and facilitate access to resources, especially with regard to improving information for decision-making, to those actors who need them.
- Some limitations remain when it comes to meaningfully and actively involving different groups of actors at different stages of planning, especially in the beginning phases. This is visible in the enhanced NDC, for example, which featured discussions with public and private actors, with a brief 2-week long online open consultation process to solicit online feedback on the draft NDC (Government of Costa Rica 2020).
- Lack of urban, road and sanitation infrastructure (including potable water access) create challenges for adaptation planning and implementation (Expert interviews 2021).
- Expert interviewees also mention that sluggish and structurally constrained processes can make plans obsolete when they are finally implemented, and that institutions can be very formal and hard to change, which can slow down dialogue and paralyze progress on adaptation action. The approval of regulatory plans is costly and time-consuming process that must go through various institutions for approval, leading to low plan adoption rates.
- Municipalities, particularly those who are smaller, lack the economic resources to develop municipal plans.

Policy Frameworks, Laws, and Regulations

National Adaptation Policy (2018-2030), ratified by the Legislative Assembly in 2016
Coffee NAMA (finished in 2012; several other agriculture NAMAs are in development such as cane, sugar and rice).

LTS or Equivalent

Territorial Economic Strategy for an Inclusive and Decarbonized Economy 2020-2050 [Estrategia Económica Territorial para una Economía Inclusiva y Descarbonizada 2020-2050];
National Decarbonization Plan (2018-2050) [Plan de Descarbonización]

NAP

National Adaptation Plan 2022 Executive Decree 43491-MINAE
NAP-Ag (2017)

NDC

Costa Rica has submitted a First NDC (2016) and Updated First NDC (2020), which includes the first adaptation communication of the country.

Use of Information and Tools	Costa Rica makes use of various sets of information, models and tools; this includes information on historical loss and damage by MIDEPLAN, and information of future scenarios created with PRECIS and CORDEX models. For the National Decarbonization Plan alone, the country analyzed one million scenarios; for adaptation, Costa Rica utilizes models to outline the frequency of future climate impacts and the effects of different government actions (Expert interview 2021). Costa Rica is currently developing instruments to identify by 2022 the different financial, technological and technical needs to advance adaptation, such as: an estimation of implementation costs for adaptation priorities; a Disaster Risk Management Plan 2021-2025; NAP 2022; adaptation action plans for the six socio-economic regions (included in NAP 2022-2026); and maps of current and future climate risks (Government of Cosa Rica 2020). In the next 2 years, with international cooperation resources, work will be done, among others, on: strengthening the network of tide gauges to improve the capture of information on sea level rise and coastal erosion, studies of heat islands in urban areas , risk analysis at the cantonal level, and risk analysis in critical infrastructure. New monitoring of land, ecosystems and progress towards adaptation targets via SINAMECC are included as goals for 2022 and 2026. Many other studies, maps and tools are planned or in progress (Government of Costa Rica 2020). Despite the existence of this valuable information, steps are still needed to increase accessibility for all sectors to identify key climate risks (Expert interview 2021).
Entities Responsible	• Climate Change Office (Dirección Nacional de Cambio Climático (DNCC) within the Ministry of Environment and Energy (MINAE). • Ministry of Planning (MIDEPLAN). • Sectoral Council for the Environment, Energy, Oceans and Land Use (el Consejo Sectorial de Ambiente, Energía, Mares y Ordenamiento Territorial); • Interministerial Technical Committee for Climate Change (el Comité Técnico Interministerial de Cambio Climático); • Climate Change Citizen Consultation Council (el Consejo Consultivo Ciudadano de Cambio Climático (5C)); • Scientific Council for Climate Change (el Consejo Científico de Cambio Climático (4C)), • National Meteorological Institute (Instituto Meterológico Nacional); • National System for Risk Management (Sistema Nacional para la Gestión del Riesgo) and its Municipal Emergency Committees (los Comités Municipales para la Gestión de Riesgo).
Other Actors Currently Providing Support (non-exhaustive)	IDB; UNDP; EU; UNEP; Climate and Clean Air Coalition; UNICEF; AFD; ILO (Government of Costa Rica 2020). GIZ
Who else Needs to be Involved?	The Ministry of Health has shown interest in becoming more involved in climate adaptation and proposed three goals reflected in the NDC; they should be engaged actively to strengthen climate adaptation and health actions. The Ministry of Public Works and Transport (MOPT) is another entity that should be involved more, given the magnitude of loss and damage. Tourism ministry, agroecology department (Expert interview 2021) Links with the private sector and involving them more in planning processes.

Examples of Best Practice; What Works Well and how are Challenges Overcome	• Inter-institutional goal alignment and collaboration, supported by strong political will, is one of Costa Rica's strengths. • Additionally, the participatory planning approach, with consensus on long-term vision from all political parties and civil society, fosters the continuity of priorities when administrations change (Expert interviewee 2021). Example: MIDEPLAN and MINAE ministers worked closely to align the 2050 Territorial Strategy with the National Decarbonization Plan and ensured there was always a high-level figure leading the dialogue to clarify the vision (Expert interview 2021). Different private sector unions also participated, and the President participated during the launch. During the COVID-19 pandemic, Costa Rica engaged with stakeholders via virtual events, which helped decentralize planning processes and resulted in greater civil society participation – an important lesson. The government facilitated virtual engagement by providing pre-paid access to connectivity so more civil society and Indigenous territory representatives could participate. • Openness and flexibility to a variety of long-term planning instruments and integration into existing action plans or projects, especially at the municipal and other subnational levels, can facilitate strategic entry points for adaptation. With support from MINAE, the Ministry of Planning recently updated guidance for the Cantonal Human Development Plan to include a cross-cutting axis on climate change and is working on a pilot basis with 20 cantons (Expert interview 2021). Additionally, Costa Rica is refining its guidance on the effective inclusion of climate change in territorial and regulatory planning. • Development and incorporation of national and regional-level data and information for long-term planning.
New Opportunities	• -Cooperation with Germany and potentially with the US and England (Expert interview 2021). Intra-regional cooperation as well, especially at the technical level and for sharing experiences with nearby countries. E.g., working with experts from Mexico, Chile, Brazil, Argentina who have good experiences working in adaptation topics. • -Integration of adaptation into regulatory land use plans, like the five-year Municipal Strategic Plan and the ten-year Cantonal Human Development Plan, holds great potential.

GUATEMALA

Elements of Planning Approach Undertaken

Institutional capacity and design, stakeholder participation and influence, and policy frameworks are the three most critical areas to Guatemala's planning process. The country's Segeplan (Secretaría de Planificación y Programación de la Presidencia) facilitates all political processes for climate and planning, however the country has yet to convert these aspirational efforts into anything obligatory (Expert interview 2021). Under-resourced institutions are at the core of Guatemala's struggle to create long-term adaptation strategies, but despite this limitation, impressive action and commitment of resources is coming from community organizations and cooperatives.

In 2013, Guatemala passed a framework law to regulate reduction of vulnerability, mandatory adaptation to the effects of climate change, and the mitigation of greenhouse gas effects. This law, "Ley Marco para Regular la Reducción de la Vulnerabilidad, la Adaptación Obligatoria Ante los Efectos del Cambio Climático y la Mitigación de Gases de Efecto Invernadero," established the National Council of Climate Change, presided over by the President. The law's primary objective was to provide a coordinated response to climate change, including developing a national adaptation and mitigation plan and institutional adaptation and mitigation strategies across all public institutions; it also created a comprehensive and inclusive multi-sectorial council. Notably, the law established a national climate change fund for projects that address adaptation, risk management and mitigation (80 percent of the fund allocated to the former two) as well as a national climate change information system (Government of Guatemala 2013).

Gaps, Needs, and Challenges

As with many countries in the region, Uruguay faces challenges implementing long term plans due to insufficient financial resources. All public institutions linked to the Framework Law on Climate Change have the responsibility of allocating financial resources from their own budgets to comply with the law and its goals (MARN 2018). Public entities incorporating climate into their plans will be prioritized during the allocation of fiscal resources (Government of Guatemala 2013). As one of the top 10 most climate-vulnerable countries in the world, Guatemala seeks recognition (and finance) from international actors of their precarious situation and the negligible role the country has had in creating the present climate crisis.

More internal and external support is needed: partners such as the Ministry of Finance and Department of Planning should be engaged to better delineate the implementation of the 2014 law on reducing and adapting to climate impacts, as well as strengthen local capacities so that municipal governments can include climate change in their planning and execution with long-term processes. Likewise, participatory dialogues with the private sector and citizens could be improved, especially with groups that are not traditionally considered fundamental to the process. Engagement needs to continue permeating down through the layers of regional infrastructure and be expanded within ministries and the private sector (Expert interview 2021). The NAP cites the need to increase local governments' strength to enact the NAP as an area for improvement (MARN 2018). The country's NAP also notes better inter-sectoral and agency coordination is needed (MARN 2018).

There needs to be a more consistent method for organizing mayors; at present, political groups' power can depend on their connection with the president, leading to waxing and waning of power with every election cycle, which obstructs promoting adaptation activities at the regional level. Long-term planning has to go through institutions that are strong and more permanent, such as the Ministry of Finance or SEGEPLAN (Expert interview 2021).

Policy Frameworks, Laws, and Regulations

- The National Climate Change Policy AG-328-2009.
- Ley Marco para Regular la Reducción de la Vulnerabilidad, la Adaptación Obligatoria Ante los Efectos del Cambio Climático y la Mitigación de Gases de Efecto Invernadero (Decree 07-2013)
- Plan de Acción Nacional de Cambio Climático (PANCC, 2016)
- Plan Nacional de Desarrollo K'atun 2032 (launched in 2014)
- Guatemala's long-term national development plan, "K'atun: Our Guatemala 2032", was developed within the National Urban and Rural Development Council (Conadur). The K'atun Plan is a set of guidelines that aims at the gradual cultural transformation of the entire society, through a poverty-reduction approach. The document has 11 pages dedicated to methodological process (including appraisal of conditions, diagnostics, participatory citizen dialogues, and planning and programming), followed by another section on national-level planning. (Government of Guatemala 2014). Its goal is to improve living conditions for Guatemalans.
- Climate resilience and adaptation is one of the major axes of the plan and adaptation measures are grouped into the following themes: water resources; sanitation; food security; ecosystems; adaptation training, dissemination and education; human settlements and risk management; and adaptation research (Government of Guatemala 2014).

In addition to the Climate Change Law, Guatemala has institutional, legal and planning tools that contribute to its overarching climate legislative framework, including: the National Strategy for the Restoration of Forested Landscapes and the Law on the Promotion of the Establishment, Recovery, Restoration, Management, Production and Protection of Forests in Guatemala (PROBOSQUE;(Expert interview 2021). Through PROBOSQUE, Guatemala has invested an approximate annual average of USD $20 million in territorial initiatives.

LTS or Equivalent	Estrategia Nacional de Desarrollo con Bajas Emisiones de Gases de Efecto Invernadero (with a view to 2050).
NAP or Equivalent	El "Plan de acción nacional de cambio climático" de 2018 de Guatemala está en su segunda iteración. Tiene como objetivo seis sectores ("líneas") para la adaptación: salud pública; áreas marinas costeras; agricultura y seguridad alimentaria; recursos forestales, ecosistemas y áreas protegidas; infraestructura; y gestión integrada de los recursos hídricos. Hay 153 acciones distribuidas en todos los sectores, 28 objetivos y 9 resultados. El plan incluye un marco de Monitoreo y Evaluación que evalúa el progreso en base a acuerdos internacionales tales como el NDC del país, a partir de procesos nacionales, y desde las perspectivas de los actores vinculados (MARN 2018).
NDC	Guatemala submitted its First NDC in 2017 and updated it in 2022.
Use of Information and Tools	The "Sistema Nacional de Información sobre Cambio Climático" (SNICC), or National Information System for Climate Change is jointly run by the Ministry of Environment and Natural Resources and the National Institute of Statistics (Government of Guatemala 2013). According to country experts, use of tools in Guatemala is marginal, because it does not register in the hierarchy of needs given that people "feel [the impacts of climate change] on their skin" and don't need a stronger justification for action (Expert interview 2021). Water scarcity, which is strongly felt, may be a place to plug in existing tools.
Entities Responsible	• Ministry of Environment and Natural Resources (Ministerio de Ambiente y Recursos Naturales-MARN), which houses the Climate Change Directorate (Dirección de Cambio Climático (MARN) • Department of Climate Change Vulnerability and Adaptation (Departamento de Vulnerabilidad y Adaptación al Cambio Climático); • Secretary of Presidential Planning and Programming (la Secretaría de Planificación y Programación de la Presidencia- Segeplan) • National Climate Change Information System (Sistema Nacional de Información sobre Cambio Climático-SNICC) • National Climate Change Council (Consejo Nacional de Cambio Climático-CNCC) • National Coordinator for the Reduction of Disaster of Natural Origin (Coordinadora Nacional para la Reducción de Desastres de Origen Natural o Provocado- CONRED) • National Institute of Seismology, Vulcanology, Meteorology and Hydrology (Instituto Nacional de Sismología, Vulcanología, Meteorología e Hidrología-INSIVUMEH) • National Council for Urban and Rural Development (Consejo Nacional de Desarrollo Urbano y Rural- Conadur) • Ecosystem-based Adaptation Technical Tables also promote planning and advocacy for the inclusion of ecosystem-based approaches (EbA) to adaptation in land use and ecosystem policy instruments.
Other Actors Currently Providing Support (non-exhaustive)	GIZ; USAID: Green Climate Fund
Who else Needs to be Involved?	Ministry of Finance and Department of Planning. Key actors like the Ministry of Energy could be better engaged because they have very limited commitment at present--this is prevalent across many partners (Expert interview 2021).

Examples of Best Practice; What Works Well and how are Challenges Overcome	There is an interterritorial effort for sustainable economic development within the portion of the "corredor seco" or dry corridor of Guatemala (Expert interview ZSA). Community organizations are internalizing climate change to prepare implementing actions; one example is the farmer's cooperative, FEDECOVERA, that since 1976 has been helping small Mayan farmers integrate into larger supply chains for sustainable cardamom growing and sustainable agroforestry techniques, with broader adaptation and mitigation goals. In the opinion of experts, interviewed governments should be concretizing this level of engagement because cooperatives are currently doing adaptation with their own resources and successfully building resilience (Expert Interview 2021). The National Development Plan has made headway in engaging stakeholders. They have held 11 participatory, civic dialogues in the first phase with different vulnerable groups (almost 5,000 people participated) along with workshops, work meetings, and presentations with other actors; national diagnostic and analyses of scenarios, tendencies, cause-effect of priority variables. Their design and reporting on their approach is detailed, thorough and transparent, and includes the variables arising from civic inputs (Government of Guatemala 2014).
New Opportunities	According to one interviewee, adaptation solutions, long term or otherwise, have to be win-win: they must address poverty (people's most-pressing adversity) while addressing climate change and resilience. One such lens is nutrition, i.e., planting high-producing native plants that are good for the environment.

JAMAICA

Elements of Planning Approach Undertaken

Adaptation efforts exist across Jamaica's government, and are integrated into the planning process through the Planning Institute of Jamaica (PIOJ) and a Climate Change Focal Point Network. Additionally, the Minister of Housing, Urban Renewal, Environment and Climate Change is advised by the ministry's Climate Change Division in tandem with a Climate Change Advisory Board, a group of experts, civil society members, and private sector representatives (Government of Jamaica 2015). Jamaica's 2015 Report on the State of the Jamaican Climate (carried out with CIF resources through the World Bank) looked at climate change's projected effect on the economy, with the goal of integrating this information into development policies and planning. The government has demonstrated strong political will, and Jamaica has been successful in getting external finance to drive their programs. They have strong institutional capacity and strong stakeholder engagement (Expert interview, 2021). In some cases, Jamaica is banking on emissions reduction programs in energy and land use to provide adaptation co-benefits (Government of Jamaica 2020).

Many of the policies that Jamaica develops and adopts benefit from consultations with university scientists, such as the University of the West Indies Climate Studies Group at Mona. These policies are one of the factors that makes Jamaica a regional leader: their State of the Jamaican Climate Reports (2012, 2015, 2019) are considered best practice and are used as templates by other countries.

A GEF-funded program for capacity building measure for resiliency (CBIT) works to build capacity for carrying out the Paris Agreement, and for local level implementation of the Paris Agreement in Jamaica (Expert Interview 2021). Long-term adaptation and development planning in Jamaica includes the Ministry of Finance and the Public Service from the inception phase.

Gaps, Needs, and Challenges

Jamaica's National Development Plan Vision 2030 Jamaica notes the following weaknesses from past planning efforts: relatively short-term planning horizons lacking long-term development foci; insufficient resources for supporting implementation; lack of continuity; inadequate monitoring and evaluation framework; lacking involvement of private sector, other non-state actors and the wider society; and not synergizing targets, indicators and the budget (PIOJ 2009).

Gaps in time series data and analyses of environmental problems are an obstacle to spotting emerging problems with quantitative indicators and inhibit Jamaica's ability to assess the efficacy of their environmental policies and programs (PIOJ 2009). The country's NDC echoes that implementation of resilience-building actions continues to be constrained by limited access to finance, data, knowledge and awareness, human resources and technical capacity, and states that the country will follow through on adaptation actions with national funding, with the provision of support for conditional actions – presumably in the form of funding (Government of Jamaica 2015). These issues are being addressed to varying degrees, yet gaps and challenges remain (Expert Interview 2021).

Jamaica's updated NDC summarizes the country's priorities by noting that, as an indebted and climate-vulnerable state, Jamaica must balance resilience and adaptation and mitigation implementation with supporting the day to day needs of the country (Government of Jamaica 2020). Its Third National Communication reinforces the need for financial assistance for adaptation initiatives, especially in the agricultural sector, because of insufficient and inaccessible public finance but cautions that support must also be directed towards mitigation efforts (Government of Jamaica 2018).

Policy Frameworks, Laws, and Regulations

- Vision 2030 Jamaica: National Development Plan.
- Climate Chance Policy Framework for Jamaica (2015) currently being updated and available for public review.
- Medium Term Socio-Economic Policy Framework (2018-2021).
- Environmental Stewardship Policy.
- Disaster Risk Management Act (2015).

LTS or Equivalent

Vision 2030 Jamaica is Jamaica's long-term development plan and prioritizes educating the public on the environment and increasing participation in natural resource management; a regulatory framework for conserving natural resources; climate-proofing policy and planning processes; determining the economic value of losing biodiversity and ecosystem services; preserving natural capital; and improving disaster risk management (PIOJ 2009).

Goal Four pertains to the environment, and of the 15 National Outcomes identified by the plan, one is explicitly related to climate adaptation while two more are related (Planning Institute of Jamaica 2009). National Outcome 14 Hazard Risk Reduction and Adaptation to Climate Change outlines four national strategies: 1) improve resilience to all forms of hazards; 2) improve emergency response capability; 3) develop measures to adapt to climate change; and 4) contribute to the effort to reduce the global rate of climate change (Planning Institute of Jamaica 2009).

The country is currently developing a climate specific long-term strategy with assistance from the NDC Partnership through the Climate Action Enhancement Programme.

NAP or Equivalent

Jamaica has a National Adaptation Planning Process, the development goals of which are laid out in Vision 2030 Jamaica: a National Development Plan. Jamaica received resources from the GCF in 2021 to commence the preparation of its NAP.

NDC

Jamaica's NDC contains a section on adaptation that identifies institutional leads, but the process itself is not articulated in this document. Jamaica's Updated NDC focuses primarily on increasing the ambition of its mitigation component, as well as broadening the NDC's sectoral scope. The document does not focus on adaptation as much as Jamaica's INDC, instead promoting integrated actions and mitigation actions with adaptation co-benefits (Government of Jamaica 2020).

Use of Information and Tools

Oxford University is leading the systemic risk assessment and investment prioritization tool work in Jamaica for CCRI, with support of FCDO. The GCF is also involved as they're leading the NBS work for CCRI in Jamaica (Expert Interview GA).

The Environmental Performance Index (EPI) is proposed as an outcome indicator for Outcome 13 of the National Development Plan (Planning Institute of Jamaica 2009).
The Vulnerability and Assessment (V&A) framework was used to assess the agricultural sector's vulnerability, while the Voice, Choice and Action (VCA) framework was used to evaluate vulnerability in the fisheries sectors. The UNDP adaptation policy and the USAID resilient development frameworks were also used to assess climate vulnerability in the natural resources sectors (Government of Jamaica 2018).

Entities Responsible and Coordination Mechanism; key Actors Involved	• Office of the Prime Minister • Planning Institute of Jamaica (PIOJ) • Ministry of Finance and the Public Service (MoFPS) • Ministry of Economic Growth and Job Creation (MEGJC) which houses the Climate Change Division • Hazard Risk Reduction and Climate Change Thematic Working Group (Vision 2030 Jamaica) • Ministry of Agriculture and Fisheries • Ministry of Health and Wellness • Forestry Department • National Environment and Planning Agency (NEPA) • Climate Change Division and Climate Change Advisory Board • Climate Change Focal Point Network • Office of Disaster Risk Preparedness and Emergency Management • Caribbean Community Climate Change Center (private sector involvement) • Pilot Program for Climate Resilience (PPCR, funding mechanism) /Climate Investment Fund • Local Authorities (Parish Councils) • University of the West Indies • University of Technology, Jamaica • Meteorological Service of Jamaica • Water Resources Authority
Other Actors Currently Providing Support (non-exhaustive)	Adaptation Fund; Climate Investment Fund; IDB; World Bank; USAID; EU; UNEP; UNDP; GEF; UK Foreign, Commonwealth and Development Office; Global Affairs Canada; Japan International Cooperation Agency; Australian Government Overseas Aid; Caribbean Community Climate Change Centre (CCCC); Caribbean Regional Strategic Programme for Climate Resilience; NDC Partnership (Government of Jamaica 2018; Expert Interviews 2021).
Who else Needs to be Involved?	Global NGOs; the private sector and the Private Sector Organization of Jamaica (PSOJ) (which could assist with private sector engagement).
Examples of Best Practice; What Works Well and How are Challenges Overcome	PIOJ has been a particularly effective entity. It operates as a technical agency under the PIOJ Act, is respected by both major political parties, and has institutional memory thanks to length of tenure of personnel and continuous climate change programming that has not suffered the breaks that typically arise from changes in political administrations and parties. In other countries, where there is a ministry of planning that is driving the agenda, resources shift depending on the minister and during administration turnover. PIOJ is a statutory body under the Ministry of Finance and Public Service – keeping the MoFPS involved and abreast of projects from the inception stage has been integral to their success. PIOJ is the focal point for the funding from PPCR, World Bank, Caribbean Development Bank, as well as the National Implementing Agency for the Adaptation Fund in Jamaica (Expert Interview 2021). Jamaica plays a large role in policy discussions at the global level. The Prime Minister is one of the key people on the International Ocean Panel and Jamaica's Minister of Housing, Urban Renewal, Environment and Climate Change is the co-lead of the NDC Partnership. Jamaica's State of the Climate Reports (two released so far in 2012 and 2015; the third report for 2019 is being finalized) are considered best practice and are used as templates by other countries in the region, i.e., Suriname. Contingent loans, used by IDB, are a much appreciated and needed resource in the Caribbean (Expert Interview 2021). Tapping into international and domestic universities has also been a best practice, as it informs policy and gives Jamaica

	evidence for when they advocate at the international level for themselves and SIDS. Another good practice has been early stakeholder engagement in policy development, moving away from the usual top-down approach. This was done extensively in the development of Vision 2030 Jamaica and continues to be common practice in the shaping of policies (Expert Interview 2021).
New Opportunities	Jamaica's work with Oxford University and the Coalition for Climate Resilient Investment (CCRI) is a new initiative dealing in managing uncertainty and risk in infrastructure planning. The PIOJ is the focal point for this initiative. Green Climate Fund Country Programme led by the CCD. Jamaica NAP implementation to commence in early 2022. Research and Technology Development Agenda which highlights priorities to be pursued over the medium to long term.

MEXICO

Elements of Planning Approach Undertaken

Mexico has adopted strong national climate policies (framed in the General Climate Change Law), comprehensive institutional arrangements, and legal and regulatory instruments (including federal and subnational coordination programs and public-private working groups) that create a positive enabling environment to design and promote long-term projects. -deadline for mitigation and adaptation planning. Mexico outlines a vision for the next 10, 20, and 40 and 50 years in its LTS that includes objectives and actions in terms of and three of the five priority areas include adaptation and in more detail its NDC recognizes the priority axes and themes care in terms of reducing vulnerability to the impacts of climate change: a) Prevention and management of negative impacts on the human population and the territory, b) Production systems and food security; c) Restoration, conservation and sustainable use of biodiversity and ecosystem services d) Comprehensive management of water resources and: society, ecosystems e) Protection of strategic infrastructure and tangible cultural heritage

and production systems. Policy alignment is also present, with special emphasis on social benefits and the strengthening of local vulnerable populations, as described in Mexico's Special Climate Change Program (PECC) 2021-2024, made up of26 strategies and 199 lines of action, of which 1 objective made up of which 7 strategies and 50 specific actions are directly focused on providing care, belong to the adaptation agenda. likewise, objective 3 of the same Program integrates synergistic adaptation-mitigation actions, particularly strategy 3.1 focused on generating co-benefits with green and blue carbon. and through the integration of cross-cutting elements in Mexico's enhanced NDC (SEMARNAT 2013; Government of Mexico 2020).
The improved NDC of Mexico, updated to the month of completion in December 2020, significantly increases the attention and weight of adaptation, since in addition to maintaining the commitments assumed in the matter in 2015, it identifies priorities and improves the level of detail for the implementation of the actions, considering the adaptation process as a whole.

This responds to progress in understanding the country's vulnerability to climate change, as well as considering the information presented in the IPCC special reports and consolidating adaptation processes as part of the country's comprehensive development (Government of Mexico , 2020).

Along with advanced policy frameworks, political will has advanced long-term adaptation processes. However, in recent years political priorities have changed, which has slowed the momentum of climate change. The new priorities have impacted the enactment and financing of the Intersecretarial Commission on Climate Change (CICC), according to expert interviews.

The Intersecretarial Commission on Climate Change (CICC) is the body of the National Climate Change System (SINACC) designed to promote the coordination of climate change actions of the agencies and entities of the federal public administration. The CICC is made up of 15 SecretariatsSecretaries of State and is chaired by the Secretariat for the Environment and Natural Resources (SEMARNAT). The CICCCCPI has seven working groups for the development of specific issues, such as the Adaptation Policy Working Group (GT-ADAPT). The GT-ADAPT is one of the most consolidated groups within the CICCCCPI and has been a pillar in the continuity of the Adaptation policy in Mexico regardless of the government rotation. During the last ten years, the GT-ADAPT has maintained the permanence of several of its members, which has allowed the continuity of the adaptation processes and an improvement in the understanding and appropriation of climate change adaptation issues. According to SEMARNAT experts, the GT-ADAPT is the leader behind the integration of the updated component of the NDC.

At the subnational level, adaptation processes at the regional, state, and municipal levels have been developed and adopted by them by other institutions. For example, the adaptation programs of protected natural areas, and productive sectors such as tourism, where there has been an integration of the adaptation approach based on ecosystems, has been possible through state and municipal governments, as well as by Organizations of the Civil Society and in recent years the progressive involvement of the private sector.

For example, at the regional level, the Natural Protected Areas Adaptation Programs (PACC) have been developed, which, together with the Management Programs of the ANPs, represent an opportunity for the design and implementation of actions with or take a look at their climate change programs. and long-term that strengthens resilience from the areas. As for the private sector, there are cases of success, specific projects where the joint work between the federation, state governments and the private sector with the support of international cooperation, have designed, implemented and monitored Ecosystem-based Adaptation actions in priority tourist sites. of the country that also had links with vulnerable areas and ANPs.

In parallel, the Government of Mexico recognizes that the involvement of society in the adaptation processes of cities where adaptation to climate change allows their success and continuity, therefore, elbegins to be integrated into local development programs. The citizen consultation process at the national level is mandatory by law and is a necessary requirement for the development of climate change adaptation processes. The knowledge of the problems, the design of actions and the appropriation of the local communities are the basis for the success of the adaptation. For this reason, the Government of Mexico promotes, within the framework of participatory processes with young people, communities, academia, the private sector, civil society organizations and the population in general, the exchange of information and scientific and traditional knowledge that are integrated into projects to the reduction of the vulnerability of the impacts of climate change in the territory.

Gaps, Needs, and Challenges

A current challenge is to access financing in a sustainable way over time. As the new administration implemented austerity measures, external and internal financing has been limited. As a result, Mexico is working with reduced capacity and funding to meet its very ambitious climate commitments (Expert Interview 2021). It was also identified that there is a need to provide tools at the local level that allow adaptation to climate change. be redirected or integrated into budgets and not seen as an expense, but as an investment.

- Generate knowledge about the costs of implementing actions to adapt to climate change.
- Have specific indicators and indices for monitoring and evaluation and verify progress in reducing vulnerability and improving adaptation capacities.
- There has also been a high turnover in the Environment Secretariat (Expert interviews RPRF).
- Mexico strives for participatory citizen processes to inform its policies, e.g. the enhanced NDC.
- Knowledge of the costs of implementing actions to adapt to climate change
- Have specific indicators and indices for monitoring and evaluation and verify progress in reducing vulnerability and improving adaptation capacities.

Policy Frameworks, Laws, and Regulations	• General Law on Climate Change (LGCC) approved in 2012 and amended in 2018; • National Climate Change Strategy, Vision 10-20-40. 2013. • Intended Nationally Determined Contribution (iNDC). 2015. • Nationally Determined Contribution (NDC) 2020. • Environment and Natural Resources Sector Program 2020-2024 • Special Climate Change Program (PECC) 2021-2024 • National Adaptation Policy (NAP) (In the process of integration). • Climate Change Adaptation Programs in Protected Natural Areas (PACC) • State and municipal climate change programs • National Adaptation Communication. 2021.
LTS or Equivalent	Mexico's Climate Change Mid-Century Strategy November 2016
NAP	Recognized within the framework of the General Law on Climate Change as the National Adaptation Policy (PNA), it is specific action 1.1.1 of the PECC 2021-2024. Its objective is to support the execution of the adaptation commitments of the NDC and strengthen the adaptation planning processes in the territory.
NDC	Mexico was the first developing country to integrate a climate change adaptation component as part of its INDCs in 2015. As a result of the NDC update process, Mexico has an NDC that improves the adaptation component from three to five strategic axes and from 21 to 27 lines of action. Likewise, it expands its scope of action by integrating transversal elements such as Nature-based Solutions (NbS) and Community-based Adaptation (AbC) approaches; Adaptation based on Ecosystems (EbA); as well as Adaptation based on Disaster Risk Reduction (AbRRD). Likewise, elements are integrated to promote the adaptation of the population, ecosystems, production systems, food security, comprehensive management of water resources, and strategic infrastructure and tangible cultural heritage of the country. The adaptation NDC presents greater ambition in the actions that will be carried out in the territory with human rights and gender equality approaches and plans to establish and consolidate Monitoring and Evaluation (M&E) mechanisms. The Government of Mexico is currently working on the implementation strategy in the territory and the NAP processes that will support compliance with the adaptation NDC.
Use of Information and Tools	Mexico has access to national and subnational vulnerability and climate impact assessments, models of future impacts on various sectors, including economic impacts, and national registries to store this information. IPCC data sources serve as the foundation. Mexico, through the National Institute of Ecology and Climate Change (INECC), collects and generates scientific-technical research on the four phases of the Climate Change Adaptation Process: vulnerability assessment; design of adaptation measures; implementation; and Monitoring and Evaluation (M&E). The Information System on Climate Change has gathered information on climate impacts but does not have data on the climate costs or financial considerations; in general, it is unclear how much money is budgeted for climate action (Guzmán Luna 2020). All these sources are used to inform long-term adaptation planning. Robust decision-making is used for decision-making. For the LTS specifically, institutions within the Mexican Climate Modelling Network conducted vulnerability assessments over the last two decades; development of several models projecting temperature and rainfall changes (Cavazos et al. 2013) with regional scenarios; MRV. For the Special Climate Change Program: assessment of future climate impacts on the population, ecosystems, productive sectors and infrastructure; economic impacts of future climate (assessment of asymmetry in public expenditure between disaster prevention

and attention); municipality vulnerability assessment. Instruments: The National Risk Atlas which integrates gender indicators; the National Vulnerability Atlas; the National Emission Inventory; the National Emission Registry; the Mexican Official Norms; the Information System on Climate Change, as well as other financial, market, and economic instruments such as the tax on carbon, the voluntary emission trade system, and the Fund for Climate Change.

Finally, the 5th and 6th National Communications and the Adaptation National Communication are also key documents.

Entities Responsible

- Secretariat of Environment and Natural Resources (Secretaría de Medio Ambiente y Recursos Naturales- SEMARNAT)
- National Institute of Ecology and Climate Change (Instituto Nacional de Ecología y Cambio Climático- INECC)
- Secretariat of Agriculture and Rural Development (Secretaría de Agricultura y Desarrollo Rural)
- Secretary of the Interior
- Secretary of Foreign Relations
- Marine Secretary
- Secretariat of Finance and Public Credit
- Ministry of Social Development
- Secretary of Energy
- Ministry of Economy
- Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food
- Secretary of Communications and Transportation
- Secretary of Public Education
- Health Secretary
- Secretary of Tourism
- Secretariat of Territorial and Urban Agrarian Development
- Secretary of security and citizen protection and as a permanent guest the National Institute of Statistics and Geography - INEGI
- National Climate Change System (Sistema Nacional de Cambio Climático- SINACC)
- Adapt Working Group (GT Adapt)
- Inter-secretarial Commission on Climate Change (Comisión Intersecretarial de Cambio Climático- CICC) which includes 14 ministries (Energy, Governance, Foreign Affairs, Marine, Finance, Social Development, Economy, Agriculture, Livestock and Rural Development, Communications and Transport, Public Education, Health, Tourism, Rural and Urban Territorial Development, and Environment and Natural Resource)
- Council on Climate Change (Consejo de Cambio Climático- C3)
- Several states have their own Inter-Ministerial Commission on Climate Change

Other Actors Currently Providing Support (non-Exhaustive)	Mexico has extensive bilateral and multilateral support, among which is the German Development Cooperation (GIZ); Global Environment Facility; United Nations Development Program, UN Environment, French Development Agency (AFD), United Kingdom, UNEP, among other United Nations agencies, CAF, NDCP. The IDB has acted as technical partner for the development of the PECC and its monitoring and evaluation systems, as well as for the preparation of technical elements for the conformation of the NAP and the update of the adaptation chapter of the ENCC and provided support for the design of the roadmap for the implementation of the NDC on adaptation. the adaptation chapter in the NDC updated to 2020. The staff of the Ministry of Agriculture and Rural Development is working on adaptation, for example, through the General Directorate of Climate Change in the Agriculture and Livestock Sector. National Development Banks. IDB has served as a technical partner for the PECC, NAP and adaptation chapter in the enhanced NDC.
Who else Needs to be Involved?	Private sector, civil society and local communities.
Examples of Best Practice; What Works Well and How are Challenges Overcome	Design and approval of climate policies; identification of adaptation priorities and gaps in National Communications to the UNFCCC. Political interest and commitment at the highest levels, especially given Mexico's highly centralized character, are also key: but those interests must be secured in subsequent administrations for policies and commissions to be carried out. Institutional arrangements and comprehensive instruments that create a positive enabling environment for long-term adaptation planning. In addition, the generation of knowledge allows the coordination of efforts by the different actors involved in planning and implementation for climate adaptation. Members of civil society who have sufficient access to climate and environmental information are empowered to participate in decision-making processes. Mexico has developed and maintained a National Atlas of Vulnerability to Climate Change, which articulates a standardized criterion to identify vulnerable municipalities based on data offered by various institutions, including the National Institute of Statistics and Geography (INEGI) and the Observation Laboratory of the Earth (LANOT). In addition, Public Participation Geographic Information Systems are participatory self-assessments of vulnerability at the local level, relying on the local knowledge of stakeholders to generate historical records and identify risks and opportunities by mapping intervention areas at the local level (Participant of workshop 2021). Transition and strengthening of the implementation of actions at the local level.
New Opportunities	Seek collaboration and alignment with Ministry of Well-Being and other social welfare-centered programs/instruments/agencies, as well as water teams at SEMARNAT, and emphasize the social benefits of adaptation action to attract buy-in and interest from other departments and attract needed resources.

URUGUAY

Elements of Planning Approach Undertaken

Uruguay has increasingly institutionalized its adaptation planning processes under the National Climate Change Policy (PNCC), which was developed in 2017 to articulate overarching goals, strategies and lines of action in a way that aligns with mitigation and development goals and human rights priorities (Government of Uruguay 2017b). Its Nationally Determined Contribution (NDC) articulates the implementation of the PNCC, framing and defined by sectoral NAPs. Each plan adopts a different time horizon for their action plans; for example, the NAP Agro has an action plan to 2025, and NAP Cities & Infrastructure has a five-year action plan proposal. The strategic horizon of both NAPs is aligned with the PNCC towards 2050.

Adaptation planning strategically starts at the sectoral level, with the development of sectoral NAPs, rather than at the national level, and efforts are also taken to coordinate transversally with relevant decentralized policies and programs (as seen for the development of the NAP Cities and NAP Coasts). The sectoral approach to adaptation planning allows for a more specific, localized approach that aligns with national goals and international agendas. Planners use existing and promote new national studies on climate risks, vulnerability, and adaptation options, and new processes are advancing disaggregated, georeferenced data for vulnerability (MVOTMA and SNRCC 2020). Participatory activities with a wide range of stakeholders outside the central and subnational government(s) (civil society, academics, producers) are seen as essential to planning and policy development by creating space for their participation.

At the finance and policy level, Uruguay is the only Latin American country with a five-year budget plan which aligns with the five-year NDC cycle. Not tying the budget to short-term administration cycles allows Uruguay to develop more medium- and long-term plans and policies. However, it can be difficult to obtain external concessional funds for a country with a relative higher level of income and development compared to other developing countries (Expert interview 2021).

Uruguay has a strategy of working sector to sector. The National System of Response to Climate Change and Variability (SNRCC) has worked since 2009 to support sectors in presenting finance and supply needs to the Ministries of Environment and Finance, which have authority over relevant funds. Political will is evidenced by the Uruguay's Budget Law, Article 533, which specifies that Uruguay's budget needs to be in line with Paris Agreement goals and green recovery.

Long-term plans and several NAPs have been developed. These include the National Climate Change Policy and NAPs Agriculture, Coastal Zones and Cities & Infrastructures, proposing strategies that extend to 2050 (Government of Uruguay 2017a).

Gaps, Needs, and Challenges

The government underlines the need for greater integration and follow-up of adaptation efforts that have synergies with other outcomes, as well as the need for a financial strategy to implement measures (e.g., the NAP Cities and NAP Coastal Zones) and the development of actions, incentives and awareness raising that incentivize and involve the private sector (MVOTMA and SNRCC 2020). Similarly, the PNCC highlights the need to strengthen capacities at the national, department and municipal level, by investing in human resources and financing actions (MVOTMA et al. 2020).

Implement a methodology for the forecast, registration and evaluation based on impacts due to climatic events and evaluation of damages and losses, in a systematic way.

One specific planning challenge relates to water resources management across ministries and jurisdictions as there is a need to produce more current, relevant models and other updated and localized information for monitoring the quantity and quality of water, as well as EWS for flood management (Expert interview 2021). A project is currently being articulated to develop real-time models and monitoring systems in the Santa Lucía watershed, with support from Euroclima. Watershed management depends heavily as well on international cooperation with Argentina, Paraguay and Brazil, which can pose a challenge. Nevertheless, Uruguay along with neighboring countries, is collaborating in the development and planning of the Project for the Implementation of Strategic Actions for the Plata Watershed (PPM) (CIC n.d.).

Another major challenge that Uruguay faces is the lack of coordination between the central and subnational governments. Many subnational levels of government exist, some of which might not be working in alignment with national-level strategies (Expert interview 2021). A big challenge is transforming a vision, specifically the sectoral "transversal visions," into implementation that is reflected in public budgets.

Policy Frameworks, Laws, and Regulations

- Creation of the Ministry of Environment (Law N° 19.889, article 291)
- Law N° 19.924, article 533, Ley de Presupuesto de Uruguay, inclusion of mitigation and adaptation to climate change in public finances.
- Sistema Nacional de Respuesta al Cambio Climático y Variabilidad (SNRCC; created in 2009 by Decree 238 in 2009)
- National Climate Change Policy (PNCC 2017)
- First Nationally Determined Contribution (2017)
- Long Term Climate Strategy (2021)
- Uruguay's National Voluntary Report (2019) mentions the following as components of a robust sectoral climate policy framework: National Energy Policy; Strategic lines towards an Agro-Intelligent Uruguay; National Water Policy; National Environmental Plan for Sustainable Development; National Disaster Risk Management Plan; National Strategy for Gender Equality (Presidencia la República Oriental de Uruguay, 2019). The updated 2021 report also includes: Long-term Climate Strategy 2050; National Energy Policy 2040; National Policy for Comprehensive Emergency and Disaster Risk Management 2019-2030; National Comprehensive Emergency and Risk Management Plan 2020-2024; Departmental Plans for Comprehensive Risk Management in Montevideo and Canelones; Gender and Climate Change Strategy; National Budget Law 2020-2024,), National Relocation Plan (2010) (Presidencia la República Oriental de Uruguay 2021)

LTS or Equivalent

Currently in development, with plans for submission to the UNFCCC in November 2021. The International and Ibero-American Foundation for Administration and Public Policies (FIIAP) and EUROCLIMA are providing support.

NAP

The National Adaptation Plan for Agriculture was submitted to the UNFCC in 2019, the National Adaptation Plan for Coastal Areas and the National Adaptation Plan for Cities and Infrastructure were submitted to the UNFCCC in November 2021. In addition, the NAPs for Energy and for Health are in initial stages of development. The 5 NAPs were conceived to be implemented within the framework of the National System of Response to Climate Change and Variability (SNRCC), which is Uruguay's most robust interinstitutional mechanism for coordination. Uruguay's NAPs fulfill its commitments articulated in its First Nationally Determined Contribution (NDC) and the Adaptation Communication of Uruguay to the Paris Agreement, as well as the SDGs (Government of Uruguay 2017b).

NDC	The NDC includes an adaptation component, which is the first Adaptation Communication, and marks all adaptation measures as unconditional.
Use of Information and Tools	Uruguay makes extensive use of information and tools centered on national studies, including downscaling of climate projections and updating vulnerability assessments according to the sector; analysis and evaluation of adaptation options, estimating damage and losses (Government of Uruguay 2017). The Coastal and Cities NAPs have the largest and most comprehensive technical components, including temperature, precipitation, weather and sea level projections (Expert interview 2021). The process for NAP Cities exemplifies stakeholder engagement in these processes; it featured a mapping of actors, a national inventory of adaptation experiences, articulation of adaptation options with the help of universities, a multi-hazard risk zoning assessment with city authorities and technical staff, and the development of early warning systems (UNDP 2020).
Entities Responsible	• Ministry of Environment (Ministerio de Ambiente), which houses the National Directorate for Climate Change (Dirección Nacional de Cambio Climático (DINACC) • National System of Response to Climate Change and Variability (Sistema Nacional de Respuesta al Cambio Climático y Variabilidad- SNRCC), which is chaired by the Ministry of Environment (Ministerio de Ambiente) and includes eight other ministries: » Ministry of Livestock, Agriculture and Fisheries (Ministerio de Gandería, Agricultura y Pesca) » Ministry of National Defense (Ministerio de Defensa Nacional) » Ministry of Economy and Finances (Ministerio de Economía y Finanzas) » Ministry of Industry, Energy and Mining (Ministerio de Industira, Energía y Minería) » Ministry of Foreign Relations (Ministerio de Relaciones Exteriores) » Ministry of Public Health (Ministerio de Salud Pública) » Ministry of Education and Culture (Ministerio de Educación y Cultura) » Ministry of Tourism (Ministerio de Turismo) • SNRCC also includes the Congress of Mayors (Congreso de Intendentes), National Emergency System (Sistema Nacional de Emergencias- SINAE), Uruguayan National
Other Actors Currently Providing Support (non-exhaustive)	GCF and UNDP are providing adaptation planning support, for example to facilitate the integration of adaptation activities outlined in the NAP cities into new and existing policies and programs (GCF 2018). AECID; CTCN; EUROCLIMA (and its corresponding agencies); GIZ; FAO; Cantabria University;
Who else Needs to be Involved?	More could be done to engage the private sector (Expert interviews 2021).
Examples of Best Practice; What Works Well and How are Challenges Overcome	The Ministry of Environment was born in July 2020 out of what was previously the Ministry of Housing, Land-use and Environment (MVOTMA) and has replicated a similar structure and established the National Directorate for Climate Change to continue gaining momentum on previously established workstreams. The Ministry of Environment houses various technical directorates linked to adaptation and collaborates within the SNRCC across government entities. Using a participatory approach, they play a consultative role with other Ministries' staff and entities whose work pertains to climate change (Expert interview 2021). NAPs have successfully built transversal groups and held very consultative sessions with stakeholders. NAP Cities has reached nearly every city mayor ("intendente") in the country, and they've been able to transform implementation into very concrete actions. One of their strengths is that they can reach the micro-level when it comes to adaptation plans (MVOTMA and SNRCC 2020).

Appendix II: Methodology

A. List of Baseline Interview Questions

Below is the list of baseline questions that were used as a guide for semi-structured interviews with IDB and AFD specialists. The questions were translated into Spanish for Spanish-speaking countries and tailored with specific country-relevant details for each country. To create a comfortable space for interviewees, their responses and comments were promised anonymity. Two months later, these discussions were followed by a second round of virtual interviews, this time with country officials, which probed deeper into particular issues and topics uncovered in the country document review and during the first round of interviews.

Baseline questions:

1. What is your current role in your organization?

2. Please provide a brief description of your experience or involvement with [Name of Country]'s long-term adaptation planning efforts.

3. Our research has uncovered several key factors supporting long-term adaptation planning. Can you please rank these, and explain how the top three played a critical role in the long-term planning process? Which didn't this country have which would have been most helpful? (list below will have country-specific examples)

a. Data/analysis/climate model downscaling.
b. internal or external finance.
c. research and evidence base.
d. political will.
e. institutional capacities/design.
f. stakeholder participation and influence (including civil society).
g. policy frameworks, including new laws.

4. In addition to X,Y,Z (show organizational chart or list of actors for this country), what other ministries and stakeholders have played key roles?

5. What were some challenges you faced in the planning process? What are your thoughts on how these barriers can be overcome?

6. Does the country have a specific approach to dealing with different future scenarios? Is there a specific approach to decision-making under uncertainty?

7. Are you aware if the country is using any of the following tools for long-term adaptation planning:

   a. IPCC references;
   b. Risk tools including climate projections;
   c. Climate scenario analysis tools;
   d. Robust decision making;
   e. Dynamic adaptive policy pathways;
   f. Transformative pathways.

8. What were the results of this planning process?

9. How is progress going towards implementation of these plans?

10. What lessons did you learn from doing this process? What would you do differently next time?

11. What have been the keys ?

12. Is there anything else you'd like to share with us about the effectiveness of this country's long-term adaptation design process?

13. Who else do you recommend we interview to learn more about these processes?

B. Agenda and Additional Details on Virtual Workshop Held in August 2021.

The World Resources Institute's (WRI) Climate Resilience Practice organized and hosted a virtual workshop on August 30, 2021, in coordination with the Inter-American Development Bank (IDB) and French Development Agency (AFD). The workshop was titled "Long-term Adaptation Planning in Latin America and the Caribbean" and took place on August 30th, 2021, lasting three hours. The organizers targeted actors involved in the design and implementation of long-term adaptation planning in Latin America and the Caribbean. An online scheduling poll was shared to determine the time and date that worked for most participants. As outlined in the included agenda, the workshop consisted of expert presentations, interactive breakout groups and larger plenary discussions. Stefanie Tye from WRI was the main organizer and facilitator, with support from Jennifer Doherty Bigara Rodriguez (IDB), Valentina Saavedra (IDB) and Christophe Buffet (AFD). WRI's Dr. Rebecca Carter and Dr. Cristina Rumbaitis del Rio also contributed as long-term adaptation planning experts.

9:00 AM	**Bienvenida** Jennifer Doherty-Bigara Rodríguez, *Especialista de Cambio Climático, BID* Christophe Buffet, *Experto en Adaptación Climática, AFD*
9:15 AM	**Presentación de la Agenda** Stefanie Tye, *Investigadora del equipo de Resiliencia Climática, WRI* *Los participantes serán invitados a presentarse por escrito en el chat*
9:30 AM	**Presentación: Esfuerzos en curso en la Región y Conceptos Clave** Stefanie N. Tye, *Investigadora del equipo de Resiliencia Climática, WRI*
9:50 AM	**¿Por qué es tan Importante la Planificación a Largo Plazo con un Enfoque de Adaptación?** Dra. Rebecca Carter, *Directora del equipo de Resiliencia Climática, WRIE*
10:05 AM	**Trabajo de Grupo 1: Definir los Ejercicios de Planificación Climática a Largo Plazo y sus Desafíos** *Los participantes se dividirán por grupos y usarán la plataforma interactiva Miro para compartir sobre la temática y compartirán conclusiones*
10:50 AM	**Descanso**
11:00 AM	**Trabajo de Grupo 2: Definir las Necesidades a Nivel de Herramientas, Recursos Humanos y Financieros, entre otros.** *Los participantes se dividirán por grupos y usarán la plataforma interactiva Miro para compartir sobre la temática y compartirán conclusiones*
11:45 AM	**Discusión en Plenaria**
11:55 AM	**Cierre y Próximos Pasos de la Publicación** *BID y AFD*

C. Details of the Methodology Used in Developing this Report

The research methodology for this report consists of a combination of qualitative methods, including literature and country document review; a two-phased interview process, first with Inter-American Development Bank (IDB) and the Agence Française de Développement (AFD) regional and country specialists and subsequently with country officials; and discussions and responses gathered during a three-hour virtual workshop and a two-hour technical workshop. A draft version of the first four sections of the report was shared with approximately 40 stakeholders to solicit their feedback and make any necessary changes and corrections. The full draft of the report was similarly shared in October 2021 and February 2022 for peer-review.

Literature Review

The literature and country document review, undertaken from February to July 2021, comprises over 70 documents, of which 26 are country documents. Documents were gathered via online internet searches and provided by IDB and AFD specialists and country official interviewees.

The literature review, which included documents from international organizations and platforms (including existing guidance from adaptation planning support organizations), academia, and journal articles, was conducted with the objective of identifying methodologies and approaches for the design of long-term adaptation planning for climate change and gleaning key themes and insights. The literature review was limited to sources published or developed in the last 10 years and written in English or Spanish and used a broad group of search terms which included: “long-term adaptation planning”, “long-term strategies”, “long-term climate pathways”, “transformative pathways”, “decision-making under uncertainty”, “dynamic adaptive policy pathways”, “robust decision-making”, “climate scenario analysis” and more.

In addition to these published documents, the report includes the analysis of 26 country documents from various LAC countries; these include National Adaptation Plans, NDCs, national development strategies, and territorial strategies.

The majority of the non-regional reviewed documents were global in scope, but many included case studies in Oceania, Southeast Asia, and Europe. Frequently cited countries in these regions include Australia, Indonesia, Germany, the Netherlands, and Portugal. A number of documents also had a more specific geographic focus, with eight of the reviewed documents relating to Latin America and the Caribbean, and five additional documents pertaining to LDCs and SIDs.

Each document was reviewed carefully, and key information was added to an Excel matrix to collate information on the approaches used or on-going efforts towards long-term adaptation planning. In this matrix, authors inserted an abstract, indicated the country or region covered by the document, notes on the key long-term planning elements, policy frameworks (laws and regulations), coordination mechanisms, information and tools, relevant text citation(s), additional sources to review, and other inputs. The reviewed documents were grouped into five broad categories: existing guidance on how to conduct adaptation planning, documents or articles discussing enabling factors, uncertainty management, and national studies, plans and strategies involving adaptation planning. Of the 36 documents reviewed, the vast majority fell into the existing guidance or design approaches category, with a smaller number grouped in enabling environment or uncertainty (in the coming weeks, the authors will review more documents on the topic of decision-making under uncertainty).

Bilateral and Group Interviews

With support from IDB and AFD, WRI staff conducted two rounds of semi-structured interviews in May, August and September of 2021 to dive deeper into the long-term adaptation planning processes in the selected eight countries. Contacts at various ministries were primarily gathered via IDB, AFD, and WRI's networks. In the first round of interviews with IDB and AFD country and regional specialists, eight bilateral and group interviews took place (one for each of the eight selected countries). The second round of interviews invited country officials, regional adaptation specialists, and separate country phone calls were held with Costa Rica, Mexico, Colombia, Barbados and Jamaica.

Virtual Workshop

To share preliminary results and more fully engage countries in this ongoing research, WRI, IDB and AFD conducted a three-hour virtual workshop on August 30th, 2021. Key staff of relevant ministries (Environment, Finance, Planning, Sustainable Development, Defense, etc.) and other actors involved in the design and implementation of long-term adaptation planning and strategies in LAC countries participated. This interactive workshop presented participants with the opportunity to hear and learn from what their counterparts are doing in other countries and share their own stories. Over 60 stakeholders from Argentina, Colombia, Costa Rica, Guatemala, Mexico and Uruguay were invited and many shared the invitation with colleagues at other ministries and in other countries. A total of 49 ministry and multilateral officials, representing 12 countries, attended from across the region. The workshop was conducted in Spanish and included representatives from the following countries: Argentina, Colombia, Costa Rica, Cuba, the Dominican Republic, Guatemala, Honduras, Mexico, Panamá, Paraguay, Peru and Uruguay. A representative from the Independent Alliance of Latin America and the Caribbean (AILAC) platform also participated and experts from AFD, GIZ, IDC and Organization for Eastern Caribbean States (OECS) also joined.

Smaller, English-facing sessions covering the topics were organized for country officials and stakeholders from Barbados and Jamaica, who had better availability for engagement in September.

Limitations of the Methodology

The deeper dive – through additional country document review and interviews – into individual LAC countries' long-term planning processes was primarily limited to eight out of 30+ in the region. This limitation is a result of the limited scope and human resources to research all countries in LAC.
Another limitation of this report is that some LTAP processes are still underway, for which information is limited or not publicly available.

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