



GLOBAL
CENTER ON
ADAPTATION



Rijkswaterstaat
Ministry of Infrastructure
and Water Management

Strategy and Planning to Redouble Adaptation in Small Island Developing States (SIDS): A Review

Conference Version

KEY MESSAGES

- **Small Island Developing States (SIDS) have made good progress in developing national strategies** for climate change adaptation embedded in their Nationally Determined Contributions (NDCs), National Adaptation Plans (NAPs), and Adaptation Communications—underscoring their commitment to global climate action in response to the climate crisis and as per the Paris Agreement. All countries have submitted at least one version of an NDC. Ten have submitted NAPs.
- There is breadth and depth to these strategic adaptation documents, and the quality of the enabling environment to support adaptation investments varies across three regions: the Caribbean; the Pacific; and the African, Indian Ocean, and South China Sea (AIS) SIDS. **Of the 35 countries assessed, about 60 percent have a good or better environment for adaptation investments.**
- **Five SIDS have successfully established essential strategic frameworks for effective adaptation initiatives** with: clear institutional mandates; identified priority sectors; estimations of adaptation costs; and clear adaptation objectives. These countries are ready to efficiently absorb financial resources and execute large-scale adaptation action. An additional nine island nations show advanced levels of readiness. These countries possess strong strategic frameworks, however, further refinement is required to attain comparable levels of preparedness. There are enough good examples of best practices in each region to support every country in upgrading their adaptation strategies and planning.
- **More work needs to be done to assess adaptation requirements of key economic sectors and calculate their financing needs. A total of 25 SIDS have not undertaken this calculation.** Of the ten that have, few provided details of the specific finance needed per goal or sector, and two provided outdated estimates based on documents earlier than 2015.
- **There is a need to set up clear institutional arrangements, for coordinating adaptation action,** that include multiple levels of government. Almost half of the Small Island Developing States analyzed have not shown evidence of robust institutional multi-sectoral and multi-level governance arrangements.
- **SIDS have made commendable progress in aligning disaster risk reduction (DRR) and loss and damage (L&D) agendas with their adaptation commitments.** However, there remains a substantial opportunity for further advancement. Strengthening the integration of disaster preparedness early warning systems (EWS) across sectors, incorporating L&D targets into adaptation plans, and adopting a holistic approach encompassing all phases of disaster management—prevention, response, and post-disaster recovery—are pivotal steps toward building a robust, systematic response to climate shocks.
- **This report offers seven key recommendations:**
 1. Enhance institutional arrangements for robust coordination and partnership capacity;
 2. Strengthen monitoring and evaluation (M&E) systems for effective and transparent tracking;
 3. Quantify adaptation cost and need estimates for effective planning to gain greater access to adaptation financing;
 4. Strengthen considerations of all stages of disaster management—prevention, response, and post-disaster recovery—for a systematic response to climate shocks;
 5. Ensure greater inclusion of Ocean and Coastal Zones—in relation to human settlements and tourism—to increase coastal resilience;
 6. Invest in modernizing national data infrastructure and human resources for improved data access and management, and;
 7. Adopt a ‘Community to Cabinet’ approach.

ACRONYMS

AIS African, Indian Ocean, and South China Sea	LDCs Least Developed Countries
CCA climate change adaptation	LMMA locally managed marine area
CCCCC Caribbean Community Climate Change Centre	LTS Long-Term Strategy
CCORAL Caribbean Climate Online Risk and Adaptation Tool	M&E monitoring and evaluation
CCDA Climate Change and Development Authority	MRV monitoring, reporting, and verification
CCDR Country Climate and Development Report	NAP National Adaptation Plans
CCDRR Climate Change and Disaster Risk Reduction	NAPA National Adaptation Programmes of Action
CCMA Climate Change Management Act	Nbs nature-based solutions
CDM Comprehensive Disaster Management	NDA National Designated Authority
CMP Coastal Management Plan	NDC Nationally Determined Contribution
COP Conference of the Parties	NDCP Nationally Determined Contributions Partnership
CRM Climate Risk Management	NDMF National Disaster Management Framework
DRM disaster risk management	ND-GAIN Notre Dame Global Adaptation Initiative
DRR disaster risk reduction	NSDP National Sustainable Development Plan
EbA Ecosystem based Adaption	PFM Public Finance Management
EEZ exclusive economic zones	PNG Papua New Guinea
EWS early warning system	R2R Ridge to Reef
GCA Global Center on Adaptation	RWH rainwater harvesting
GCF Green Climate Fund	SDGs Sustainable Development Goals
GDP gross domestic product	SIDS Small Island Developing States
GHG greenhouse gas	SLR sea-level rise
HAB Harmful Algal Bloom	SPREP Secretariat for the Pacific Regional Environment Programme
ICZM Integrated Coastal Zone Management	SSA Sub-Saharan Africa
IFC International Finance Corporation	SSP Shared Socioeconomic Pathway
IMF International Monetary Fund	UNDP United Nations Development Programme
INDC Intended Nationally Determined Contributions	UNDRR United Nations Office for Disaster Risk Reduction
IT information technology	UNFCCC United Nations Framework Convention on Climate Change
IUU Illegal, Unreported and Unregulated	WMO World Meteorological Organization
IWRM Integrated Water Resources Management	
KPI Key Performance Indicators	
L&D loss and damage	

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EXECUTIVE SUMMARY

Ramping up climate finance flows for adaptation is critical to addressing the irreversible impacts of climate change, but this alone will not be enough to protect the continent. Having a clear set of priorities, with institutions that have the capacity to plan properly and take adaptation actions at scale, is equally important.¹

Planning is crucial when making strategic choices for policies and programs for climate change adaptation, particularly in the face of constrained budgets. Climate change is a complex and multifaceted challenge that affects various sectors and all of society. Developing effective adaptation strategies requires careful consideration of these interconnections and potential trade-offs. Adaptation action, likewise, involves multiple levels of government and stakeholder engagement. Planning provides a structured approach to ensure that different policies are consistent and complementary, avoiding conflicts or duplication of efforts and ensuring coordination among actors.

For these reasons, the Global Center on Adaptation (GCA) completed a thorough review of all the national strategic adaptation documents prepared by governments of Small Island Developing States (SIDS) across three regions: the Caribbean; the Pacific; and the African, Indian Ocean, and South China Sea (AIS) (for country groupings, see Annex, Table A.1). To assess the status of the strategic adaptation plans, a methodological framework was developed, focusing on five key indicators:

1. Institutional arrangements
2. Development of sectoral plans
3. Estimates of finance needs
4. Integration of adaptation with disaster risk reduction efforts
5. Monitoring and evaluation of adaptation goals.

The subsequent analysis of the status of strategic adaptation plans involved a critical review of key UNFCCC-led instruments, including Nationally Determined Contributions (NDCs), National Adaptation Plans (NAPs), Long-Term Strategies (LTSs), and Adaptation Communications. These are crucial strategic adaptation documents emerging from the Paris Climate Agreement. The objective of the analysis is to provide a detailed examination of the main characteristics of these strategic adaptation plans, including their depth, coverage, and the extent to which they demonstrate a supportive environment (comprising policies, institutions, and programs) for implementing critical adaptation programs at scale in each country.

Our framework was first applied to evaluate the body of strategic adaptation documents in 53 African countries as a contribution to the 2023 African Adaptation Summit in Nairobi. Results are presented in [Strategy and Planning to Redouble Adaptation in Africa: A Review](#).¹ Subsequently, this framework was applied to 35 Small Island Developing States, extending the analysis to include Adaptation Communications and strategic adaptation documents mentioned in the NDCs and NAPs. SIDS falling within the World Bank's classification of upper-middle- to low-income countries were included in the analysis.

This executive summary first presents an overview of the status of strategic adaptation document submissions across SIDS and the overall level of environments for adaptation investments. The following section unpacks the results per indicator with good country examples provided for each of the main findings. It then discusses the level of integration of disaster risk reduction and loss and damage within the adaptation plans, as well as the priority sectors for adaptation most frequently mentioned across

the body of strategic adaptation documents. Gaps in sector prioritization are also provided, offering opportunities for areas in which plans can be improved for greater investment and implementation readiness. Finally, the seven main recommendations stemming from this analysis are presented.

How Prepared are Small Island States When It Comes to Adaptation Planning?

Small Island Developing States have made good progress in developing national strategies for adaptation embedded in their Nationally Determined Contributions (NDCs), National Adaptation Plans (NAPs), and National Adaptation Communications. As of January 2024, all 35 SIDS considered in this analysis had submitted at least the first version of their NDC, underscoring their commitment to global climate action in response to the climate crisis and as per the Paris Agreement. Ten had submitted a NAP and eight an Adaptation Communication.

The breadth and depth of these strategic documents, and the quality of the enabling environment to support adaptation investments, varies. Of the 35 SIDS assessed, about 60 percent have a good or better environment for adaptation investments. Furthermore, five out of 35 SIDS included in the study can be classified as having best practices, including: clear institutional mandates; identified priority sectors; estimated adaptation costs; indicative timelines; and specific adaptation goals. These countries are ready to absorb financing and implement adaptation programs at scale. Many other SIDS have good practices in some of the above elements. There are enough good examples of best practices in each region to support every country in upgrading their adaptation strategies and planning.

Unpacking the Environment for Adaptation Investments in Strategic Planning Documents

The “Institutional Arrangements for Adaptation” chapter in the GCA’s 2022 State and Trends in Adaptation report and later “State and Trends in Adaptation 2023” report gave an overview

of the importance of setting up an institutional framework for climate governance to plan, legislate, and manage the implementation of adaptation actions in a country. Despite significant progress in institutional development, just over half of Small Island Developing States have a mature institutional framework for climate adaptation action that involves other ministries and branches of government. Regionally, evidence of strong institutional arrangements can be seen in 60 percent of Caribbean countries, followed by 57 percent of AIS countries, and 46 percent of Pacific countries.

Papua New Guinea (PNG) presents a great example of a strong institutional framework, incorporating multiple levels of governance. In PNG, the Climate Change Management Act 2016 (CCMA) serves as the principal regulatory framework for climate action. It mandates sectoral entities to integrate adaptation into planning and budgeting through climate-compatible action plans. Under the CCMA, the Climate Change and Development Authority (CCDA) coordinates climate policies and promotes climate-compatible growth. Several key departments and national agencies collaborate with the CCDA to implement the NAP across mandated sectors. At the subnational level, five-year development plans are the primary legal instruments that help to promote the integration and coordination of climate change initiatives into development objectives and projects.

Our analysis revealed that countries need to outline their priority sectors more clearly in their strategic adaptation documents. Among the 35 analyzed SIDS with identified priority sectors in their strategic adaptation documents, only 13 provide measurable goals to be achieved within their respective sectors. By prioritizing vulnerable sectors, SIDS can develop targeted adaptation strategies and measures that address specific vulnerabilities. Such tailored approaches ensure that adaptation investments are effectively utilized, maximizing their impact, and promoting resilience in the areas that need it the most. Well-developed adaptation sectoral goals, which

include financial estimates for implementing adaptation measures, provide a clear roadmap for action and effective utilization of resources.

The Dominican Republic is an example of a country with well-defined priority sectors and goals that are time-bound, demonstrate ownership, and include financial requirements. The country has a list of the adaptation initiatives in process or to be carried out at the national and regional level, providing the progress status, the institution supporting the efforts, and a small description of its activities, dividing them by type (project, technical support, and study). Furthermore, the country estimates that an upward investment is required to carry out their NDC adaptation component of about US\$9 billion.

Having a comprehensive monitoring and evaluation (M&E) system for adaptation in place is critical for measuring progress towards adaptation goals. Establishing and communicating indicators to measure the success of adaptation efforts promotes transparency, minimizes potential bias, and ensures a more inclusive and balanced approach to assessing and reporting on climate adaptation efforts. Despite this, just 22 SIDS across the three regions have either signalled their intent to develop an M&E system or have not provided evidence of initiating the process at all. Seven countries in the Caribbean region and two in the Pacific have communicated a basic plan for establishing an M&E framework in the future. Greater investment into developing M&E systems across SIDS is needed.

While progress in establishing M&E systems for adaptation remains ongoing, notable examples of development should be highlighted. Dominica, for example, has adopted a targeted strategy by instituting an M&E system specifically tailored to the agricultural sector. This focused approach serves as a valuable mechanism for enhancing understanding and prioritizing adaptation actions within this critical sector. The Bahamas indicates progress by assigning specific roles within its institutional framework for the implementation of forthcoming monitoring and evaluation

systems. PNG, Suriname, Palau, and Grenada communicate notably detailed plans inclusive of indicators for measuring the progress of each goal in their strategic adaptation documents.

The inclusion of financial needs in NDCs and NAPs allows countries to strategically plan and prioritize their adaptation actions. This information is also crucial for attracting support and mobilizing resources from international donors, development agencies, and financial institutions. In our analysis, ten SIDS excelled in providing detailed information regarding the financial resources needed to implement their specific adaptation goals, with a good balance between regions. Grenada's NAP sets clear adaptation goals for all sectors with defined timelines and budget requirements.

Linking Adaptation with Disaster Risk Reduction and Loss and Damage

Climate and disaster risks are growing faster than our collective efforts to build resilience. The consequences of not anticipating, reducing, and managing disaster risks before they manifest as shocks can be dire for societies, livelihoods, and the ecosystems on which they depend. The climate change adaptation (CCA) and disaster risk reduction (DRR) agendas overlap in several ways. Risk reduction cannot occur without the use of climate data; equally, successful CCA depends on risk reduction. For this reason, it is crucial for countries to integrate DRR into their adaptation planning documents. Combining resources and efforts, rather than addressing disasters and climate change separately, can lead to greater efficiency and impact.

Notably, 31 SIDS in the study had tangible links between their DRR initiatives and their adaptation strategies—representing 100, 93, and 76 percent of SIDS in the regions of African, Indian Ocean, and South China Sea (AIS), the Caribbean, and the Pacific, respectively. Of these, 19 communicated DRR as a priority sector itself, and eight identified integrated DRR adaptation measures or synergetic goals within priority sectors.

Despite great strides made by SIDS in integrating DRR considerations within their adaptation plans, more can be done to build robust multi-hazard and multi-sector risk governance. Many SIDS stated a need for strengthening capacity and tools provided to local, provincial, and national authorities. Further, measures for strengthening disaster preparedness early warning systems within sectors to ensure timely responses to climate shocks, such as for drought, coastal and inland flooding, wildfires, was not mentioned as frequently as needed. Finally, many strategic adaptation documents did not include all of the three stages of disasters: prevention (i.e., early warning systems), disaster (i.e., evacuation and refuge plans), and post-disaster recovery (i.e., insurance and basic relief support).

Small Island Developing States have been at the forefront of climate negotiations to advance finance flows to the regions. As of January 2024, 23 SIDS have mentioned the importance of loss and damage (L&D) considerations within their strategic adaptation documentation, underscoring the need for international climate action in response to the climate crisis. Many countries developed an L&D subsection within their adaptation documentation with clear goals and finance cost estimates. For example, Haiti provides a general estimate of the finance needed for L&D: US\$4.98 billion (90 percent conditional and 10 percent to be financed by the public treasury), and St. Kitts and Nevis provided an overview of economic and non-economic L&D due to extreme events.

Prioritizing Sectors and Themes

The four most frequently identified prioritized sectors for adaptation across strategic adaptation documents of Small Island Developing States are Agriculture and Livestock (31), Water (27), Infrastructure (27), and Health (26)—with Forestry and Biodiversity (25) as a close fifth. Many elements within these plans stand out as notably proactive and innovative adaptation action, showcasing the commitment and drive from SIDS towards developing pathways for climate-resilient economic growth.

Belize, for instance, included DRR considerations in the Agriculture sector by committing to develop an enhanced early warning system for drought and extreme weather events to support farmers in planning for, and responding to, the impacts of climate change by 2025. The Federate States of Micronesia aims to climate-proof all major island ring roads, airport access roads, and arterial roads by 2030, to enhance the infrastructure sector's resilience to climate change. Cape Verde is committed to improving the infiltration and replenishment of water resources through nature-based solutions. Finally, Jamaica aims to retrofit health facilities to withstand climate shocks. All these actions, and more, hold potential to mitigate or alleviate climate risks and associated adverse impacts on assets, economic activities, communities, and ecosystems.

Some important economic sectors that are vulnerable to climate change, however, have not yet received sufficient attention. Eleven SIDS did not identify Oceans and Coastal Zones as a priority sector for adaptation in their NDCs and/or NAPs. Further, only 16 (less than half) outlined a sectoral plan for human settlements, while 20 (just over half), provided a plan for adaptation in the tourism sector. Given the importance of coastal resilience for SIDS, every island state must prioritize the development and communication of a plan for coastal protection. Human settlements and tourism sectoral plans are not only underrepresented within national strategic adaptation plans, but also need greater coordination and integration with coastal zone planning.

Our analysis additionally revealed thematic gaps across the body of strategic adaptation documents for SIDS. Firstly, all but four SIDS mention a lack of funding as a barrier to carrying out adaptation actions. However, only ten SIDS out of 35 quantified their adaptation cost and need estimates. It is crucial that countries develop detailed cost estimates for financing adaptation actions and establish institutional arrangements capable of leading and implementing these actions effectively. Notably, seven SIDS have established finance

as a priority sector for adaptation, in which a plan for mobilizing finance is outlined. Grenada aims to secure external climate finance support by allocating an estimated budget of US\$1.4 million for adaptation activities within its finance sector. Vanuatu also provides finance needs per adaptation action per sector—showcasing its commitment to attracting more international adaptation finance. These countries are great examples of proactive planning to enable effectively accessing and utilizing climate funds.

Secondly, a lack of climate information poses a significant barrier to effective adaptation planning for SIDS. More needs to be done to strengthen climate data capture and management, and enhance the integration of this information into adaptation planning.

Thirdly, an inclusive approach—geographically and socially—is often missing in relation to adaptation planning and action. It is important to focus on coastal areas while also stepping back to see how agricultural practices, human settlements, and land use further away from the coast are impacting communities and resources closer to the ocean. At the same time, there is a need for greater social inclusion. Small island nations already set a global example of drawing upon indigenous knowledge and fostering strong social networks to adapt to changing climate conditions; this needs to be incorporated more formally into planning, implementation, and M&E of adaptation actions.

Recommendations

This report offers the following main recommendations:

Enhance institutional arrangements for robust coordination and partnership capacity

The inclusion of multiple levels of government (national to local) and strengthened regional partnerships between Small Island Developing States is crucial for developing robust institutional arrangements for coordinated and effective adaptation planning and implementation. Investing and developing

institutional arrangements that do not only rely on the Ministry of Environment but also include crucial ministries like Finance and Planning, which play a central role in the strategic directions and priorities for adaptation action at scale, is necessary to attract and disburse adaptation finance from the international community.

Strengthen monitoring and evaluation (M&E) systems for effective and transparent tracking

Monitoring and evaluation systems for adaptation policies and priorities in SIDS need strengthening. Regional cooperation can: help SIDS better understand climate risks and vulnerabilities; promote knowledge and data sharing; and facilitate sharing of best practices for establishing systems linked to national institutions and processes. Developing and communicating indicators to measure the success of adaptation efforts can promote transparency and a more inclusive and balanced approach to assessing and reporting on climate adaptation efforts.

Quantify adaptation cost and need estimates for effective planning to gain greater access to adaptation financing

Adaptation plans require greater specificity of finance estimates, needs, and plans in order to secure international funding. It is crucial for SIDS to develop detailed cost estimates for financing adaptation actions and establish institutional arrangements capable of leading and implementing these actions effectively.

Strengthen considerations of all stages of disaster management—prevention, response, and post-disaster recovery—for a systematic response to climate shocks

More needs to be done to build robust multi-hazard and multi-sector risk governance. Training and awareness raising will help strengthen the capacity and tools provided to local, provincial, and national authorities. It is vital that SIDS strengthen early warning systems within sectors to ensure timely responses to

climate shocks such as drought, coastal and inland flooding, as well as wildfires. Finally, considering all of the three stages of disasters is essential for SIDS: prevention (i.e., early warning systems), disaster (i.e., evacuation and refuge plans), and post-disaster recovery phases (i.e., insurance and basic relief support).

Ensure greater inclusion of Ocean and Coastal Zones—in relation to human settlements and tourism—to increase coastal resilience

Given the importance of coastal resilience for SIDS, every island state must prioritize the development and communication of a plan for coastal protection and should ensure coordination and integration with other key economic sectors, specifically human settlements and tourism.

Invest in modernizing national data infrastructure and human resources for improved data access and management

More needs to be done to address the gap in vulnerability assessments in certain sectors, facilitate knowledge brokering across sectors, and to connect the results from local or sectoral analysis to national-level adaptation planning processes. There is an opportunity for SIDS to enhance the integration of data into adaptation planning through investment into modernizing national data infrastructure. Investing in institutional and human resources for collecting quality, accessible, timely, and reliable disaggregated data should be of high priority for SIDS. This will help to enable evidence-based policy decisions, measure progress, and improve access to climate adaptation finance.

Adopt a 'Community to Cabinet' approach

Drawing on multiple knowledge systems to co-design and co-produce adaptation action can lead to more effective and sustainable adaptation responses. Strengthening the cooperation between communities and governments is essential for developing and implementing strategies to respond to extreme events. Island nations should adopt inclusive approaches, such as Ridge to Reef and Community to Cabinet. It is important to integrate local knowledge by including stakeholders in the planning, implementation, and M&E of adaptation actions. Additionally, SIDS should consider increasing investments in the education and skills of young people, enabling them to pursue economic and productive opportunities. This includes support for youth-driven startups and entrepreneurship, including providing financial backing, mentorship, and other capacity building and training initiatives.

1. INTRODUCTION

Small Island Developing States (SIDS) are among the least responsible for climate change, yet as a group they are likely to experience some of its most severe impacts. In some cases, they may even become uninhabitable.²

The SIDS are a group of island nations—home to over 65 million people.³ Most of them are located across three regions: the Caribbean; the Pacific; and the African, Indian Ocean, and South China Sea (AIS). SIDS are hugely diverse: in geographical features, territorial areas, social and cultural structures, governance systems, and level of economic development. With such a large geographical spread, the SIDS also experience regional differences in exposure to, and risks of, climate change impacts.

Small Island Developing States are ocean states. They comprise 16 percent of total global exclusive economic zones (EEZs) and, on average, control an ocean area 28-times the size of their land mass. SIDS are home to 40 percent of the world's coral reefs and more than 20 percent of the world's biodiversity.⁴ Many island nations—such as the Maldives—have mostly low-lying land areas, while others—such as Haiti—have varied terrain, including mountainous regions.⁵ Marine and terrestrial biodiversity is central to the livelihoods, culture, and identity of small island populations which are especially dependent on maritime resources for food security, economic prosperity, and social resilience.

SIDS are exposed to significantly higher precipitation variability than other countries. Erratic precipitation, floods and drought, increasingly frequent extreme weather phenomena, and events such as tropical cyclones, storm surges, and hurricanes, have substantial repercussions on natural and human systems—some of which include catastrophic damage.⁶ Annually, on average, natural disasters can cost SIDS up to 8 percent of their entire GDP.⁷

The economic impacts of disasters, however, vary considerably for individual countries. In 2010, the damage from Hurricane Tomas accounted for 43.4 percent of Saint Lucia's GDP. In 2004, Grenada was hit by Hurricane Ivan, which caused 39 deaths, the destruction of 90 percent of buildings, and resulted in costs equivalent to 200 percent of the country's GDP.⁸ Catastrophic damages caused by Hurricane Maria in 2017 amounted to 226 percent of Dominica's GDP.⁹ Diminishing freshwater resources, desertification, land degradation, coastal erosion, coral bleaching, and invasive species are also widely experienced.^{10,11} For island nations whose land lies only five meters or less above sea level, projected sea-level rises (SLR) are a direct threat to their existence.¹²

There are certain shared characteristics that underscore SIDS overall vulnerability to climate change impacts. Some of the contributing challenges include small populations and generally high population densities; insufficient technical and institutional capacities; limited natural resources, many of which are already stressed from unsustainable human activity; economies that are heavily dependent on the natural environment; high dependence on external markets; populations, socio-economic activities, and infrastructure often being concentrated along coastal zones; remoteness from international markets—affecting competitiveness in trade; limited economies of scale; large dependency on water resources for freshwater supply that are sensitive to sea-level changes; and limited physical size effectively eliminating some adaptation options.^{13,14} Many island nations are also contending with huge barriers in accessing international financial resources, and higher income SIDS face additional hurdles to secure international financial assistance due to prioritization of funding mechanisms to lower-income countries. The vulnerability of SIDS has been further

exacerbated by the effects of COVID-19 and a pressing debt crisis.

Despite these barriers, SIDS demonstrate remarkable resilience and innovation, drawing upon indigenous knowledge and fostering strong social networks to adapt to changing climate conditions. SIDS also display high-level leadership and a commitment to accelerate national climate action to increase climate resilience. Governments and leaders hold a strong presence within sustainable development negotiations and processes, and have continuously advocated for action and funding to address loss and damages caused by climate change.

It is imperative that the international community recognize the disproportionate impact of climate change on SIDS. Island nations need urgent access to external financial support and capacity-building assistance to bolster resilience across social, economic, and ecological systems. Regrettably, the existing frameworks for climate and development finance fall short in effectively, equitably, and comprehensively meeting the complex needs of SIDS at the necessary scale.

2. STRATEGIC ADAPTATION DOCUMENTS

This section provides an overview of the history of strategic adaptation documents, in the context of the Paris Agreement and the Sendai Framework. It then provides a brief overview of institutions and funds that could help/are helping SIDS, as well as a brief history of important conferences and milestones relating to SIDS and adaptation.

2.1 A Brief History of Strategic Adaptation Documents: NDCs, NAPs, and LTSs

The year 2015 marked a historical moment when 196 countries signed the Paris Agreement, with the aim to hold global warming well below 2°C and limit it to 1.5°C above pre-industrial levels. The Paris Agreement also set out a global goal on adaptation—enhancing adaptive capacity, strengthening resilience, and reducing vulnerability to climate change—to contribute to sustainable development and ensure an adequate adaptation response in the context of the global temperature goal.

It is important to note that climate documents were also produced prior to the Paris Agreement. The adoption of the Kyoto Protocol in 1997 was one of the earliest events that set the stage for addressing climate change on a global scale. Recognizing the impacts on Least Developed Countries (LDCs) led to the introduction of the National Adaptation Programmes of Action (NAPA) concept. The formal adoption of the NAPA framework in 2001 during the Seventh Conference of the Parties (COP7) in Marrakech solidified its role as a crucial mechanism to assist vulnerable countries in identifying and prioritizing their adaptation needs. The NAPA continues to play an essential role in supporting LDCs in their efforts to cope with the adverse impacts of climate change and build resilience

for a more sustainable future.

Parallel to the Paris Agreement, the Sendai Framework was adopted in 2015 at the third UN World Conference on Disaster Risk Reduction—with the objective to reduce the risk of anthropogenic and natural hazards, and substantially reducing losses in lives, livelihoods, and health by 2030. The framework presents a universal vision for how societies may collaborate to identify, prevent, and reduce risks before they manifest as shocks or disasters, and to build resilience. The disaster risk reduction (DRR) and climate change adaptation (CCA) agendas overlap in several ways. They both seek to reduce vulnerabilities to hazards and operate in the context of sustainable development and poverty reduction.

2.1.1 Nationally Determined Contributions

Nationally Determined Contributions (NDCs), submitted to the United Nations Framework Climate Change Convention (UNFCCC), are at the center of the Paris Agreement. NDCs embody each country's ambition and goals to reduce its national greenhouse gas emissions and adapt to the impacts of climate change, based on individual national circumstances and development priorities. Together, these documents indicate global progress on the long-term goals of the Paris Agreement.

2.1.2 National Adaptation Plans

The process to formulate and implement National Adaptation Plans (NAPs) was established in 2010 under the UNFCCC. It is the main UNFCCC-led instrument for driving and coordinating national adaptation actions. The NAP process is continuous, progressive, and iterative, following a transparent country-driven,

gender-sensitive, and participatory approach. The NAP facilitates the coordination of national and sectoral adaptation efforts among all actors and stakeholders, as well as the integration of climate change adaptation into relevant policies, programs, and activities. As a plan and document, the NAP (to be produced periodically) is to identify medium- and long-term adaptation needs and to develop and implement prioritized actions to address those needs. As such, NAPs are officially endorsed at the national level.

2.1.3 Long-Term Strategies

LTSs can help countries articulate a national vision for a climate-resilient society and discuss the opportunities for a more sustainable economic growth model that is cleaner, dynamic, and less carbon-intensive. This aligns with Article 4 of the Paris Agreement, which states that “Parties should strive to formulate and communicate long-term low greenhouse gas emission development strategies, mindful of Article 2 considering their common but differentiated responsibilities and respective capabilities, in the light of different national circumstances”.

2.1.4 Adaptation Communications

The overarching objectives of adaptation communications are multifaceted. Firstly, they aim to elevate the visibility and prominence of adaptation efforts, ensuring a balanced emphasis alongside mitigation actions. Secondly, they seek to bolster adaptation actions and support mechanisms for developing countries. Additionally, they serve to contribute valuable insights to the global stocktake process. Finally, they play a crucial role in fostering learning and comprehension regarding adaptation needs and initiatives. As stipulated by the Paris Agreement, adaptation communications can be integrated into or presented alongside other official communications or documents. These may include NAPs, national communications, NDCs, or biennial transparency reports.

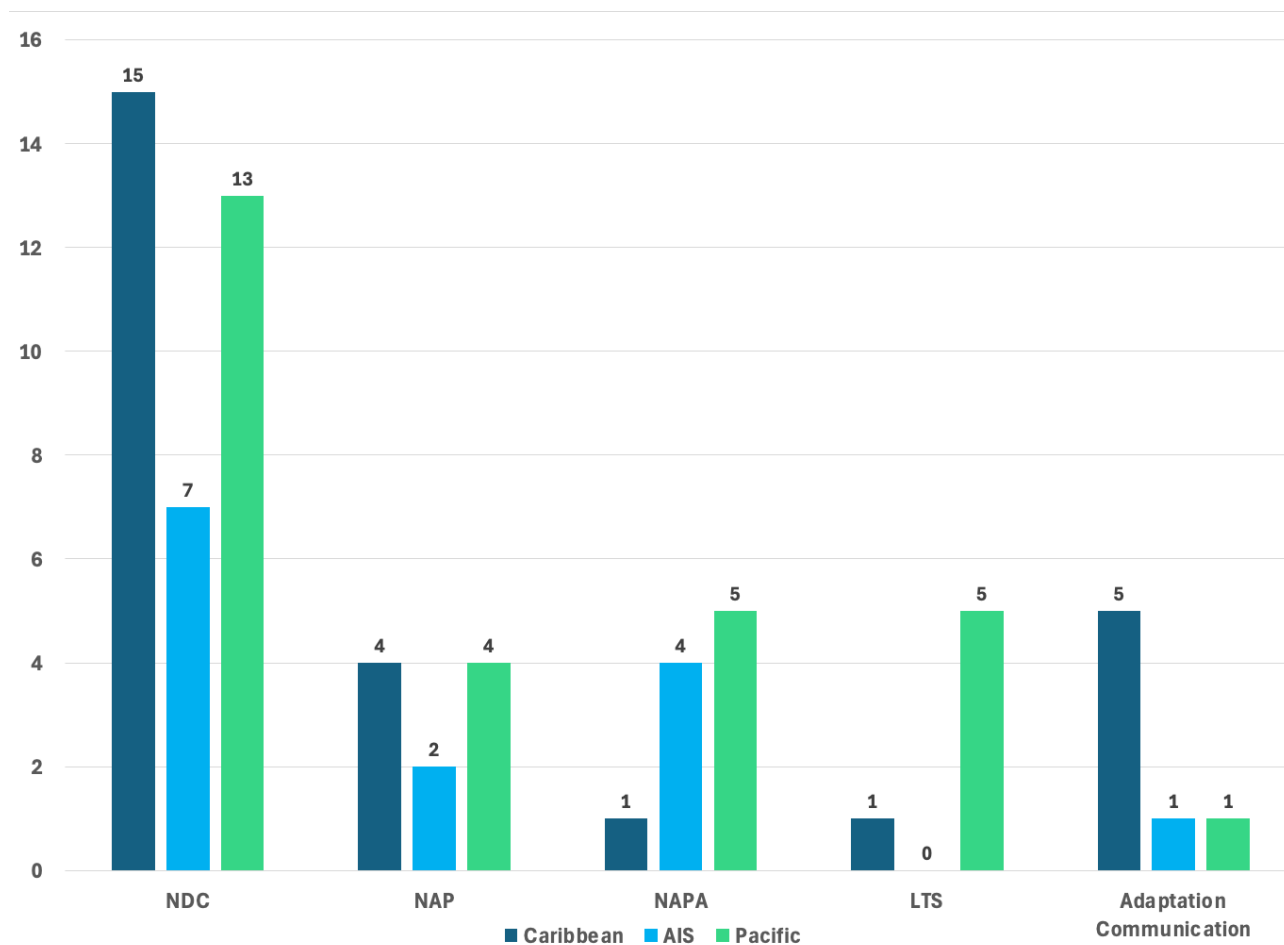
3. CURRENT STATE OF STRATEGIC ADAPTATION PLANS IN SIDS: GCA ANALYSIS

3.1 Regional Coverage

As of January 2024, all 35 SIDS considered in this analysis had submitted at least the first version of their NDC, underscoring the commitment to global climate action in response to the climate crisis and as per the Paris Agreement (Figure 1). For SIDS in the Caribbean, as well as the African, Indian Ocean, and South China Sea (AIS), most of these

submissions were completed in 2021. On the other hand, for the Pacific SIDS, most of these submissions were completed in 2016. Of the 35 NDC submissions, eight are Intended Nationally Determined Contributions (INDC), and 27 are enhanced/updated versions. Out of the eight INDCs, six are from the Pacific, and two are from the Caribbean. Ten SIDS have submitted a NAP and/or a NAPA, seven submitted an Adaptation Communication, and six an LTS.

Figure 1. Number of Strategic Adaptation Documents by Type for each SIDS Region



3.2 Analysis Methodology

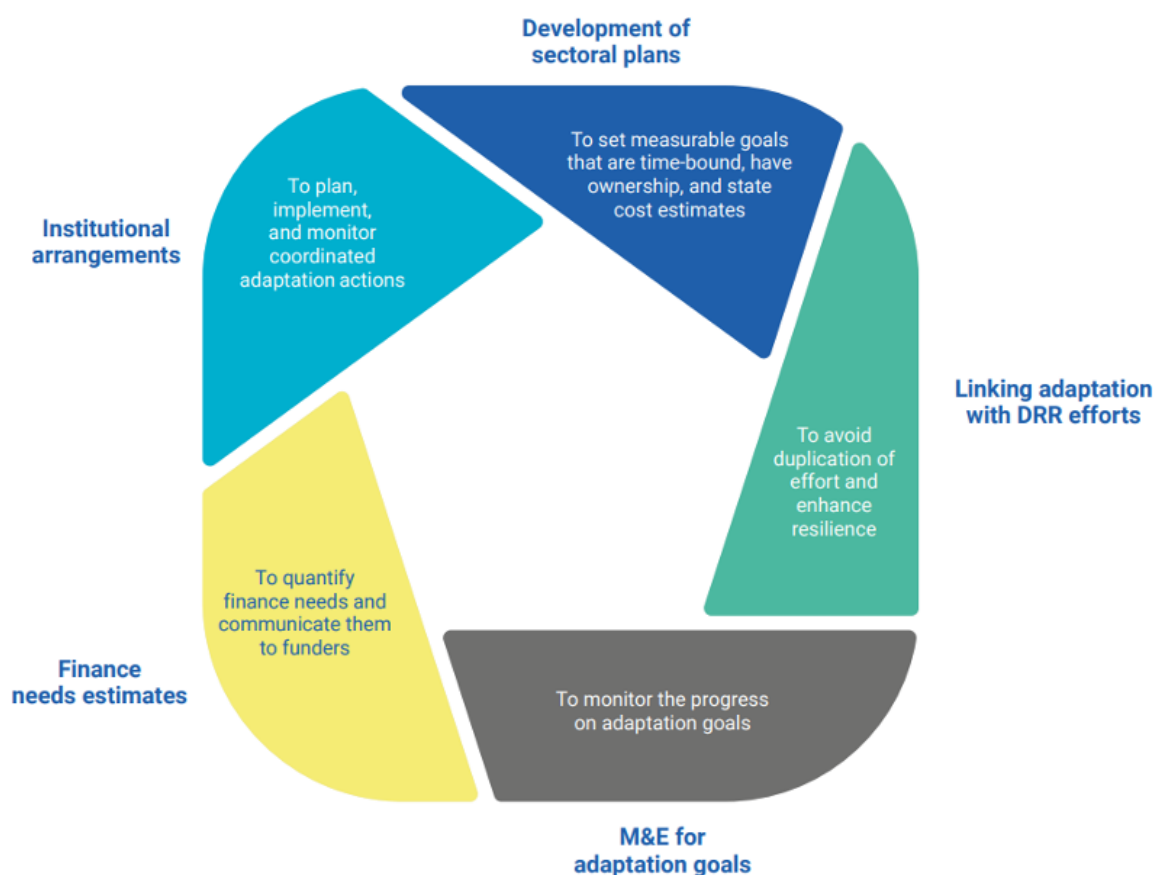
We developed a methodological framework to evaluate strategic adaptation plans, focusing on five key indicators (Figure 2):

1. Institutional arrangements
2. Development of sectoral plans
3. Estimates of finance needs
4. Integration of adaptation with disaster risk reduction efforts
5. Monitoring and evaluation of adaptation goals.

These indicators were chosen following a literature review assessing the effectiveness of strategic adaptation documents in fostering an environment conducive to adaptation measures. Priority areas for governance and planning—essential for creating an effective environment supporting investment readiness—were then identified.

Subsequently, our analysis of the status of strategic adaptation plans involved a critical review of key UNFCCC-led instruments driving and coordinating national climate actions. Specifically, we focused on NAPs, NDCs, LTSs, and Adaptation Communications. This analysis framework was initially employed to assess the status of plans across 53 African countries for the Strategy and Planning to Redouble Adaptation in Africa Report 2023. It has since been updated to evaluate the status of adaptation planning for Small Island Developing States. This analysis covers the strategic adaptation documents of 35 SIDS falling within the World Bank’s classification of upper-middle- and low-income countries (for the list of countries, see Annex, Table A.1). High-income countries were excluded from the analysis to ensure a better assessment of the readiness of the enabling environment for investment across diverse regions.

Figure 2. The Five Indicators of Analysis of SIDS’ NDCs, NAPs, LTSs, and Adaptation Communications



Source: Authors

4. RESULTS

4.1 General Findings

Results of the analysis revealed a wide variation in the level of specificity provided across the

chosen strategic adaptation documents. However, six clusters of SIDS with similar levels of enabling environments for adaptation investment emerged (Table 1).

Table 1. Six-Level Rating Scale of the Enabling Environment for Investments in Strategic Adaptation Documents in SIDS

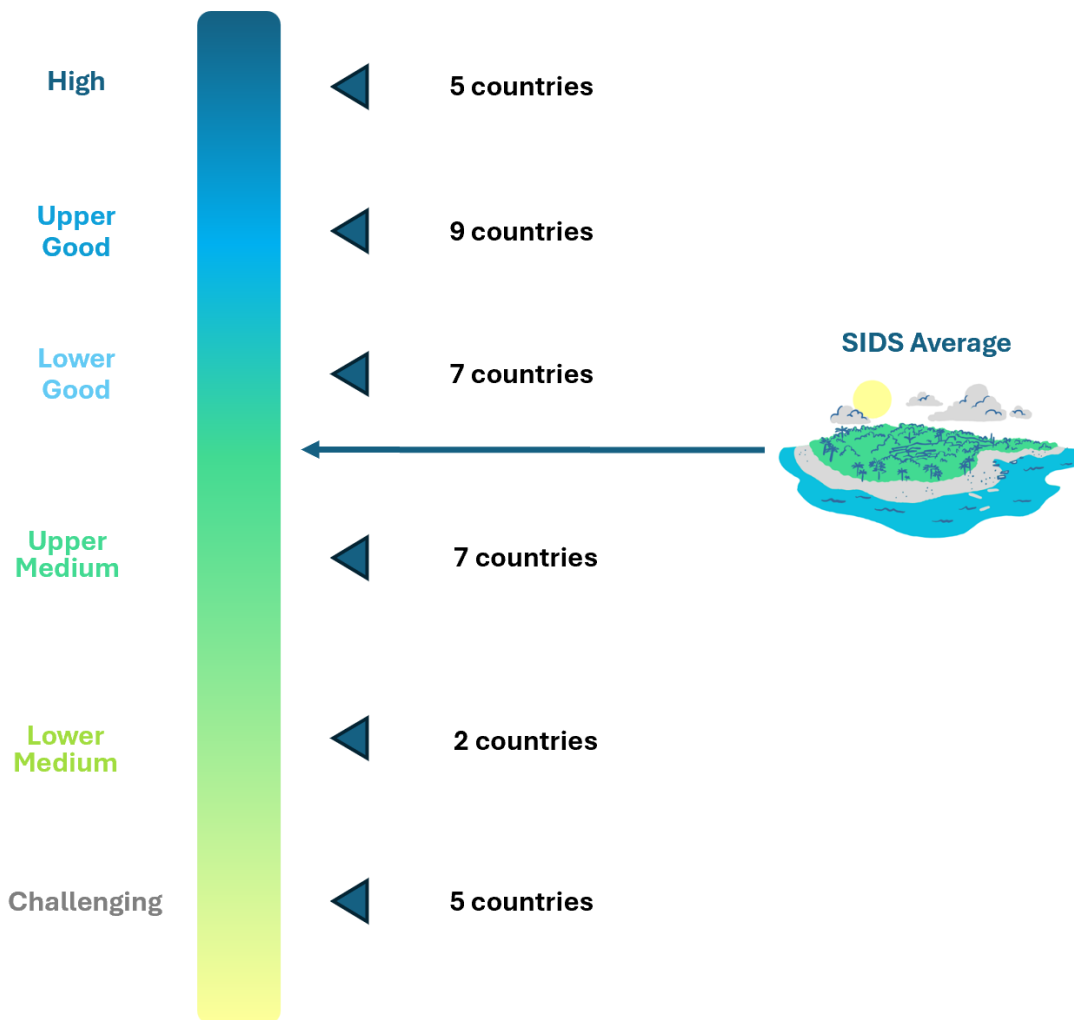
Enabling Environment for Adaptation Investment	Description
High	<ul style="list-style-type: none"> All countries have specialized institutions in place, with all but one setting branches to coordinate the climate agenda. DRR connections have been identified, with some countries making DRR a sector on its own and others identifying DRR measures within other sectors. Priority sectors have been identified, with all countries providing qualitative or quantitative goals and timeframes, as well as calculating the cost of their NDC or NAP adaptation actions. Most countries named their responsible institutions in charge of overseeing their adaptation goals and measures. All countries provided information on developing basic plans to implement a monitoring system for adaptation, with one signaling having a system already in place. Half of the countries calculated the overall conditional finance needed to carry out their adaptation strategic plans. Most countries acknowledge the importance of loss and damage (L&D).
Upper Good	<ul style="list-style-type: none"> All countries but one have specialized institutions with branches in place to coordinate the climate agenda. DRR connections have been mostly identified, with most countries making it a sector on its own and others identifying DRR measures within other sectors. Priority sectors have been identified, with all countries providing qualitative goals and most providing quantitative goals. Most countries provided a timeframe for their sectoral adaptation measures, along with naming the responsible institutions. Few countries calculated the total costs of implementing the NDC or NAP, with only two calculating the conditional adaptation cost of their NDC or NAP measures. Most countries either provided information on developing basic plans to implement their monitoring systems or signaled the intention of developing them, with two countries signaling a system already in place. All countries acknowledge the importance of (L&D).
Lower Good	<ul style="list-style-type: none"> Four countries have at least some assigned specialized institutions or information on specialized institutions with branches in place to coordinate the climate agenda, with two showing no evidence of having any. DRR connections were identified, with some countries making it a sector on its own and others identifying DRR measures within other sectors. Priority sectors have been identified, with most countries providing qualitative goals and few quantitative goals. Few countries provided a timeframe, named the responsible institutions for overseeing their adaptation actions, or calculated the conditional adaptation cost of their NDC or NAP measures. Most countries signaled the intention of developing a monitoring system for adaptation, with one having basic plans to develop one and another signaling to have a system already in place. Half of the countries acknowledge the importance of (L&D).
Upper Medium	<ul style="list-style-type: none"> Half of the countries have specialized institutions with branches in place to coordinate the climate agenda, while the other countries did not provide evidence of having any. Most countries made DRR a sector within adaptation with clear goals. All but one country identified their priority sectors. All countries but two provided qualitative or quantitative goals, but almost none provided timebound goals, had assigned institutions with responsibilities, or estimated finance needs to implement the NDC or NAP. Most countries signaled an intention to develop a monitoring system for adaptation and the need for finance to carry out their adaptation goals. Most countries acknowledge the importance of (L&D).

Lower Medium	<ul style="list-style-type: none"> • One country assigned a specialized institution to coordinate the climate agenda. • One country made DRR a sector within adaptation with clear goals. • Both countries identified priority sectors with qualitative goals that were not timebound, had assigned institutions with responsibilities, or estimated finance needs to implement the NDC or NAP. • One country showed an intention of developing a monitoring system for adaptation. • Both countries signaled a general need for finance. • None of the countries acknowledge the importance of (L&D).
Challenging	<ul style="list-style-type: none"> • Institutional arrangements were generally not in place. • Two countries identified general synergies with DRR. • No sectoral goals were given. • Two countries signaled financial needs. • Only one country signaled the intention of creating a monitoring system for adaptation and acknowledged the importance of (L&D).

The assessment focused on evaluating the enabling environment for adaptation investment in various SIDS. To achieve this, the extent of detail presented in the adaptation plans outlined within a country's climate documents (NDCs, NAPs, LTSSs, and Adaptation Communications),

was scrutinized. Countries were differentiated based on the planning and environment for successful adaptation investment (Table 1). The study's comprehensive evaluation of 35 SIDS' readiness for climate adaptation investment has yielded valuable insights.

Figure 3. SIDS' Level of Enabling Environment for Investment Readiness*



*This showcases the level of enabling environment for adaptation investment that the SIDS reached based on the chosen indicators. On the left, a progress bar is shown indicating the number of countries in each rating category and SIDS average.

Five countries stand out for creating a highly supportive environment that promotes successful adaptation investments (“high”); nine countries are in the “upper good” category in terms of adaptation investment; seven are in the “lower good” category; seven are in the “upper medium” tier; and two fall into the “lower medium” bracket. Notably, five countries face more significant challenges in creating an enabling environment for adaptation investment (“challenging”). On average, SIDS fall between the upper medium and the lower good investment readiness categories (Figure 3).

These findings point to some promising takeaways. Many SIDS show strong potential for successful adaptation investments. They demonstrate a strong commitment to taking ownership of adaptation strategies by having institutional frameworks in place, identifying the connections between DRR and CCA, and establishing clear adaptation goals. However, it is crucial to recognize that many SIDS still need to work on creating stronger qualitative and quantitative goals that are timebound, clearer roles for institutions and actors, and estimating the costs of adaptation goals.

Many SIDS still require concerted efforts in accurately assessing the financial implications of their adaptation objectives and determining the requisite level of conditionality necessary to operationalize their strategic adaptation documents. The establishment of mature and well-developed sectoral goals, inclusive of financial estimates for the implementation of adaptation measures, offers a structured pathway for the efficient allocation of resources. With greater delineation of priorities, it becomes more feasible to discern actionable steps and strategically leverage external support mechanisms for optimal impact.

4.1.1 ND-GAIN Index Scores Analysis

The ND-GAIN Index summarizes a country’s vulnerability to climate change and other global challenges in combination with its readiness to improve resilience. The higher the score is, the less vulnerable a country is to the effects

of climate change and the more ready it is to enhance its resilience.

The ND-GAIN Index¹⁵ is composed of the ND-GAIN vulnerability score, which measures a country’s exposure, sensitivity, and ability to adapt to the negative impacts of climate change (lower scores mean lower vulnerability), and the ND-GAIN readiness score, which is a country’s ability to leverage investments and convert them to adaptation actions considering three components—economic readiness, governance readiness, and social readiness (higher scores mean higher readiness).

For this analysis, the SIDS ND-GAIN vulnerability and readiness scores,¹⁶ coupled with GCA’s investment readiness score, are used to indicate the importance of attracting adaptation finance flows into the continent to reduce vulnerability and increase resilience to climate change impacts. To put the scores into context, for SIDS, the average ND-GAIN vulnerability score is 0.42 for the Caribbean, 0.51 for AIS, and 0.55 for the Pacific, which indicates that all the regions have medium-high to high vulnerability to climate change and other global challenges. On the other hand, the average ND-GAIN readiness score is 0.33 for the Caribbean, 0.38 for AIS, and 0.42 for the Pacific, which indicates that all the regions have low readiness to leverage investments and convert them to adaptation actions.

Based on our analysis, countries highlighted in red (Figure 4a and 4b) indicate both high vulnerability and/or low readiness to the effects of climate change, coupled with a low level of progress in strategic plans for adaptation. These results underscore the critical importance of directing financial resources and investments towards programmatic approaches that build long-term capacity in adaptation, as well as raising awareness to strengthen the status of the strategic planning documents for adaptation that increase investment readiness and lower vulnerability.

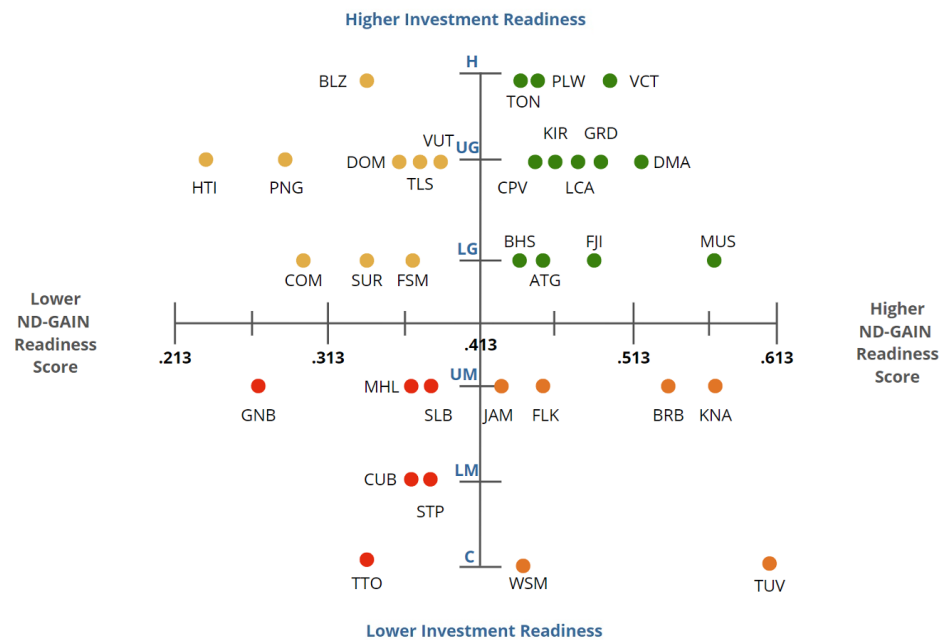
The countries marked in orange, similarly to those in the red category, would benefit from financial support, capacity-building initiatives, and awareness campaigns for adaptation.

However, they may face lower threats due to a higher level of readiness or lower vulnerability to climate change impacts.

Countries highlighted in yellow demonstrate a higher investment readiness, often supported by robust strategic adaptation plans. Despite this readiness, they may still require capacity-building initiatives and awareness programs for adaptation (falling within the upper and lower good categories). Nevertheless, attracting financial resources for adaptation remains crucial to diminish vulnerability and enhance resilience to climate change impacts in these countries.

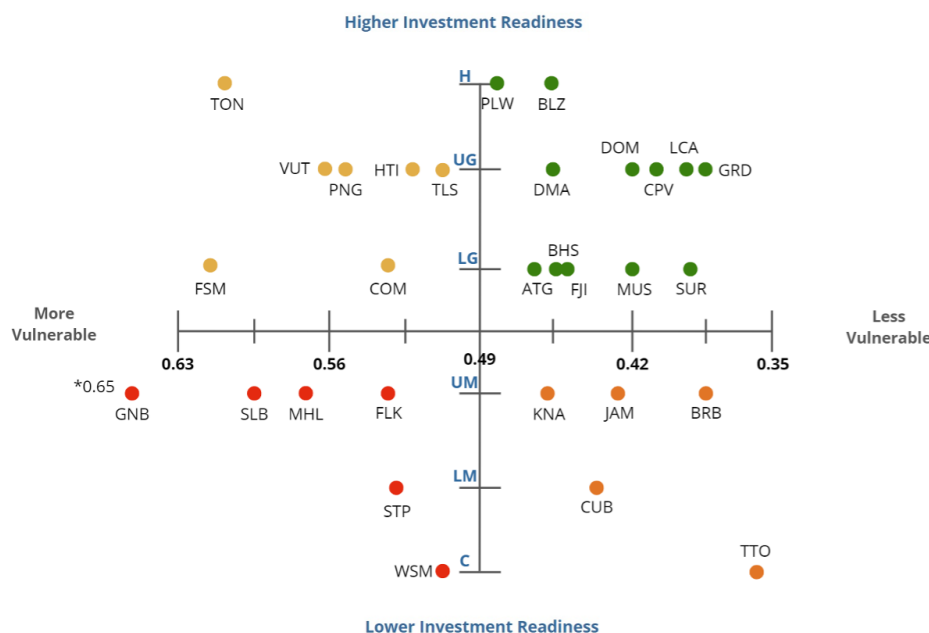
Finally, countries highlighted in green have taken significant strides in their readiness for investment and demonstrate lower vulnerability, along with higher adaptive capacity to the impacts of climate change. However, it is important to note that even these countries exhibit a higher vulnerability and lower readiness compared to the global average. Hence, it remains imperative to channel adaptation finance flows and investment to these nations to increase their resilience and facilitate effective adaptation to climate change through bolstering programmatic approaches that build long-term capacity.

Figure 4a. ND-GAIN Index Readiness Scores by Adaptation Investment Readiness Analysis Categories



Y Axis: In **green**, countries with higher investment and ND-GAIN readiness scores. In **yellow**, countries with higher investment readiness, but lower ND-GAIN readiness score. In **orange**, countries with lower investment readiness, but higher ND-GAIN readiness score. In **red**, countries with low investment readiness and ND-GAIN readiness score. X Axis: Investment readiness categories H= High, UG= Upper Good, LG= Lower Good, UM= Upper Medium, LM= Lower Medium, C= Challenging. The name of the countries is presented in ISO-3 country codes.

Figure 4b. ND-GAIN Vulnerability Scores by Adaptation Investment Readiness Analysis Categories



Y Axis: In **green**, countries with higher investment readiness and lower ND-GAIN vulnerability score. In **yellow**, countries with higher investment readiness, but higher ND-GAIN vulnerability score. In **orange**, countries with lower investment readiness, but lower ND-GAIN vulnerability score. In **red**, countries with low investment readiness and high ND-GAIN vulnerability score. X Axis: Investment readiness categories H= High, UG= Upper Good, LG= Lower Good, UM= Upper Medium, LM= Lower Medium, C= Challenging. The name of the countries is presented in ISO-3 country codes.

4.2 Findings by Indicator

4.2.1 Institutional Arrangements

The “Institutional Arrangements for Adaptation” chapter in the State and Trends in Adaptation 2022 (STA22) and the “Strategy and Planning to Redouble Adaptation in Africa 2023” reports gave an overview of the importance of setting up an institutional framework for climate governance to plan, legislate, and manage the implementation of adaptation actions in a country. Institutional arrangements can support the anticipation and preparation for climate change risks through the implementation of adaptive strategies and measures.

A crucial aspect of adaptation readiness is the presence of a lead ministry or dedicated institution to serve as the driving force behind the country’s adaptation efforts—coordinating and implementing strategies to address climate change impacts. Furthermore, if subsidiary

branches of this primary institution exist, they can provide crucial support. These branches act as key arms of the lead ministry, working in tandem to ensure the smooth execution of adaptation initiatives across various regions. The involvement of other relevant ministries and institutions in the overarching institutional arrangements for climate adaptation is also imperative. Collaborative engagement among ministries—such as those responsible for the environment, agriculture, water resources, finance, and disaster management—enables a comprehensive and coordinated approach to adaptation planning and implementation.

Such measures are crucial because climate adaptation inherently transcends boundaries and cuts across various sectors and areas. Its impact is far-reaching and interconnected, affecting multiple aspects simultaneously. Therefore, to effectively advance climate adaptation and be fully prepared to implement and attract adaptation investment, a country

must possess a mature and comprehensive institutional framework.

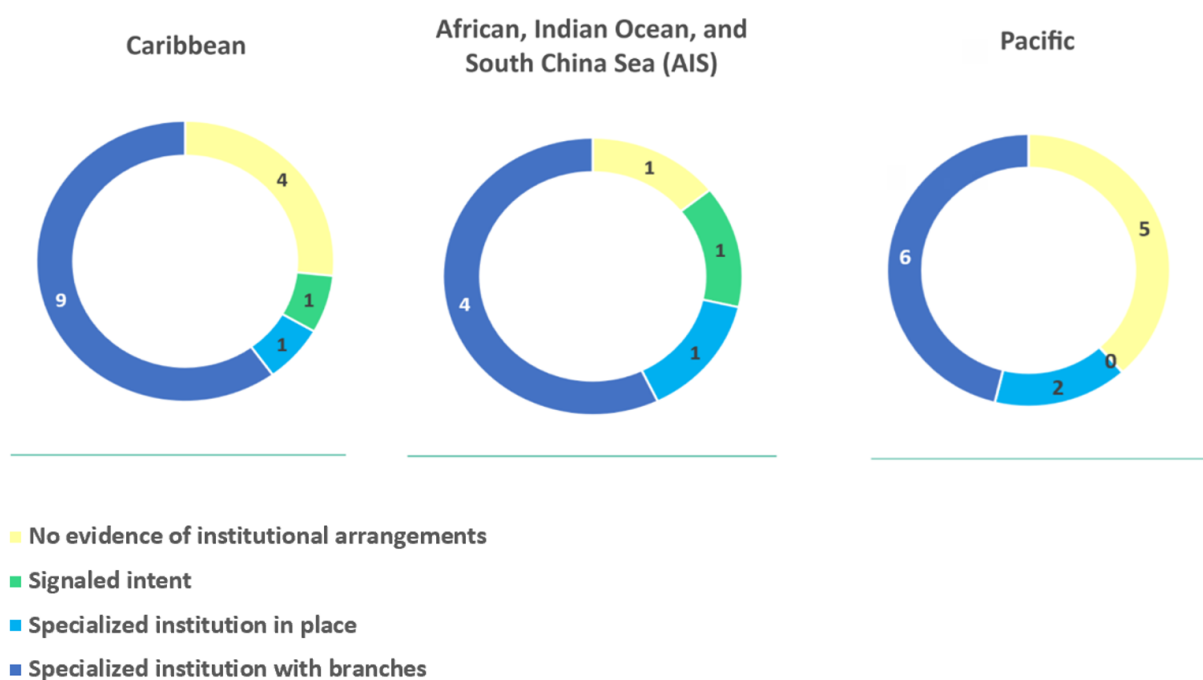
Analysis of Institutional Arrangements

The level of institutional arrangements planned or in place within each country was assessed through their allocation to one of three categories, based on information communicated in their strategic adaptation documents. The first category consisted of countries that have not set up a separate ministry or institution specifically for dealing with climate issues but have indicated efforts underway to establish one. The second covered countries with a dedicated climate-focused institution or ministry up and running. The third focused on countries with a ministry that works alongside other related

ministries and at different levels of government.

Findings indicate that 19 out of the 35 SIDS analyzed (54 percent) have established a mature institutional framework that involves other ministries and branches of government to effectively implement adaptation goals. Additionally, four countries have set up a dedicated ministry to lead their climate-related initiatives. Currently, two countries are actively working on establishing their institutional framework to tackle climate challenges. Notably, ten countries have not mentioned any specific institution responsible for overseeing the execution of NDCs, NAPs, LTSs, or Adaptation Communications (Figure 5).

Figure 5. Status of the Institutional Arrangements by Number of Countries for each SIDS Region



More than half of the SIDS analyzed displayed strong institutional arrangements to address adaptation investments, indicating much room for improvement (Figure 5). Sixteen SIDS need to commit to and enhance their institutional frameworks to increase the likelihood of successful adaptation investments. Among them, ten must prioritize communicating any institutional arrangements that are planned or in place in their strategic adaptation documents, as no evidence of such was provided. Two SIDS need to enhance their NDCs by providing comprehensive explanations of the institutional measures they intend to undertake in developing their lead climate institution and its aiding branches. Furthermore, four SIDS

could expand their institutional frameworks by adopting a decentralized approach for enhanced effectiveness. This can be achieved by clearly defining and distributing roles among departments for adaptation finance coordination.

By establishing a robust institutional framework, countries can harness greater donor confidence, leading to increased mobilization of financial resources. The investments made in adaptation also stand a greater chance of success. Furthermore, an institutional structure that permeates to the grassroots level not only fosters confidence but also bolsters local growth and involvement.

Papua New Guinea: Heightening the Impact of Adaptation Investment Through Institutional Collaboration

In Papua New Guinea (PNG), the Climate Change Management Act 2016 (CCMA) serves as the principal regulatory framework for climate action. It mandates sectoral entities to integrate adaptation into planning and budgeting through climate-compatible action plans. At the national level, the CCMA forms the foundation for the National Adaptation Plan (NAP), guiding climate-compatible development and empowering priority sectors to implement adaptation action plans.

The Climate Change and Development Authority (CCDA) is PNG's mandated body for climate matters under the CCMA. It oversees the implementation of the National Climate-Compatible Development Management Policy, manages international commitments on climate change, and coordinates stakeholder engagement.

Under the CCMA, the CCDA coordinates climate policies and promotes climate-compatible growth. It also ensures compliance with international climate agreements like the UNFCCC and the Paris Agreement, establishing PNG's National Designated Authority (NDA) for the UNFCCC. Several key departments and national agencies collaborate with the CCDA to implement the NAP across mandated sectors.

At the subnational level, are the primary legal instruments that help to promote the integration and coordination of climate change initiatives into development objectives and projects. PNG represents a great example of a comprehensive framework of offices and committees that collectively drive the effective execution of climate-related initiatives from the national to the provincial level.

4.2.2 Development of Sectoral Plans

It is crucial for countries to clearly outline their priority sectors in their strategic adaptation documents, as it serves as a strong signal of their commitment to efficiently allocate adaptation investments—allowing them to identify roles and responsibilities across all levels of government.

By prioritizing specific sectors, countries gain a deeper understanding of the unique challenges and risks associated with each sector in the face of climate change, enabling them to develop targeted adaptation strategies and measures that address specific vulnerabilities. Such tailored approaches ensure that adaptation investments are utilized effectively—maximizing their impact and promoting resilience in the areas that need it the most.

Furthermore, laying out sectoral priorities in the strategic adaptation documents encourages collaboration and coordination among various stakeholders. The involvement of relevant government agencies, private sector entities, civil society organizations, and local communities becomes essential for implementing effective climate actions within these priority sectors. The prioritization of sectors and involvement of various entities also contribute to fostering ownership.

Mature and well-developed sectoral goals, that include financial estimates for implementing adaptation measures, not only clarify the financial requirements of countries but also provide a clear roadmap for the effective utilization of resources. By clearly identifying the priorities, it becomes easier to determine what actions need to be taken and how external support can be leveraged for maximum impact.

Finally, grounding NDCs and NAPs in long-term, time-bound sectoral adaptation goals or visions

is essential to signal a clear direction of the country's adaptation efforts.

Analysis of Sectoral Plans

Sectoral plans were analyzed in a two-step process: the first was to establish whether a country had identified any key priority sectors for adaptation, and the second was to identify the type of goals, if any, within these priority sectors. The types of goals (qualitative and quantitative) were then evaluated to assess quality and level of detail based on whether they were time-bound, had clear ownership, and provided financial estimates of adaptation investments.

Three SIDS did not identify priority sectors for adaptation, and thereby also did not include any sectoral plans or goals. Among the 32 SIDS with identified priority sectors, four have not established any goals for these sectors. Additionally, 15 SIDS mention non-measurable goals, often comprising general statements, trajectories, or plans for adaptation. However, it is encouraging that 13 SIDS define measurable goals within their respective sectors (Figure 6, 7, and 8). For example, Cape Verde plans to improve water security and natural replenishment while reducing carbon intensity. The country's NDC also mentions a target to reduce hydro-inefficiency through water losses in water supply systems and desalination plants from 30 percent in 2021 to 10 percent in 2030, thus making the goals more measurable.

Twelve SIDS have created time-bound goals, 12 have established focal institutions to carry out the adaptation measures and show ownership, and just ten have estimated the costs of their adaptation actions (Figure 6, 7, and 8).

Figure 6. Sectoral Adaptation Plans by Type and Detail of Goal for the Caribbean SIDS

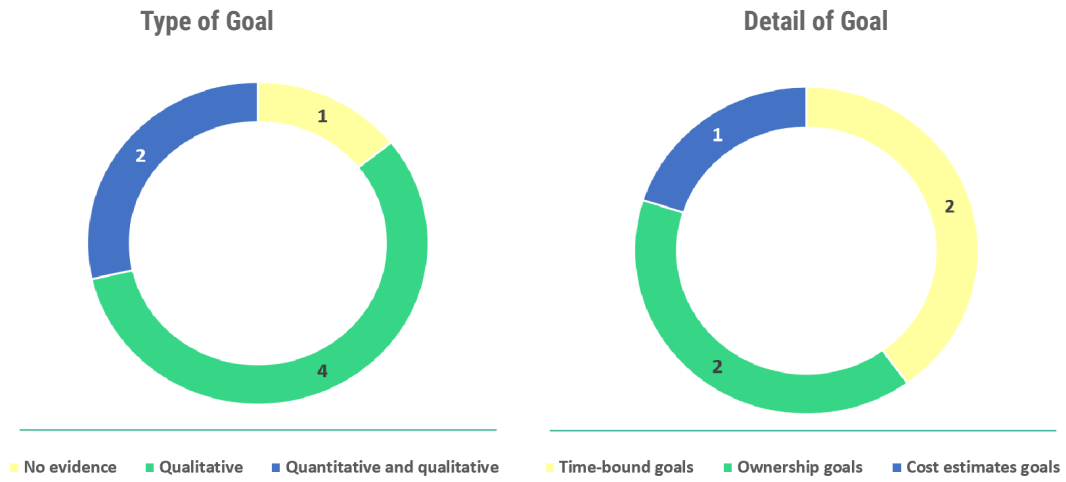


Figure 7. Sectoral Adaptation Plans by Type and Detail of Goal for the AIS SIDS

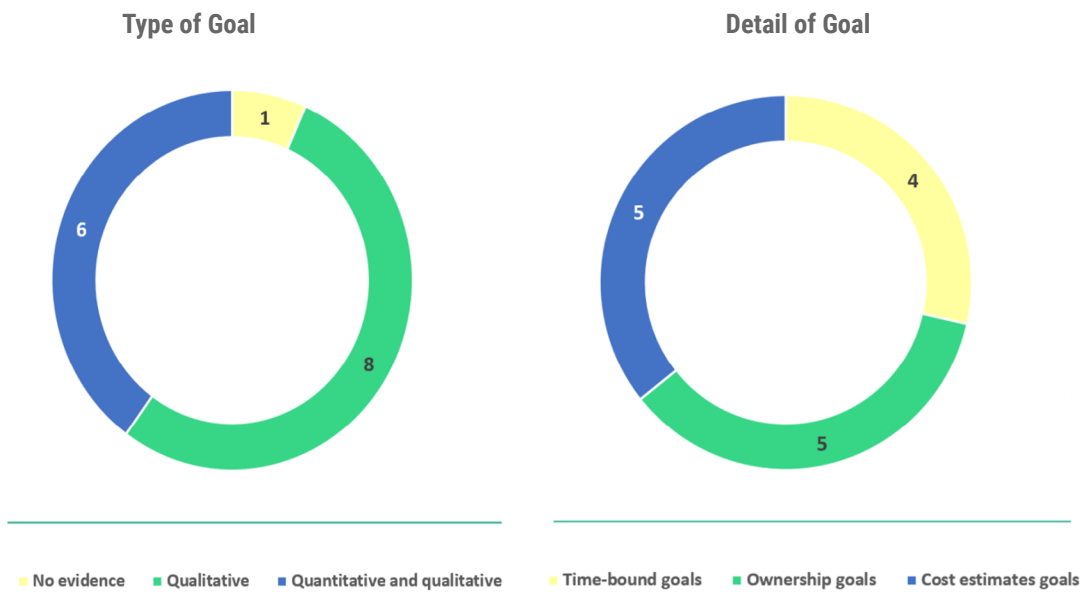
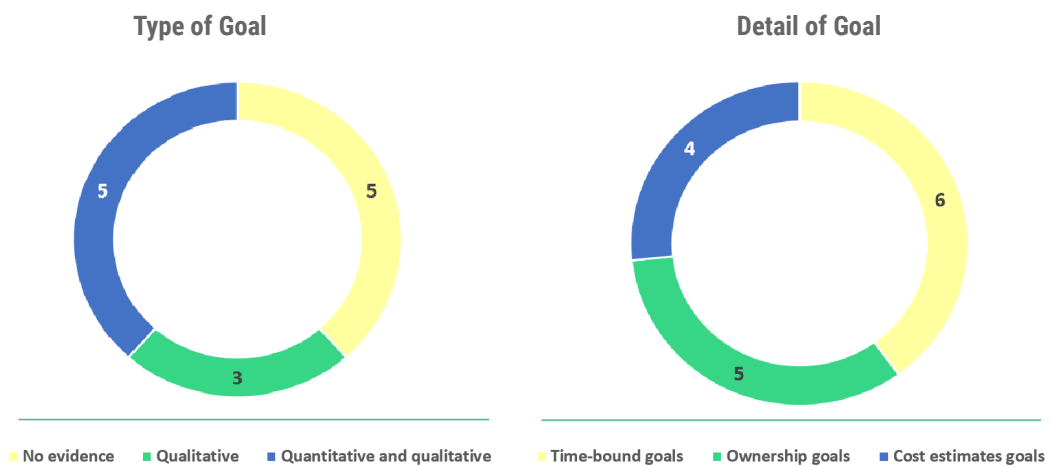


Figure 8. Sectoral Adaptation Plans by Type and Detail of Goal for the Pacific SIDS



Setting clear quantitative goals in climate documents is essential for creating a roadmap to combat climate change effectively. These goals provide specific and quantifiable targets that offer insights into the trajectory a country is aiming to achieve in its efforts to combat climate change. Therefore, it is imperative for the 22 SIDS that are missing this level of detail to draw up and communicate quantitative adaptation targets. Additionally, the analysis identified gaps in the maturity of sectoral goals. To address these gaps effectively, SIDS should work on specifying the institutions responsible for implementing these sectoral goals and the costs

of adaptation actions, as many SIDS provided overall quantitative or qualitative goals without providing further information as to how they were planning to attain them.

Among the analyzed countries, the Dominican Republic, Grenada, St. Vincent and the Grenadines, Palau, and Tonga stood out for having well-defined priority sectors and goals that are time-bound, demonstrate ownership, and include financial requirements—successfully communicating to the international community and IFI’s the intended adaptation pathway, when it comes to the development of sectoral plans, for their countries.

Dominican Republic: Clearly Defined Priority Sectors and Goals

The Dominican Republic is a good example of a country with well-defined priority sectors and goals that are time-bound, demonstrate ownership, and include financial requirements. The country has a list of the adaptation initiatives in process or to be carried out at the national and regional level, providing the progress status, the institution supporting the efforts, and a small description of its activities, dividing them by type (project, technical support, and study). Furthermore, the country estimates that an upward investment is required to carry out their NDC adaptation component of about US\$9 billion.

By clearly designating the implementing institutions and estimating the needed finance to carry out the adaptation activities, international stakeholders and donors can easily engage and communicate with the appropriate entities and have a clear knowledge of the existing adaptation financial gaps of the country.

4.2.3 Monitoring and Evaluation for Adaptation Goals

Communicating a monitoring and evaluation (M&E) plan in NAPs, NDCs and Adaptation Communications is a crucial way to help countries meet their global reporting requirements under international agreements, such as the Paris Agreement. The inclusion of M&E in strategic adaptation documents enhances the effectiveness of adaptation efforts because it enables transparent reporting, enhances trust among nations, and facilitates collaboration by allowing stakeholders to understand the efforts made and the outcomes achieved.

By systematically collecting and analyzing data, countries can gain valuable insights into

the outcomes of their adaptation strategies and policies. This process helps identify which actions are working well and which may need improvement. An M&E system provides a transparent and credible way to assess the effectiveness of a country’s climate change actions.

Analysis of Monitoring and Evaluation Frameworks

Three categories were identified for this analysis. The first comprised SIDS that do not currently have a monitoring and evaluation (M&E) framework for adaptation but have expressed an intention to develop one. The second comprised SIDS that have a basic plan for monitoring and evaluation. The third consisted of SIDS that have a highly developed and mature framework

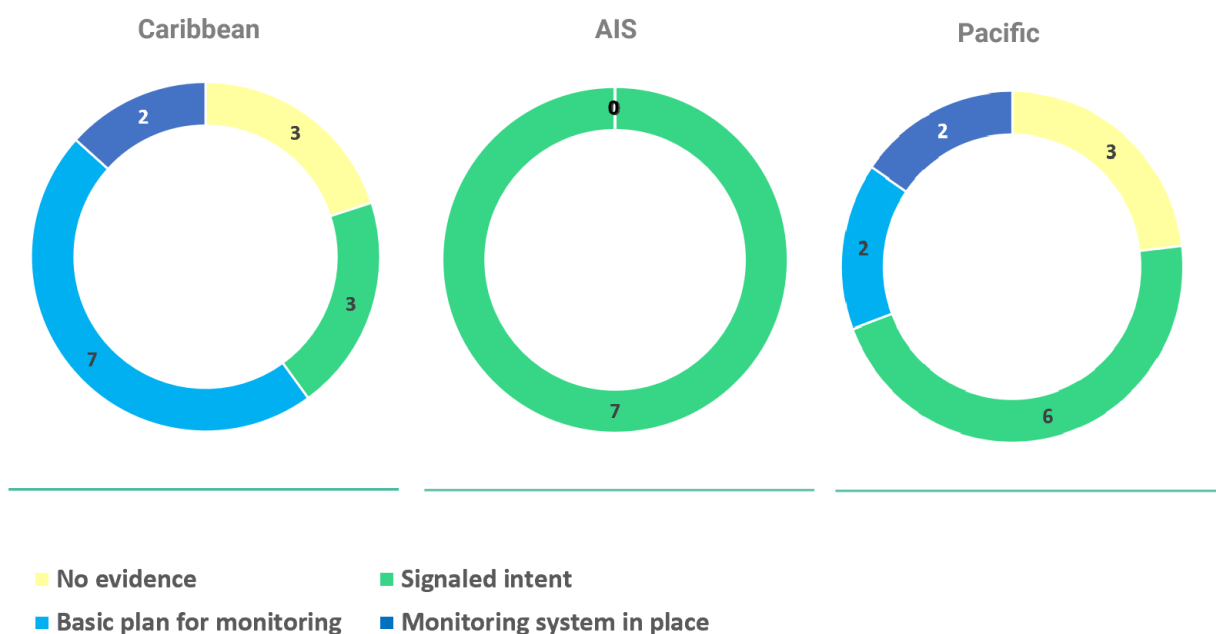
in place or have integrated an adaptation component into an already established (primarily set up for monitoring and evaluating climate mitigation targets) monitoring, reporting, and verification (MRV) system.

The analysis indicates that many countries need to prioritize plans to develop, strengthen, and implement their monitoring and evaluation frameworks (Figure 9). Six SIDS did not mention M&E in their climate documents at all, and 16 expressed their intention to develop a monitoring and evaluation framework in the future. These

SIDS recognize the importance of robust M&E mechanisms and intend to implement them; however, they currently lack a proper plan.

Nine SIDS had a basic plan for M&E adaptation measures. Within this category, some M&E system plans under development were highly detailed. Notably, only four SIDS have demonstrated the presence of an established M&E system capable of tracking progress on adaptation actions. Many of these countries have also identified specific indicators to monitor progress across various adaptation actions and priority sectors (see Annex, Table A.2).

Figure 9. Status of the Monitoring and Evaluations Systems Stated in the NDCs, NAPs, LTSs and Adaptation Communications by Number of SIDS for each Region



While progress in SIDS towards establishing M&E systems for adaptation remains ongoing, notable examples of progress are to be highlighted. The Bahamas, for instance, has made strides in this area by assigning specific roles within its institutional framework for the implementation of forthcoming M&E systems.

Similarly, Dominica has adopted a targeted strategy by instituting M&E systems specifically tailored to the agricultural sector. This focused approach serves as a valuable mechanism for enhancing understanding and prioritizing adaptation actions within this critical domain. Expanding upon this initiative presents an

opportunity for Dominica to broaden its M&E framework to encompass a wider array of adaptation endeavors. By doing so, the nation can ensure comprehensive M&E coverage across all facets of its adaptation efforts, further reinforcing its resilience to climate change impacts.

Of those countries with an M&E system for adaptation in place, some take an extra step by communicating the indicators that have been established to measure the progress of each adaptation goal. Communicating and integrating indicators to measure the success of adaptation efforts promotes transparency, reduces the

potential for bias, and ensures a more inclusive and balanced approach to assessing and reporting on climate adaptation efforts (see Annex Table A.2).

Suriname: Leading the Way with Monitoring and Evaluation Systems

Suriname provides a good example of a country setting a Monitoring and Evaluation (M&E) framework to evaluate the progress of adaptation actions to further strengthen future measures and plans. The M&E framework outlined for the Suriname NAP provides a comprehensive overview and operational structure for M&E activities at both the strategic and sectoral levels. It delineates specific requirements and responsibilities associated with M&E, clarifying how the findings derived from monitoring and evaluation efforts will be utilized to inform ongoing and future planning and implementation processes related to the NAP. Additionally, the framework includes an Achievement Schedule detailing the short-, medium-, and long-term implementation of the NAP.

The framework recommendations include Key Performance Indicators (KPIs) aimed at measuring the achievement of overarching strategic objectives for adaptation, as well as specific adaptive measures outlined within the NAP. The M&E system is tailored to assess the measures essential for NAP implementation, covering areas such as capacity building, financing and investment procurement, and engagement of vulnerable groups, among others.

Moreover, the M&E system integrates a sectoral monitoring and evaluation component. This comprehensive approach, encompassing both sectoral measures and institutional NAP needs and targets, enhances transparency, reduces potential biases, and promotes a more inclusive and equitable evaluation and reporting process for climate adaptation initiatives.

4.2.4 Finance Needs Estimates

Calculating the financial requirements of adaptation components of national adaptation plans allows countries to effectively communicate the resources needed to implement their adaptation goals. This information is crucial for attracting support and mobilizing resources from international donors, development agencies, and financial institutions. Clearly stating financial needs helps to bridge the gap between the available resources and the required funding, ensuring that countries can access the necessary financial support to implement their adaptation actions.

Adding conditional and unconditional financial needs in climate documents not only helps align funding priorities but can also encourage domestic resource mobilization. Conditional financial needs refer to the financial resources that a country requires to implement its climate change mitigation and adaptation actions—contingent upon receiving external support.

Unconditional financial needs, on the other hand, represent the financial resources that a country requires to implement its climate change actions regardless of external support.

Analysis of Financial Needs

This study categorized SIDS into three levels of adaptation financial cost estimates. The first level pertains to SIDS that signaled a general need for financial investments to undertake adaptation action. These SIDS expressed a general acknowledgment of the importance of financial resources to carry out their adaptation activities without specifying detailed costs. The second level captures SIDS that have identified general costs for mitigation and adaptation activities in their NDC or NAP commitments, without a distinction between the two. The third level encompasses SIDS that calculate the financial needs specific to adaptation requirements. These SIDS provided a comprehensive breakdown of the financial

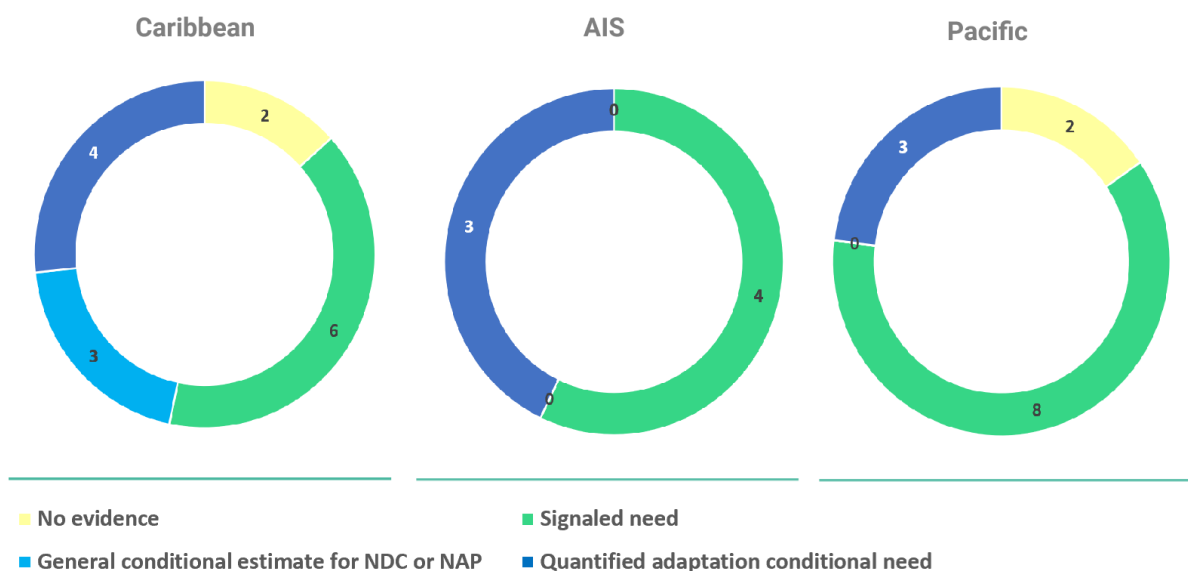
resources required to support their adaptation efforts, and in some instances, specified the costs they plan to cover and the ones they need international help with. This level can include adaptation costs divided by sector or specific actions.

The analysis indicates that many SIDS need to prioritize assessing the costs for carrying out their adaptation actions, as only ten SIDS out of 35 quantified their adaptation needs estimates (Figure 10). Out of the total number of SIDS assessed, four countries did not mention any financial assistance or need in their documents. Eighteen SIDS provided a general statement acknowledging the requirement for financial assistance to implement their adaptation goals. While these SIDS acknowledged the need for funding, they did not specify the exact amounts

or details. Three SIDS explicitly outlined the amount of funding they required to implement their NDC or NAP commitments. This includes financial needs for both mitigation and adaptation actions.

Notably, ten SIDS excelled in providing detailed information regarding the financial resources needed to implement their adaptation goals. Within this indicator, some countries took the extra step of outlining the unconditional and conditional funds needed per sector or adaptation activity. Providing conditional and unconditional finance needs per activity or sector can give investors more certainty about the country's commitments to advance the adaptation agenda.

Figure 10. Status of the Finance Needs Stated in the NDCs, NAPs, and Adaptation Communications by Number of SIDS for each Region



Some SIDS outline their specific financial requirements by presenting cost estimates for the implementation of sectoral adaptation goals. Notable examples include the Dominican Republic, Grenada, Mauritius, Palau, St. Kitts and Nevis, and Tonga. However, certain SIDS adopt a different strategy, delineating adaptation cost estimates and categorizing them into conditional and unconditional funding needs. This approach is exemplified by Haiti and Mauritius. Both methodologies serve to communicate the general financial demands for adaptation to the international community. Nevertheless, a hybrid approach, combining cost estimates based on conditionality and sectoral considerations, offers the most comprehensive insight into the financial requirements for effective adaptation strategies, like the case of Vanuatu and Belize.

Some SIDS have established finance as a priority sector for adaptation, inclusive of sectoral goals with finance estimates. Grenada, for example,

highlights adaptation financing as a priority area, providing success indicators and an approximate budget estimate (US\$1.4 million), with the goal of applying successfully for project financing to ensure external climate finance support to Grenada's adaptation process. The success indicators include GCF granting Grenada financial support for readiness activities, and a couple of project proposals to finance the implementation of NAP activities being submitted to potential donors and investors annually. Vanuatu is committed to identifying innovative sustainable financing mechanisms and obtaining National Implementing Entity accreditation from the major climate change funds. Kiribati is focused on strengthening the Climate Finance Unit and broader national capacity, including NGOs, to further engage with key multilateral sources and climate finance mechanisms to provide efficient and directed support for CCA, mitigation, and DRM activities.

Grenada: Making Finance a Priority Sector with Clear Goals

Grenada's National Adaptation Plan (NAP) identifies key barriers to climate-resilient development, including limited awareness of funding sources and procedures, as well as capacity constraints in project development and implementation.

The NAP's Programme of Action prioritizes several areas:

- Assessing adaptation finance in Grenada
- Utilizing existing domestic and external finance
- Engaging with domestic and international entities to leverage finance
- Increasing access to external finance sources
- Improving the investment environment for adaptation
- Enhancing Grenada's absorptive capacity, particularly addressing institutional readiness gaps.

Despite challenges in accessing funding, Grenada's NAP sets clear adaptation goals for all sectors with defined timelines and budget requirements. Prioritizing finance as an action program of its own, Grenada aims to secure external climate finance support by allocating an estimated budget of US\$1.4 million for adaptation activities within its finance sector—underscoring its commitment to attracting more international adaptation finance into the country.

4.2.5 Linking Adaptation with Disaster Risk Reduction

Climate and disaster risks are growing faster than our collective efforts to build resilience. The consequences of not anticipating, reducing, and managing disaster risks before they manifest as shocks can be dire for societies, livelihoods, and the ecosystems on which they depend. Small Island Developing States are located in some of the most disaster-prone regions in the world. With the impacts of climate change compounding the intensity and frequency of natural disasters, this trend is set to continue, severely affecting the growth trajectory of SIDS and hindering their ability to achieve sustainable development.¹⁷

Annually, natural disasters can cost SIDS up to 8 percent of their entire GDP.¹⁸ In the aftermath of disasters, SIDS require huge financial resources for reconstruction efforts which are often covered through external borrowing, further perpetuating the debt crisis faced by many island nations. Some natural disasters have a smaller impact on monetary damage indicators and physical capital but have dire consequences for the health and well-being of people. A drought, for example, may not cause physical damage to infrastructure, but it may result in increased food insecurity, malnutrition, lower productivity, loss of income, and rising poverty levels.¹⁹

The Sendai Framework for Disaster Risk Reduction was adopted in 2015 at the third United Nations World Conference on Disaster Risk Reduction. It was a call to action to reduce the risk of anthropogenic and natural hazards, designed to substantially reduce losses in lives, livelihoods, and health by 2030. The framework presents a universal vision for how societies may collaborate to identify, prevent, and reduce risks before they manifest as shocks or disasters, and to build resilience. More recently, the Small Island Developing States Accelerated Modalities of Action (S.A.M.O.A. Pathway) was instituted to promote sustainable development within SIDS. The World Bank estimates that it costs 10–50 percent more to build back better after a disaster. Within the infrastructure sector,

increasing resilience standards can be even higher.²⁰ By investing in disaster preparedness and risk reduction plans and actions, island nations can avoid multiple economic losses and protect the lives and livelihoods of people.

Increasing hazards and natural disasters are directly linked to climate change and the CCA and disaster risk reduction (DRR) agendas overlap in several ways. They both seek to reduce vulnerabilities to hazards, and both operate in the context of sustainable development and poverty reduction. Risk reduction cannot occur without the use of climate information; equally, successful CCA depends on risk reduction. On the ground, most actions that can help adapt to a changing climate also reduce disaster impacts. Aligning DRR strategies with adaptation goals is essential for optimizing resources and enhancing resilience. For this reason, it is crucial for countries to integrate DRR into their adaptation planning documents.

Analysis of the Integration of DRR and CCA for Small Island Developing States

Our analysis identified three categories to assess the integration of DRR and CCA efforts:

1. **General Linkages:** Some SIDS recognize the inherent connection between DRR strategies and adaptation commitments. They leverage existing frameworks and policies, such as the Sendai Framework or National Disaster Strategies to inform adaptation planning.
2. **Sectoral Integration:** Others go further by integrating DRR actions into sector-specific adaptation measures, enhancing the effectiveness of resilience-building efforts through a cross-sectoral approach.
3. **Advanced Integration:** A select group of SIDS demonstrate advanced integration, embedding DRR within priority sectors of their adaptation agendas. This includes setting clear goals, timelines, and allocating dedicated financial resources.

Despite progress, many SIDS still require an enhanced coordination between DRR and CCA

agendas. Our analysis found that almost a quarter of SIDS (8) either vaguely mentioned the connection (5) or did not acknowledge it at all (3) (Figure 11). Eighteen SIDS incorporate National Disaster Risk Management strategies into their climate plans (Table 2). Five of these SIDS credit the Sendai Framework for guiding adaptation measures.

Figure 11. Status Disaster Risk Reduction Linkages to Adaptation and Set as a Priority Sector in the NDCs and NAPs by Number of SIDS for each Region

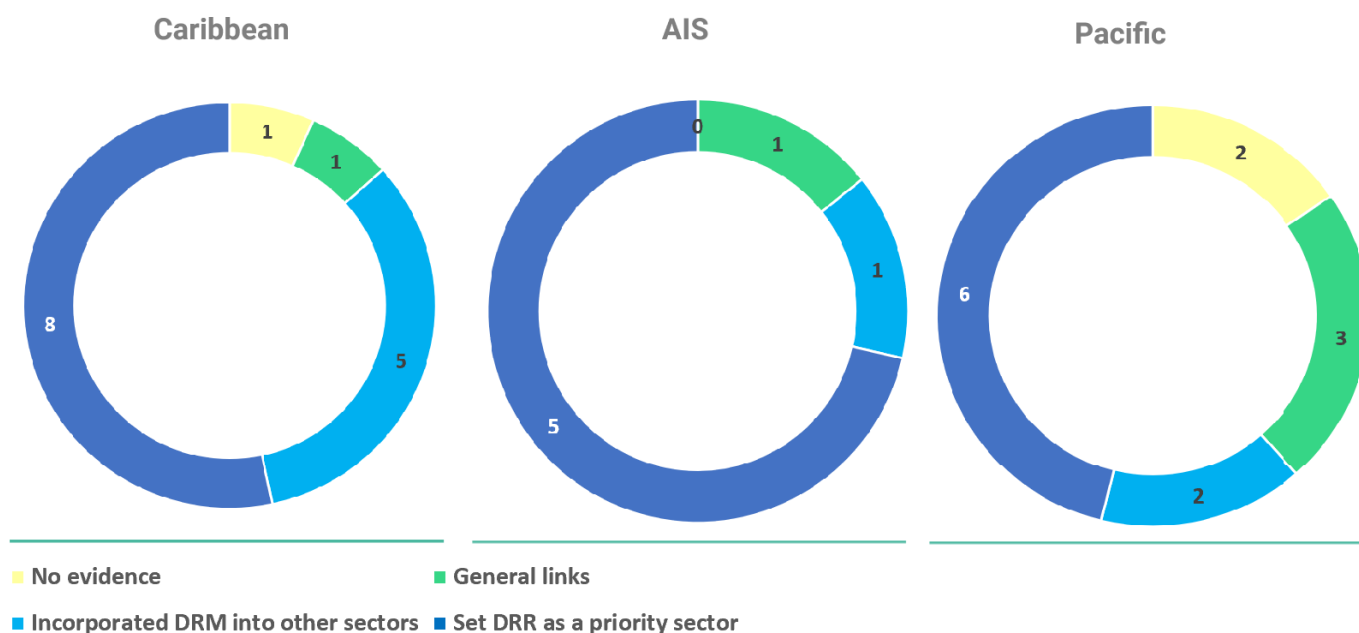


Table 2. DRM Strategy Linkages in NDCs, NAPs, LTSS, and/or Adaptation Communications

Country	Mentioned DRM Strategy or Plan in NDC/NAP/LTS/Adaptation Communications
Caribbean SIDS	
Antigua and Barbuda	<ul style="list-style-type: none"> Disaster Risk Reduction Planning in Parham Town
Barbados	<ul style="list-style-type: none"> Barbados Comprehensive Disaster Management Country Work (NCRIPP)
Belize	<ul style="list-style-type: none"> The National Climate Resilience Investment Plan (2013)
Dominica	<ul style="list-style-type: none"> Agriculture Disaster Risk Management (ADRM) Plan 2014-2019 National Disaster Management Plan
Grenada	<ul style="list-style-type: none"> Strategic Environmental and Risk Management Plan per year
Haiti	<ul style="list-style-type: none"> National risk and disaster management planer events
Jamaica	<ul style="list-style-type: none"> Comprehensive Disaster Management (CDM) Strategy and Action Plan (2014 -2024)
African, Indian Ocean, and South China Sea (AIS) SIDS	
Mauritius	<ul style="list-style-type: none"> National Action Plan for Disaster Risk Management National Action Plan for Capacity Building in Disaster Risk Reduction and Preparedness and Response to Emergencies
East Timor	<ul style="list-style-type: none"> National Disaster Risk Management Policy 2019-2023 (DRAFT)

Pacific SIDS	
Cook Islands	<ul style="list-style-type: none"> • The Joint National Disaster Risk Management and Climate Change Adaptation Plan (JNAP) (2011–2015) • The Climate and Disaster Compatible Development Policy (2013-2016)
Federated States of Micronesia	<ul style="list-style-type: none"> • Integrated Disaster Risk Management and Climate Change Policy (2013) • National Disaster Response Plan (2017)
Fiji	<ul style="list-style-type: none"> • National risk and disaster management planer events
Niue	<ul style="list-style-type: none"> • Niue’s Joint National Action Plan (JNAP) for Disaster Risk Management and Climate Change Adaptation (2012)
Palau	<ul style="list-style-type: none"> • National Disaster Management Framework 2010 (NDRMF)
Papua New Guinea	<ul style="list-style-type: none"> • The National Disaster Risk Reduction Framework 2017-2030 • The National Disaster Mitigation Policy (2019) • Framework for Resilient Development in the Pacific 2017-2030
Marshall Islands	<ul style="list-style-type: none"> • Joint National Action Plan on Disaster and Climate Risk (JNAP) (2014-2018)
Tonga	<ul style="list-style-type: none"> • Joint National Action Plan on Disaster and Climate Risk (JNAP) • National Emergency Management Plan
Vanuatu	<ul style="list-style-type: none"> • The National Policy on Climate Change and Disaster Risk Reduction (2016-2030)

Seven SIDS identified adaptation measures or synergetic goals with DRR within their priority sectors. Some of these measures were geared toward creating early warning systems and strengthening the capacity of monitoring, forecasting, and analysis to minimize damages. For instance, for the health and agriculture sector, SIDS mentioned creating early warning systems for vector and water-borne diseases, heat stress, and pest management to build resilience. For water, for example, a few SIDS mention developing and implementing early warning systems for drought and flood to allow relevant stakeholders to plan more effectively.

Several SIDS prioritized activities focused on developing laws, plans, or strategies to reduce the risk of, and vulnerability to, climate change impacts. Other measures focused on post-disaster impacts by delineating the importance of setting up social protection tools (e.g., formulating climate and disaster preparedness plans). Furthermore, some measures focused on public education and awareness-raising concerning security and resilience to natural disasters and humanitarian crises. On the other hand, there seemed to be few mentions of integrating these measures into the infrastructure sector.

Over half (19) of the SIDS analyzed had communicated DRR as a separate priority sector

within their adaptation contributions. Of these, 14 SIDS expressed qualitative actions and goals, with various levels of detail, for example, qualitative goals such as “Approval of the Barbados Comprehensive Disaster Management Country Work Program 2019-2023”,²¹ (Barbados), “Maintain a spatial database of critical infrastructure and hazard mapping” (St. Kitts and Nevis), “Quantifying risk and including projected costs in budgetary processes, as appropriate” (St. Lucia), and “Establish at the community and national levels, appropriate and relevant integrated frameworks to prevent, prepare for, respond to, recover from and mitigate the causes and impacts of natural phenomena on the environment and to prevent manmade disasters” (St. Vincent and the Grenadines).

Notably, some SIDS have developed a joint national action plan for disaster risk management and climate change (JNAP). The overarching purpose of a JNAP is to mainstream disaster risk reduction and climate change into development. It aims to enable increased integration of disaster risk reduction and climate change adaptation action, though this is yet to be seen in implementation. The JNAPs emphasize the need for preparedness, awareness raising, and community engagement—and aim to foster an approach of prevention and active engagement by the whole of society. Further, JNAPs contribute to a more effective use of

financial and human resources by improving coordination of funding for both agendas.²² Five SIDS have developed a JNAP, namely Tonga, Cook Islands, Tuvalu, Niue, and Marshall Islands. Many other countries have committed to an integrated approach, some with steps in the preparation of a JNAP already taken.

Despite great strides made by SIDS in integrating DRR considerations within their adaptation commitments, more can be done to build robust multi-hazard and multi-sector risk governance. Many SIDS stated a need for strengthening capacity and tools provided to local, provincial, and national authorities. Further, measures for strengthening disaster preparedness early warning systems within sectors to ensure a timely response to climate shocks (such as drought, coastal and inland flooding, wildfires) was not mentioned as frequently as needed. Finally, it is essential for SIDS to consider all the stages of a disaster, as many strategic adaptation documents did not include all three: prevention (i.e., early warning systems), disaster (i.e., evacuation and refuge plans), and post-disaster phases (i.e., insurance and basic relief support).

4.3 Loss and Damage

Climate change poses an existential threat with far reaching and unprecedented effects on people's lives in SIDS. The frequency and intensity of climate disasters are escalating across SIDS, resulting in devastating impacts on communities and ecosystems and, in many cases, posing a threat to their survival. Small islands additionally face challenges in rapidly rebuilding infrastructure or providing sufficient relief to affected communities due to limited financial resources.

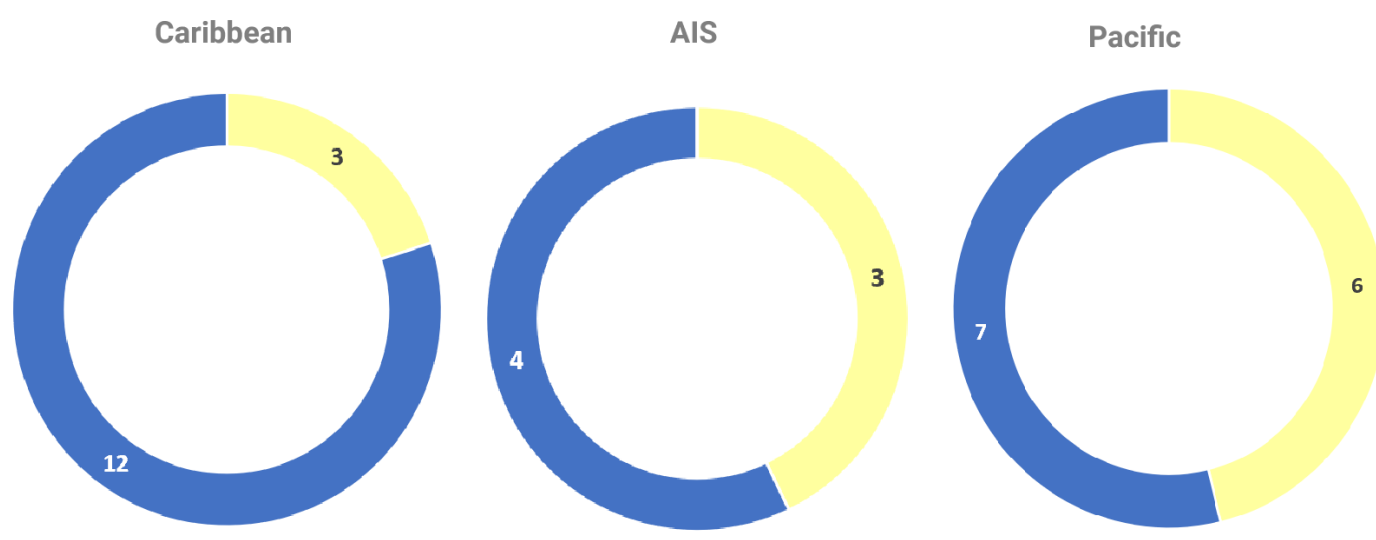
SIDS account for less than 1 percent of global greenhouse gas (GHG) emissions,²³ yet they often bear the brunt of its impacts, especially during climate shocks and disasters. According to the World Meteorological Organization (WMO), SIDS lost US\$153 billion due to weather-, climate- and water-related hazards, between 1970 to 2020.²⁴ Even with limiting global

warming to 1.5°C above pre-industrial levels, SIDS will continue to incur severe loss and damage. These disparities in responsibility and resilience call for a deeper commitment from the international community to provide support and solidarity to those most affected.

To address these issues, at COP27, held in Sharm El Sheikh in 2022, there was a notable turning point in the efforts to establish a loss and damage (L&D) fund. The L&D mechanism was created to address the damage caused by the impacts of climate change in vulnerable countries and recognizes that even with adaptation and mitigation efforts, some adverse effects are inevitable. This fund aims to provide financial support to assist these countries in dealing with the aftermath of climate-induced disasters and to support their efforts in coping with the challenges posed by climate change. At COP28, parties successfully negotiated an agreement regarding the operationalization of the L&D fund along with funding arrangements. By the conclusion of 2023, commitments to the fund had exceeded US\$700 million. Additionally, consensus was reached on designating the UN Office for Disaster Risk Reduction and the UN Office for Project Services as hosts for the secretariat of the Santiago Network for Loss and Damage. This initiative seeks to facilitate technical assistance to developing countries disproportionately affected by climate change, thereby catalyzing efforts to mitigate its adverse impacts.

SIDS have been at the forefront of climate negotiations to advance finance flows to the regions. As of January 2024, 23 SIDS have mentioned the importance of L&D considerations within their strategic adaptation documentation, underscoring the need for international climate action in response to the climate crisis (Figure 12).

Figure 12. Mention of Linkages to the L&D Agenda in the NDCs and NAPs by Number of SIDS for each Region



- No evidence
- Mentions initiatives or acknowledges the importance of L&D

Some SIDS, like St. Kitts and Nevis, developed an L&D chapter in a strategic adaptation document and provided an overview of economic and non-economic loss and damage due to extreme events. Other SIDS, like Haiti, have made a general estimate of the finance needed for L&D:

US\$4.98 billion (90 percent conditional and 10 percent to be financed by the public treasury). Other SIDS like Vanuatu, made L&D a subsection of its adaptation documentation with clear goals and finance required.

Vanuatu: Mainstreaming L&D Within its Climate Commitments

Despite Vanuatu’s very small contribution to global greenhouse gas (GHG) emissions (0.0016 percent), it suffers annually from irrecoverable L&D from climate change events, including over US\$600 million (more than 60 percent of GDP) due to Cyclone Harold in 2020.²⁵ Vanuatu has also been at the forefront of L&D discussions to push for the Warsaw International Mechanism on Loss and Damage and the Santiago Network on Loss and Damage’s operationalization.

Vanuatu has successfully developed an L&D section in its updated NDC, that provides the topic of the same level of detail as adaptation and mitigation. Further, the country also integrates L&D into its National Climate Change and Disaster Risk Reduction Policy (CCDRR). For instance, within the NDC commitments, Vanuatu aims to implement affordable microinsurance and “climate insurance” models to provide additional safety nets to remedy loss of income, and damage to housing, infrastructure, crops, and other assets from climate disasters. Vanuatu also commits to addressing the needs of, and providing durable solutions for, people affected by displacement, including people at risk of displacement, displaced people, internal migrants, people living in informal settlements, and host communities—requiring a total of close to US\$180 million in international finance, from which almost all is conditional.

Vanuatu’s actions serve as a strong signal of their commitment to efficiently allocate L&D investments that complement adaptation goals and allow them to build the resilience of their country. Further, it provides a good example of how to mainstream L&D considerations into

the NDCs and NAPs to complement mitigation and adaptation actions for a holistic planning approach.

The inclusion of L&D considerations into the strategic adaptation documents of SIDS highlights their positioning as front runners in accelerating the agenda. To continue and enhance efforts across all SIDS, knowledge sharing within and between regions is highly recommended. Loss and damage response

plans and actions require comprehensive risk assessment, loss modelling, capacity in governance and implementation, monitoring, evaluation, and reporting on solutions and impacts. It is recommended that SIDS invest in recruiting and developing local expertise for these technical needs.

5. ADAPTATION PRIORITIES ACROSS SECTORS

This section of the report delves into the key sectors of agriculture, infrastructure, water, and health, which are paramount across Small Island Developing States (SIDS). It offers detailed insights into planned adaptation measures within each sector, drawing examples from various countries. Additionally, it examines prevalent types of adaptation activities commonly utilized across these sectors (Box 6). Then, recommended actions are provided based on adaptation measures that are rarely mentioned in sectoral plans yet considered crucial to addressing sector-specific vulnerability—complementing the ones already more heavily prioritized to build the resilience of each sector.

Furthermore, this section of the report identifies

themes and gaps where focused attention and resources are crucial for effective adaptation strategies. These include coastal zones, human settlements, tourism, finance, climate information, and inclusive approaches.

5.1 Key Adaptation Priority Sectors Mentioned Across NDCs and NAPs for SIDS by Region

Across NDCs, NAPs, and Adaptation Communications, the five most frequently identified prioritized sectors for adaptation were Agriculture and Livestock (31), Water (27), Infrastructure (27), and Health (26), closely followed by Forestry and Biodiversity (25) (Figure 13.).

Types of Adaptation Activities

Using insights from the IPCC AR5 Report alongside a systematic review of adaptation case studies, Owen (2021)²⁶ compiled a comprehensive list of adaptation activities deemed effective. These activities are further categorized into three distinct groups for clarity and analysis. For this report, Owen's categorization framework is employed to classify the types of sectoral adaptation activities prioritized by SIDS. This categorization aims to aid us in identifying potential areas of opportunity for enhancing adaptation efforts. The primary categories identified are as follows:

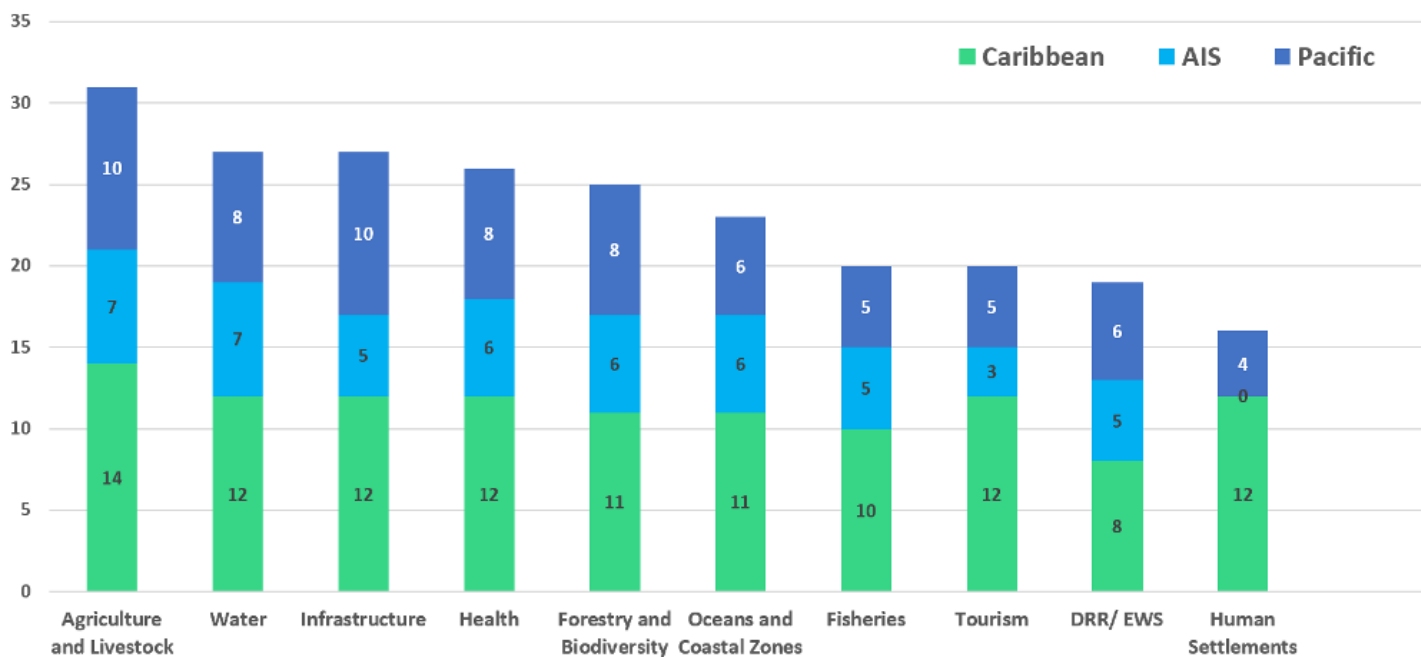
Social adaptation activities encompass a range of initiatives focused on promoting educational, informational, and behavioral changes among communities. These activities are designed to disseminate knowledge, employ effective communication strategies, conduct research, and facilitate behavioral modifications. Typical social adaptation endeavors often involve providing informational and educational support through collaborations with extension services, the development of decision support tools, and the establishment of knowledge sharing platforms.

Institutional adaptation activities are subcategorized into economic interventions, laws and regulations, and policies and programs. This category encompasses actions necessitating governmental and financial institution involvement, such as subsidies and micro-credits, establishing protected areas and regulations, and developing plans, laws, and policies.

Physical and structural adaptation activities are divided into engineered and constructed

environments, technological advancements, ecosystem-based adaptation, and service provision. These activities entail the implementation of engineered technological solutions like climate-smart irrigation systems and climate-resilient infrastructure, as well as the promotion of nature-based solutions (NbS) ecosystem services. Additionally, they involve the provision of essential services such as safety nets, emergency response mechanisms, and healthcare services.

Figure 13. Top 10 Key Adaptation Priority Sectors Mentioned Across NDCs and NAPs for all SIDS



5.1.1. Agriculture and Livestock

Agriculture and livestock is the sector that is most prioritized across SIDS. The study grouped the following stated key sectors under the umbrella of Agriculture and Livestock: Agriculture, Livestock, Rural Resilience, Agriculture Landscapes, Food Systems, Food Security, and Rural Development. Table 3 highlights examples of various SIDS' adaptation measures and goals in relation to agriculture and livestock.

According to our analysis, the type of adaptation actions SIDS focus more on in the agriculture sector are social adaptation activities (Box 6)—meaning those aiming at addressing educational and behavioral aspects of adaptation. For instance, for the agriculture sector, SIDS are prioritizing actions like adopting better soil, land, and water management practices (behavioral),

promoting climate-smart livestock management (behavioral), developing educational campaigns for farmers/extension officers (educational), investment in research on climate-resilient agriculture (educational), and reversing and preventing land degradation through soil and water conservation techniques such as agroforestry practices and spatial planning (behavioral/ecosystem-based adaptation). Many of those activities focus on providing information to address systemic barriers to adaptation by strengthening the target beneficiary's or user's ability to understand and respond to physical climate risks.

Other popular adaptation activities include establishing and applying an integrated EWS for pest and disease management (informational), crop and species diversification, and introduction of climate-resistant seed varieties and species

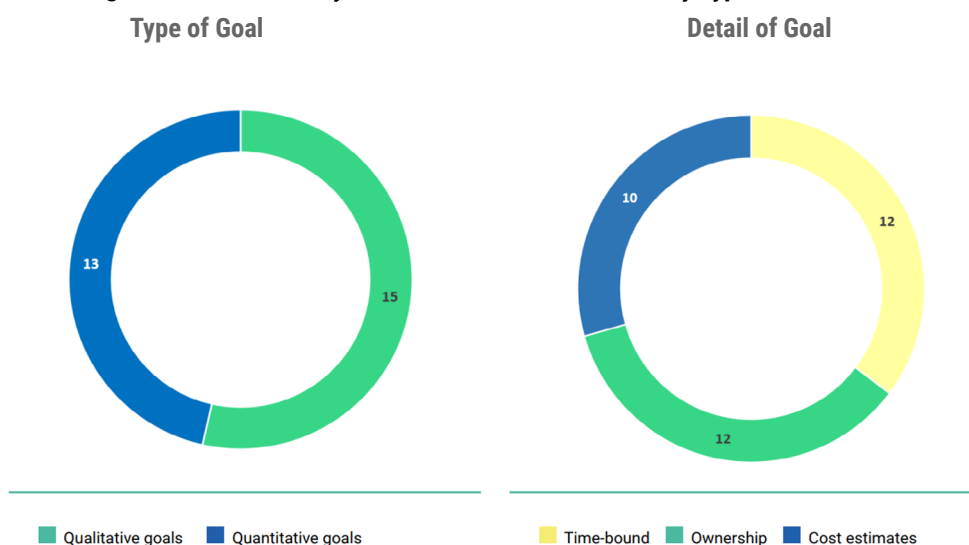
in animal husbandry (technological innovation), and improving food preservation and storage techniques to avoid food shortages and to increase food availability (technological innovation). These activities are both focused on contributing to preventing or reducing

material physical climate risk and/or the adverse associated impacts on assets, economic activities, people, or nature, and providing information to address systemic barriers to adaptation.

Table 3. Examples of Common Adaptation Measures in the Agriculture and Livestock Sector

Adaptation Measure, Goal, or Activity	Example of SIDS' Goals
Promote climate-smart livestock management.	Sao Tome and Principe: Production and improvement of pasture management, fodder, and silage production.
Establish and apply an integrated EWS for the management of pest, disease, drought, and extreme weather events.	Belize: Enhanced EWS for drought and extreme weather events to support farmers in planning for and responding to the impacts of climate change by 2025.
Adopt better soil, land, and water management practices, including the use of efficient irrigation systems and smart hydroponic systems.	East Timor: Implement integrated water resource management approaches to protect and rehabilitate watersheds critical for sustainable water supply for the agriculture sector.
Crop and species diversification and introduction of climate-resistant seed varieties and species in animal husbandry.	Vanuatu: Encourage the use of improved genetic varieties of fruits and vegetables suited for climate extreme conditions.
Reverse and prevent land degradation.	Cape Verde: Soil and water conservation techniques such as mulching, planting of cover crops, application of organic amendments, agroforestry systems, efficient non-depleting biomass use for energy, preference of nitrogen-fixing leguminous crops over soil depleting ones, anti-erosion practices such as terraces, contour ridges, and vegetation barriers.
Investment in research on climate-resilient crops, agricultural practices, and animal husbandry to enable scientific and technical investigation on adaptation.	Suriname: Establish a comprehensive national research program on climate resilient crops, agricultural practices, animal husbandry and fisheries.

Figure 14. Status of Agriculture as a Priority Sector in the NDCs and NAPs by Type and Detail of Goal for all Regions



The study found 15 sectoral plans with qualitative descriptions of goals related to agriculture and livestock. Thirteen sectoral plans outlined goals with quantitative measures of progress (Figure 14a). In relation to the level of detail of the goals: 12 were time-bound, 12 had ownership, and ten had cost estimates (Figure 14b). These results indicate the need for SIDS to develop more detailed goals that allow investors to understand the adaptation pathways of their countries.

Adaptation measures in agriculture for SIDS were characterized by mainly focusing on the production phase of agriculture—meaning in the pre-sowing and sowing stages—while only a small share focus on post-harvest operations such as processing and packaging, transport, storage and distribution, and retail. Focusing on adapting all the phases of production and creating time-bound goals, with clear roles and cost estimates, are recommended to enhance the readiness for investment in the sector.

Further, few countries identified cross-sectoral actions that could address vulnerabilities including water resource management for the regulation of harvesting, conservation, and export (laws and regulations); protection, management, and development of watersheds (ecosystem-based adaptation/policies and programs); and implementing rainwater harvesting (RWH), water storage, and hill reservoirs for watering crops during dry periods (engineered and build environments).

These combined actions, in conjunction with the identified social adaptation activities, hold the potential to mitigate or alleviate physical climate risks and associated adverse impacts on assets, economic activities, communities, and ecosystems.

5.1.2. Infrastructure

Infrastructure, along with water, is the second most prioritized sector across SIDS. The study grouped the following stated key sectors under the umbrella of Infrastructure: Resilient Infrastructure, Transport, Roads, Bridges, and

Hard and Soft infrastructure. Table 4 highlights examples of various SIDS' adaptation measures and goals concerning infrastructure. Measures in this sector tend to be cross-sectoral, as engineered and built environment adaptation activities tend to be prioritized by other sectors as well, for example, coastal protection (coastal sector), water supply and irrigation systems (agriculture sector), storm, drainage, and wastewater management (water and waste sectors), electricity grids (energy sector), amongst others.

SIDS have a balanced set of adaptation activities between the social, institutional, physical, and structural types (Box 6) within infrastructure plans. For instance, some of the most mentioned prioritized actions, like enhancing building codes to reflect climate considerations (laws and regulations), retrofitting existing critical economic and social infrastructure (engineered and built environments), conducting comprehensive vulnerability assessments and data gathering of infrastructure at risk (informational), and promoting the use of NbS to enhance the resilience of critical infrastructure (ecosystem-based adaptation), are activities that focus on addressing the physical and social barriers to adaptation, but also try to enhance the understanding of the impact of climate change on the sector.

Table 4. Examples of Common Adaptation Measures in the Infrastructure Sector

Adaptation Measure, Goal, or Activity	Example of Countries' Goals
Create and retrofit existing public infrastructure most at risk from climate impacts to strengthen resilience to extreme weather events.	Federated States of Micronesia: By 2030, climate-proof (e.g., by widening, elevating, repairing and/or relocating) all major island ring roads, airport access roads, and arterial roads; complete climate-proofing of major ports (including larger and more resilient docks meeting ISPS standards).
Review, update, improve, and implement building codes, laws, and standards so they incorporate the consideration of climate variables and risks with periodical reassessment.	Papua New Guinea: Reach the adaptation target of US\$172 million value of building and utility infrastructure assets built/rehabilitated according to climate-resilient codes and standards.
Improve urban, development, and land use policies and planning to ensure that new and existing developments, social and economic infrastructure, buildings, and land management promote long-term climate resilience, including the resilience of ecosystems.	Palau: Integrate DRR and CCA into National and State Integrated Land-use and Marine Spatial Plans.
Conduct comprehensive vulnerability assessments and data gathering of infrastructure at risk from the effects of climate change.	Grenada: Conduct a detailed Climate Change Vulnerability assessment for all three airports (Dumfries, Maurice Bishop, Pearls), including parking areas (sea-level rise, erosion, increased temperatures and impact on runway, flooding, etc.) and implementation of first erosion control measures where required.
Promote and use NbS to enhance the protection of critical infrastructure.	Maldives: Strengthen efforts to conserve and restore mangrove ecosystems. East Timor: Improve physical infrastructure and natural vegetation methods to prevent landslides in hill sites, roads, and riverbanks.

The study found 13 sectoral plans with qualitative descriptions of goals related to the infrastructure sector. Eleven sectoral plans outlined goals with quantitative measures of progress (Figure 15a). In relation to the level of detail of the goals: 11 were time-bound, 11 had ownership, and nine had cost estimates (Figure 15b). These results indicate the need for SIDS to develop more detailed goals that allow investors to understand the adaptation pathways of their countries.

Notably, infrastructure exhibits a strong balance between types of adaptation activities, ranging between social, institutional, and physical types. Nevertheless, some gaps in adaptation activities provide valuable insights for enhancing the resilience of the sector. Among the least mentioned activities were building the capacity and supporting the engagement of key stakeholders of the infrastructure sector (educational activities). Good practices in this

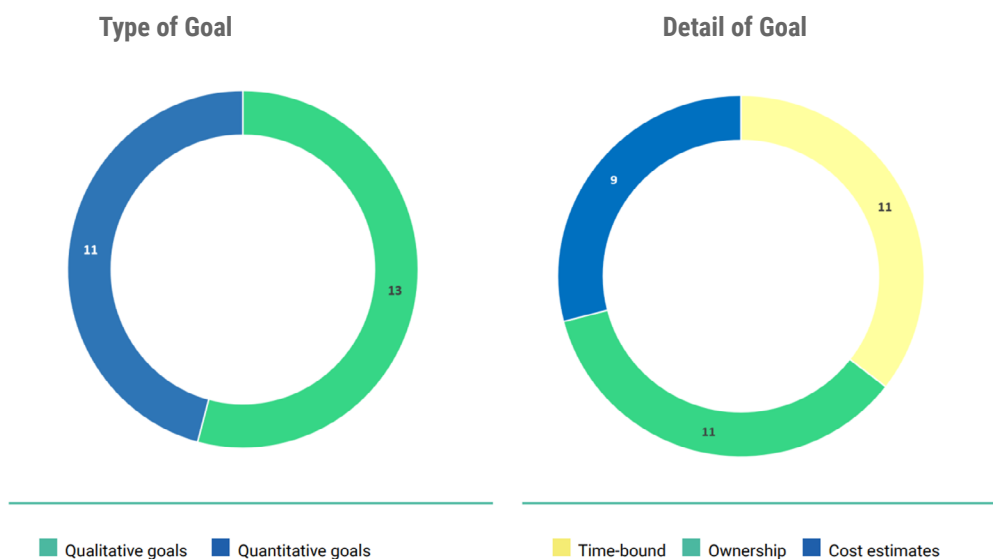
regard can be seen in Kiribati, which has the adaptation target to engage communities in becoming active partners in building coastal resilience and reducing hazards and risks related to climate change. Similarly, Jamaica has as a target support for community-based capacity development, training, and planning; and enhances the capacity of municipal councils to propose, monitor, and assess community-level adaptation interventions and their impacts.

Furthermore, strengthening emergency response systems and early warning systems (EWS) for infrastructure emerged as one of the least frequently mentioned activities, particularly in the informational category. Even though adaptation targets related to EWS may be established in other sectors such as agriculture, coastal systems, and disaster risk reduction, it is imperative to ensure that these actions cut across all priority sectors. Early warning systems are designed to generate and disseminate

timely and pertinent warning information. The primary objective is to empower individuals, communities, and organizations confronting potential hazards by furnishing them with essential information to prepare and take prompt and suitable action, thereby minimizing loss. Consequently, EWS constitutes a critical tool to bolster adaptation efforts at the national level and within the infrastructure sector.

Similarly, the inclusion of actions to enhance inter-island connectivity and link SIDS economies to regional markets and global supply chains was not mentioned by many countries but remains a key action for SIDS. Climate-proofing airports, railways, and ports would be crucial to consider in the next iteration of adaptation strategic documents.

Figure 15. Status of Infrastructure as a Priority Sector in the NDCs and NAPs by Type and Detail of Goal for all Regions



5.1.3 Water

Water is the joint second most prioritized sector among SIDS, followed closely by Health. The study consolidated several key sectors under this category, including Water, Water Resources, Water Supply, Hygiene, and Sanitation. Table 5 showcases examples of adaptation measures and objectives concerning water as a sector across SIDS.

Adaptation measures within the water sector often intersect with other sectors in addressing the challenges posed by climate change, notably infrastructure, forestry, and agriculture. Many measures have implications for health-related outcomes.

Adaptation actions in the water sector are mostly institutional, physical, and structural adaptation activities (Box 6)—meaning those aiming at enhancing the regulations and built environments of the water systems. For

instance, SIDS are prioritizing actions like building climate-proof and environmentally sustainable water infrastructure (engineered and built environments), retrofitting and rehabilitating water infrastructure per climate needs (engineered and built environments), designing and implementing integrated water resources management (IWRM) programs in watersheds (policies and programs), establishing or strengthening national/sub-national and local water management policies (policies and programs), among others. Many of these activities focus on alleviating physical climate risks associated with adverse impacts on assets and strengthening the capacity of the government to effectively manage their water systems.

Other, less mentioned, measures focus more on social adaptation activities, such as establishing a national water quality management and monitoring system to enhance the sustainable

use of water (informational), introducing more efficient food production, measures for crop changes, livestock management, smart irrigation, water harvesting, and planting calendars, to make water use more efficient (behavioral), and strengthening climate risk management through mapping and modeling climate impacts

to develop a better understanding of the sector risks (informational). These activities focus more on providing information to address systemic barriers to adaptation by strengthening the target beneficiary’s or user’s ability to understand and respond to physical climate risks.

Table 5. Examples of Common Adaptation Measures in the Water Sector

Adaptation Measure, Goal, or Activity	Example of Countries’ Goals
Build climate-proof and environmentally sustainable infrastructure to protect water resources.	East Timor: Enhancing water harvesting storage tanks and irrigation farm ponds, distribution, and management systems, particularly in drought-prone areas.
Retrofit and rehabilitate water infrastructure per climate needs and extend network to more areas.	Federate States of Micronesia: By 2030, provide universal access to clean drinking water for people through refurbishment of existing water infrastructure and extension of network to unserved and underserved areas.
Establishment or strengthening national/sub-national and local, watershed, water resource, water access, water and hygiene, water safety, and/or drought management policies or plans to increase efficiency of drinking water use and supply mechanisms.	Sao Tome: Elaboration and implementation of the integrated watershed management and updated revision of the Water and Hygiene Master Plan.
Promote and improve the infiltration and replenishment of water resources through NbS.	Cape Verde: Use NbS such as soil cover for humidity, altitude moisture and rain vegetative harvesting, slope stabilization, and agroforestry to improve water resources.
Design and implement an integrated water resources management (IWRM) program.	Belize: Implement an IWRM program in watersheds to reduce the impacts of climate change, including the establishment of an IWRM agency.

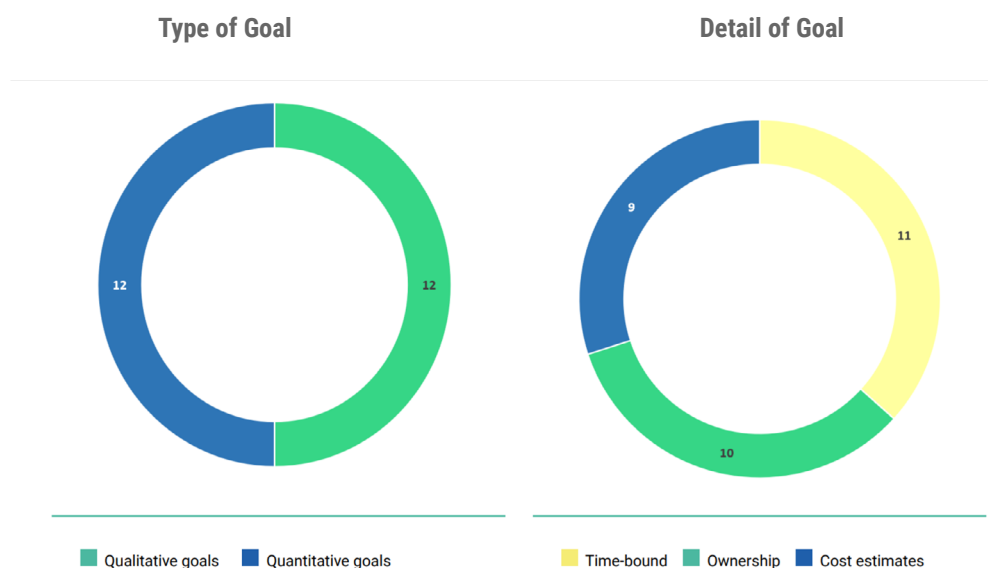
The study found 12 sectoral plans with qualitative descriptions of goals related to the water sector. Twelve sectoral plans outlined goals with quantitative measures of progress (Figure 16a). Concerning the level of detail of the goals: 11 were time-bound, ten had ownership, and nine had cost estimates (Figure 16b). These results follow the overall pattern of NDCs and NAPs for SIDS—indicating the need for SIDS to develop more detailed goals that allow investors to understand the adaptation pathways of their countries. Further, cost estimates for adaptation goals are rarely included in water sector goals—showcasing the need for enhanced capacity in this aspect.

Due to their high vulnerability to hydrological events (hurricanes, storm surges, heavy rainfall, etc.), strengthening climate risk management for SIDS through mapping and modeling of climate impacts is recommended. Further, few SIDS mentioned establishing early warning systems for drought and floods to support the

management of water resources—enabling early action to save and protect lives, livelihoods, and assets of people at risk.

The cross-sectoral nature of the water sector makes it crucial that countries strengthen the institutional coordination mechanisms to avoid duplication of efforts and enhance the impact of adaptation actions. For instance, strengthening and developing goals on the implementation of IWRM as a holistic framework used to address the diverse demands and pressures on water resources across sectors and at different scales can also help address multiple challenges in sectors such as agriculture.

Figure 16. Status of Water as a Priority Sector in the NDCs and NAPs by Type and Detail of Goal for all Regions



5.1.4 Health

The health sector emerges as the third most prioritized sector among SIDS. The study grouped the following stated key sectors under the umbrella of Health: Health, Wellbeing, and Public Health. Table 6 highlights examples of various SIDS’ adaptation measures and goals in relation to health.

According to our analysis, the type of adaptation actions SIDS focus more on are a mix of social, and physical and structural adaptation activities (Box 6)—meaning those aiming at enhancing the resilience of critical services, as well as providing information to address systemic barriers to adaptation. For instance, for the health sector, SIDS are prioritizing actions like implementing early warning systems for monitoring specific diseases, vectors, and high temperatures for

the prevention of climate-related diseases (informational), retrofitting health facilities to meet climate change standards, including protection against wind, and floods, as well as increase water storage capacity during dry spells (engineered and built environment), conducting public-awareness campaigns on climate-related health impacts (educational), and conducting research on climate-sensitive diseases (educational).

The adaptation efforts within the health sector aim to address two main goals. Firstly, they seek to mitigate or lessen the direct physical risks posed by climate change and its impacts on assets, economies, communities, and ecosystems. Secondly, these initiatives aim to tackle systemic obstacles to effective adaptation by providing relevant information.

Table 6. Examples of Common Adaptation Measures in the Health Sector

Adaptation Measure, Goal, or Activity	Example of Countries' Goals
Implement early warning system for monitoring specific diseases, vectors, and high temperatures for the prevention of climate-related diseases.	Federal States of Micronesia: By 2030, establish a surveillance system to detect and monitor VBD, WBD, and FBD, including a laboratory, to enable rapid response and control of outbreaks.
Retrofit health facilities to meet climate change standards.	Jamaica: Financing retrofitting of health facilities—including protection against wind and floods, as well as increase water storage capacity during dry spells—to meet climate change standards.
Conduct research on climate-sensitive diseases, (heat stress and respiratory, water, vector-borne diseases) to document evidence and support local interventions, and other health-related issues.	Cabo Verde: Create a country-specific profile for climate change and health, and improve the national database for diseases. Set up a research project to identify health effects of climate change on animals and vegetable species.
Conduct a public-awareness campaign on climate related health impacts.	Suriname: Conduct a public-awareness campaign on climate related health impacts, such as dangers of prolonged heat stress and vector-borne diseases.
Carry out mapping, and vulnerability and adaptation assessments of national health risks.	East Timor: Develop a health database and data management system which includes climate sensitive health risk and vulnerability information to facilitate effective, targeted, and efficient delivery of health service.

Similarly to the results of the water sector, the study found 12 sectoral plans with qualitative descriptions of goals related to the health sector. Twelve sectoral plans outlined goals with quantitative measures of progress (Figure 17a). In relation to the level of detail of the goals: 11 were time-bound, ten had ownership, and nine had cost estimates (Figure 17b). These results indicate the need for SIDS to develop more detailed goals with cost estimates that allow investors to understand the adaptation pathways of their countries.

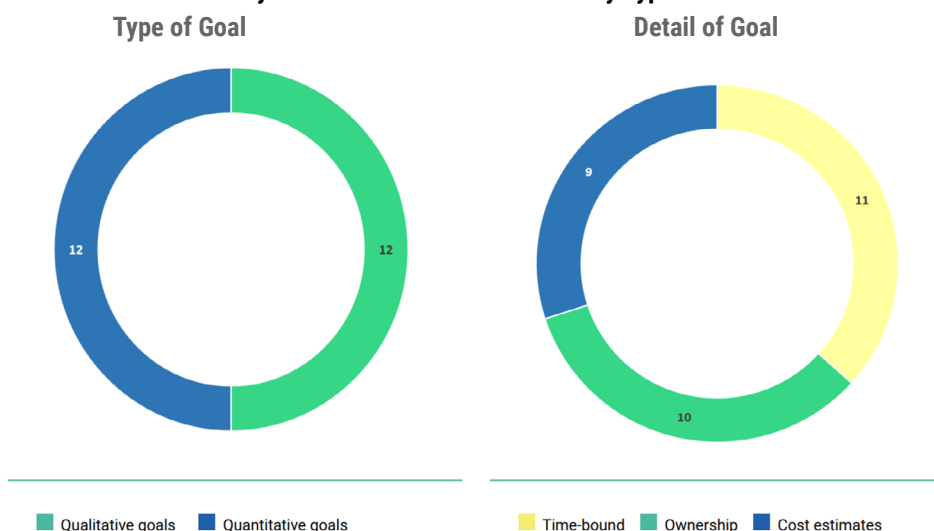
Despite the broad focus of the adaptation measures communicated by SIDS, the addition of certain adaptation actions into sectoral plans can bolster the resilience of their health systems. Considering that climate change adaptation and its relation to the health sector is still a topic that needs further research, conducting comprehensive mapping exercises and vulnerability assessments to identify national health vulnerabilities is an essential task to be carried out by SIDS. There is a need for national health and environment agencies to systematically assess climate-related risks to health systems and health outcomes to develop

national health adaptation plans to ensure the population is resilient to climate shocks and stresses. Further, mainstreaming adaptation into the different levels of government and sectors is crucial to building the resilience of a country, therefore, SIDS can benefit from conducting capacity-building initiatives aimed at educating healthcare professionals and public health officials about climate change and its associated health risks to enhance cross-sectoral coordination.

Another recommendation is to consider establishing medical centers near potential risk zones and hospitals in areas that are not vulnerable to climate-change. This would promote equitable and timely access to affordable and quality healthcare for all, and offer communities a safety net in case of climate shocks.

Including these adaptation activities to the planned NDC and NAP measures can support further strengthening of the sector's resilience to climate change and spread knowledge among stakeholders of the importance of adaptation.

Figure 17. Status of Health as a Priority Sector in the NDCs and NAPs by Type and Detail of Goal for all Regions



The looming impacts of climate change are expected to have a very disruptive impact on the health sector. Climate change can exacerbate diseases linked to warmer climates and extreme weather events, disproportionately affecting the poorest and most vulnerable sections of the population. Additionally, hydrological extreme weather events for SIDS, exacerbated by climate change, can have stark impacts on healthcare system infrastructure, adding challenges to the sector. Therefore, it is crucial to enhance efforts to apply the insights and strategies of well-planned and systematic climate adaptation strategies that address the health gap to create a strong line of defense against the impacts in the sector that will almost inevitably accompany a warming climate.

5.2 Highlighting Less Discussed Priority Adaptation Sectors, Themes, and Gaps

Communities and coastal environments of Small Island Developing States are deeply connected. Many cities, human settlements, and tourism developments are located along coastal zones. This high interdependency of people and sectors along the coast renders SIDS extremely exposed to hazards associated with the ocean. Despite this, 11 countries did not identify oceans and coastal zones as a priority sector for adaptation in their NDCs and/or NAPs. Further, only 16 (less

than half) outlined a sectoral plan for human settlements, while 20 (just over half) provided a plan for adaptation in the tourism sector. Our analysis additionally revealed thematic gaps—including difficulties accessing international finance, poor climate information and knowledge management, as well as a lack of inclusive approaches.

5.2.1 Oceans and Coastal Zones

Hazards

Hazards associated with the ocean include sea-level rise, extreme wave height, increasing levels of precipitation, storm surges, fast winds, marine heatwaves and ocean acidification—all of which are projected to increase with a warming climate.²⁷ With further increases in global temperatures, the average intensity of tropical cyclones is expected to increase along with amplified magnitudes of storm surges and precipitation.²⁸ Impacts of coastal flooding from tropical cyclones and storms is further compounded by sea-level rise, causing damage to areas that are increasingly farther inland.²⁹ It is expected that a 5–10cm of additional sea-level rise will be seen regionally between 2030 and 2050, resulting in a doubling of flooding frequency in much of the Indian Ocean and Tropical Pacific.³⁰

Marine heatwaves and ocean acidification contribute to coral bleaching as well as declines

in coral abundance, which is occurring in many small islands. This is especially prevalent for those located in the Pacific and Indian oceans. Globally, inclusive of SIDS, projections of warming 1.5°C above pre-industrial levels are expected to result in a further loss of 70–90 percent of reef-building corals, with an expected 99 percent of corals being lost if warming reaches 2°C.³¹ Coral reefs provide critical habitats for fish and serve as fishing grounds for many island communities, the loss of which results in cascading impacts for livelihoods of many populations.

Ocean warming and acidification are also related to increases in the frequency and extent of algal blooms. The Caribbean, in particular, is facing an increased presence of Sargassum seaweed. Seaweed drifts into the Caribbean Sea adversely affect both fisheries and coral, and can accumulate on coasts up to several meters high. The impact of these algal blooms can be

seen on food security, tourism, human health, and local economies in SIDS. Negative impacts of changes in ocean characteristics are also seen in loss of coastal wetlands and ecosystems such as mangrove forests and seagrass, which serve as carbon stores, aid in the prevention of coastal erosion, provide protection from extreme sea-level events, and support biodiversity.³²

Exclusive Economic Zones (EEZs)—the sea area in which a state has exclusive rights for exploration and use of marine resources³³—of SIDS are often larger than their land area. Samoa’s EEZ, for example is eight times larger than its land area.³⁴ These large exclusive economic zones also render SIDS highly exposed to oceanic changes.³⁵ Table 7 presents gaps within the sector of Oceans and Coastal Zones, along with examples from countries which are trying to address these gaps.

Table 7. Gaps within Oceans and Coastal Zones Sectoral Plans with Spotlighted SIDS Examples

Gaps within Sector	Example of Countries’ Goals
Human resource, technical, and institutional capacity	<p>Grenada: Establish a Coastal Zone Unit/Board, based on the existing Coastal Zone Task Force; acquiring funds will be necessary to ensure appropriate initial staffing of the Unit/Board, including coastal engineers, GIS experts, marine biologists, environmental lawyers, etc.</p> <p>Strengthen technical capacity of Coastal Zone Task Force/Coastal Zone Unit members (and others), in a variety of different areas of Integrated Coastal Zone Management such as: coastal water quality analysis, coastal planning, coastal engineering, coastal project management, hydrographic surveying, draughtsman, data analysis, archiving and modelling for coastal vegetation, etc.</p>
Sargassum influx responses*	Saint Kitts and Nevis: Develop and implement emergency response plan for sargassum stranding.
Invest in blue economy development	Cape Verde: Create a blue fund by 2023 for domestic and international financing of the blue economy. Exploit payments for environmental services to support the blue economy.
Ecosystem-based approaches: coral reef restoration, mangrove replanting**	<p>Papua New Guinea: Coastal rehabilitation and protection to enhance resilience of coastal communities and ecosystems:</p> <ul style="list-style-type: none"> • Mangrove management and rehabilitation • Planting of seagrass and coral replanting, rehabilitation, and protection • Protection and promotion of biodiversity conservation through Ecosystem based Adaptation (EbA) approaches.
Exclusive Economic Zones (EEZ) protection	Fiji: To establish 30 percent of its Exclusive Economic Zones (EEZ) as Marine Protected Areas and work towards 100 percent management of EEZ by 2030 through the implementation of the National Ocean Policy.

* Gap within the Caribbean region.

** Gap within the AIS and Pacific regions

National adaptation plans can address biodiversity loss in coastal ecosystems through developing an integrated waste management system and incorporating measures for controlling sources of marine plastic pollution; overfishing; Illegal, Unreported and Unregulated (IUU) fishing; coral bleaching; ocean acidification; eutrophication and Harmful Algal Blooms (HABs); and coastal erosion. For this, improving satellite monitoring and modernizing national data infrastructure and systems is essential for SIDS.

The sustainable use of marine resources mutually reinforces economic and environmental benefits for SIDS. This includes sustainable management of fisheries, aquaculture, mariculture, and tourism. In this regard, the adoption of area-based management tools, including Marine Protected Areas, Integrated Coastal Zone Management (ICZM), and locally managed marine areas (LMMAs) are recommended.

Human Settlements

A significant proportion of populations, infrastructure, and assets in SIDS are located along low-elevation coastal zones of below 10 m elevation,³⁶ and thus are highly exposed to climate hazards. The majority of households in Saint Lucia, for example, are located within 10

km of the sea, with approximately half of the population living in and around the low-lying city of Castries. In Jamaica, approximately 55 percent of informal settlements are located on flood plains and along the coast. An increase in the frequency of coastal flooding and overwash events in SIDS are expected to cause huge infrastructure damage and the loss of freshwater aquifers, contributing to uninhabitability.

Numerous SIDS, particularly islands located in the Pacific, are experiencing large land loss associated with sea-level (SLR) rise. The Solomon Islands has already lost several low-lying islands due to SLR over the past several decades. Nuatambu (an island in the Solomons) has lost more than half of its habitable area including 50 percent of its houses, directly attributable to shoreline recession. This has led to the forced relocation of communities.³⁷

Medical facilities are often situated in low-lying areas, either along or very near to coastal areas, and while telecommunications infrastructure and major power supply networks may be further inland, distribution centers are often found in populated areas along the coast. Despite this, only 16 SIDS outlined a sectoral plan for human settlements. Table 8 presents gaps within the sector, along with examples of measures being used by SIDS to address these issues.

Table 8. Gaps within Human Settlements Sectoral Plans with Spotlighted SIDS Examples

Gaps within Sector	Country Examples of Measures to Address Gaps
Large-scale reallocation	<p>Fiji: Develop a national-level systematic strategy which can identify and prioritize communities for relocation based upon vulnerability maps, guide subsequent relocation efforts, identify, and fulfil capacity building needs of communities once relocated, as well as incentivize and fund relocation of communities.</p> <p>Scale up efforts to strengthen coastal boundaries of urban centers and rural communities through hybrid or nature-based solutions to slow the need to relocate communities and infrastructure.</p>
Accelerate policy, legislative, and regulatory processes	<p>Saint Kitts and Nevis: Develop and implement national land development policy. Update building codes to account for increased climate hazards.</p> <p>Saint Lucia: Develop legislation reforms to link property insurance, construction quality, and climate risk level of the property location.</p>
Access to insurance mechanisms	<p>Dominican Republic: Facilitate access to an insurance system for damages linked to climate events for the different structures and components of human settlements</p>
Enhance port operations and safety	<p>Saint Lucia: Assess and strengthen the resilience and operational thresholds in the coastal infrastructure.</p>

Tourism

Tourism developments and infrastructure in SIDS are often situated in low-lying areas either along or very near to coastal areas. The industry is also largely based on natural resources, especially marine resources. This sector is thus significantly affected by extreme weather events, flooding, coastal erosion, and other impacts of climate change and human activities.

Not only is tourism reliant on environmental conditions and thus impacted by climate change, but the sector is also critical for many

SIDS' national economies. As of 2020, coastal-based tourism makes up more than 20 percent of the national gross domestic product (GDP) for more than half of SIDS. For some islands, tourism contributes more than 50 percent of the GDP.³⁸ Despite the pressing need to enhance the resilience of the tourism sector in SIDS, only 20 countries (just over half) provided a plan for adaptation in the tourism sector. Table 9 presents gaps within the sector, along with examples of measures being used by SIDS to address these issues.

Table 9. Gaps within Tourism Sectoral Plans with Spotlighted SIDS Examples

Gaps within Sector	Country Examples of Measures to Address Gaps
Coastal tourism alternatives	<p>Grenada: Conduct a strategic and climate-smart plan for inland and coastal tourism development zones with a focus on providing alternatives to coastal tourism and diversifying the tourism product to decrease ecosystem stress from coastal tourism (e.g. cultural/culinary tourism, hiking, agro-tourism, etc.) Include results in the update of relevant tourism plans.</p>
Safeguarding coastal biodiversity	<p>Maldives: Implement measures to reduce sources of pollution on coral reefs and ecosystems, especially marine life, through appropriate policies, development of appropriate treatment facilities, management and safe disposal of solid waste. Consider the timely phasing-out of single-use plastics.</p> <p>East Timor: Identify areas that are biodiversity hotspots or that are/could be vulnerable to over-exploitation by the tourism sector and introduce zonation and prohibition mechanisms.</p> <p>Mauritius: Develop and implement an integrated approach aligned with coastal zone and biodiversity/forestry sectors.</p>
Strengthening the market for climate-resilient nature-based tourism	<p>East Timor: Promote eco-tourism with adequate environmental management aspects integrated into the eco-tourism approach.</p>

Adaptation actions aimed at minimizing pollution and waste, conserving, and protecting the environment, respecting wildlife, and safeguarding biodiversity are all essential for a thriving and sustainable tourism sector in SIDS.

It is important that while promoting resilient and sustainable tourism, SIDS ensure the protection of local populations from negative impacts arising from interventions in upstream and downstream tourism services. Creative and innovative employment solutions within the tourism sector, including for informal workers and entrepreneurs, can contribute to increased resilience in the workforce.

It is important to raise awareness about sustainable tourism, as well as enhance education and training in cultural and heritage management and preservation. Investing in resilience-building actions of cultural heritage, assets and infrastructure, and traditions and customs, can contribute significantly to enhanced adaptation of the tourism sector across SIDS.

5.2.2 Finance

All but four SIDS mention a lack of funding as a barrier to carrying out adaptation actions in their strategic adaptation documents. Despite the urgent need for financial support, international adaptation finance flows to SIDS have, to date, been insufficient. SIDS face significant challenges in attracting international adaptation finance, largely due to limited capacity

encompassing a lack of necessary infrastructure, institutional frameworks, and technical expertise. Multiple international reporting obligations, planning, and implementation commitments compound to form bottlenecks within already capacity-limited governmental institutions.

Additionally, the complexities of accessing climate finance, including stringent eligibility criteria and lengthy application processes, further exacerbate the challenge for SIDS. Higher income SIDS, such as Barbados, face additional hurdles in securing international financial assistance due to prioritization of funding mechanisms to lower-income countries.

As stated in Section 4.2.4, providing quantitative estimates of the financial requirements of adaptation components of national adaptation plans is crucial for attracting support and mobilizing resources from international donors, development agencies, and financial institutions. Clearly stating the financial needs helps to bridge the gap between the available resources and the required funding, ensuring that SIDS can access the necessary financial support to implement their adaptation actions.

Only ten SIDS out of 35 quantified their adaptation needs estimates. On the other hand, seven have established finance as a priority sector for adaptation, in which a plan for mobilizing finance is outlined. These countries are great examples of proactive planning to enable effectively accessing and utilizing climate funds.

Tonga and Vanuatu: Comprehensive Adaptation Finance Sectors

Tonga's JNAP2 aims to ensure that all stakeholders have access to funds for both the development and implementation of plans. The Tonga Climate Change Fund is an important mechanism for accessing funds with the Resource Mobilization Plan prioritizing the fund's annual expenditure. Tonga also seeks to develop a donor and partner coordination mechanism to ensure their alignment with the JNAP2. Activities included in this objective are to conduct national climate resilience donor roundtables and to undertake analysis of suitable institutions for accreditation to Direct Access funds. Additionally, Tonga is developing a strategy to support community access to funds for community development plans, inclusive of tracking the allocation of funds for gender and social inclusion in climate change and disaster risk

management projects and developing a simplified and harmonized procedure for disbursement of funds to communities.

Vanuatu communicates four commitments within its finance sector, each linked to a sector policy, the most relevant SDG Goal, and conditional and unconditional financial estimates. One commitment is identifying innovative sustainable financing mechanisms to support the establishment and management of ecosystem-based climate adaptation. These may include initiatives such as a green tax, tax benefit systems, establishment of trusts or endowment funds, payment of ecosystem services, and exploring options for climate change and disaster risk reduction insurance or risk-sharing schemes. These actions are linked to the National Biodiversity Strategy and Action Plan and the Vanuatu Climate Change and Disaster Risk Reduction (CCDRR) Policy 2016-2030. The estimated finance needed for carrying out this task is about US\$900,000, with 90 percent of the amount being conditional on international support.

Another commitment is obtaining National Implementing Entity accreditation from the major climate change funds, including by meeting fiduciary standards and making measurable improvements in climate change and disaster risk reduction budgeting, financial statements, reporting, audit processes, procurement practices, project management, and transparency policies (linked to the CCDRR), and gender-responsive budgeting for climate change, including prioritizing climate financing tools that target women's grassroots initiatives and resilient development outcomes (linked to the National Sustainable Development Plan (NSDP)). These commitments are estimated at US\$800,000 (90 percent conditionality) and US\$460,000 (80 percent conditionality) respectively.

It is recommended that all countries explicitly highlight finance as a priority area within their strategic adaptation documents, not only calculating adaptation cost and need estimates, but also outlining a clear plan for accessing the necessary climate finance.

Recommendations for SIDS to leverage greater financial support for adaptation action include tapping into private finance, strengthening capacity for investment flows monitoring, firm-level data collection and analysis, and trade-related support to attract investment and financing.

5.2.3 Climate information and knowledge management

A lack of climate information poses a significant barrier to effective adaptation planning for SIDS. Up-to-date climate model data are not widely available to communities in most SIDS. Challenges pertaining to climate information mentioned by SIDS include insufficient data coverage, inadequate research, risk and

vulnerability assessment results that are not connected to planning processes, as well as weak information management.

Many SIDS recognize the importance of assessing impacts, risks, and vulnerabilities to climate change, yet the inclusion of such assessments in planning processes is lacking, with few assessments referenced in the adaptation documents. Haiti's Adaptation Communication, for example, states that there has been little research done on coastal zones, tourism, infrastructure, and biodiversity—and signaled their intent to conduct vulnerability assessments of these sectors.

In addition to ensuring that studies adequately feed into the adaptation planning process, it is necessary to monitor and evaluate the impact of the actions carried out. Systematic research on what adaptation actions are working/not working can guide policymakers. However, limited capacity and data to undertake high-quality adaptation science and policy research, as well as limited finances, are significant constraints to making progress.³⁹ Vulnerability

assessments must clearly identify vulnerability factors and provide indicators for measuring resultant changes in the systems concerned.

Lack of climate information also relates to inadequate knowledge management. There is a growing appreciation of climate knowledge brokerage to support effective adaptation through strengthening the science-policy interface and translation between knowledge producers and users. Knowledge brokers serve important roles as sources of contextually relevant climate information between actors and across sectors.⁴⁰ Despite this recognition, there

still exists gaps in the mapping and integration of knowledge brokering in adaptation planning and actions, highlighting an opportunity for SIDS to build resilience through enhanced knowledge management. Box 8 presents centralized data tools and repository portals already in existence that can help facilitate knowledge sharing between stakeholders.

Regional Cooperation and Tools to Support Planning and Implementation of Adaptation

Enhanced regional coordination within SIDS has led to the development of tools and web portals to support adaptation. In the Caribbean, the Caribbean Community Climate Change Centre (CCCCC) provides practical support and coordination for adaptation action. The CCCCC developed the Caribbean Climate Online Risk and Adaptation Tool (CCORAL)⁴¹ which supports the climate-proofing of plans, strategies, and projects by non-climate experts. It assists users in identifying appropriate adaptation actions and further recommends other end-to-end climate risk management tools to support adaptation planning.

Grenada has worked to utilize the tool for integrating climate change considerations into key documents and the sensitization of various stakeholders from ministries, the private sector, and NGOs. Additionally, Grenada has introduced the requirement that the project submission form for the Public Sector Investment Programme should undergo CCORAL screening. Saint Lucia aims to promote the use of CCORAL for integrating climate change proposals into adaptation proposal writing.

In the Pacific, the Secretariat for the Pacific Regional Environment Programme (SPREP) leads regional-level adaptation support, and is supported by the Pacific Community, the University of the South Pacific, and others. This increased collaboration has led to the development of numerous tools and web portals for the region. The Pacific Climate Change Portal,⁴² established by SPREP, is an information repository and a home for regionally-relevant tools. It aims to ensure that climate change related information is available and easily accessible in a user-friendly manner, to help strengthen understanding of climate change issues by a greater number of people in the region.

To address the gaps in climate information and knowledge, more resources can be pooled towards increasing access to climate information, adequately downscaling climate data, and facilitating knowledge brokering across sectors. More needs to be done to address the gap in vulnerability assessments in certain sectors, and to connect the results from local

or sectoral analysis to national-level adaptation planning processes.

Investing in institutional and human resources for collecting quality, accessible, timely, reliable disaggregated data should be of high priority for SIDS. This helps to enable evidence-based policy decisions, measure progress, and increase

access to climate adaptation finance. Further, substantial structural challenges hinder the promotion and use of science, innovation, and digitization to drive green economic growth. There is an opportunity for SIDS to enhance the integration of data into adaptation planning through investment into modernizing national data infrastructure.

5.2.4 Inclusion

The complexity of compounding impacts of climate change is a key challenge for effective governance of coastal climate hazards. Drawing on multiple knowledge systems to co-design and co-produce adaptation action can lead to more effective and sustainable adaptation responses,⁴³ and strengthening the cooperation between

communities and governments is essential for developing and implementing strategies to respond to extreme events.

The Ridge to Reef (R2R) approach is a whole-of-ecosystem approach that encompasses integrated management across freshwater and coastal zone management—emphasizing the inter-connections between natural and social systems. It seeks to foster effective cross-sectoral coordination in the planning and management of freshwater use, sanitation, wastewater treatment and pollution control, sustainable land use and forestry practices, while balancing coastal livelihoods and biodiversity conservation, and hazard risk reduction. Table 10 presents examples of R2R mentioned in SIDS strategic adaptation documents.

Table 10. Mentions of Ridge to Reef Approaches in SIDS Strategic Adaptation Documents

Country	Example of R2R Approach
Seychelles	Committed to implementing a Marine Spatial Plan and to sustainably manage the protected marine areas that make up 30 percent of its EEZ. These actions support the country's 'Ridge to Reef' approach to adaptation, that recognizes the interconnections between terrestrial, coastal, and marine ecosystems and adaptation strategies to protect, manage, and restore them.
Saint Kitts and Nevis	Invested in research and practices for integrated coastal zone management, R2R and watershed management, ecosystem approaches to fisheries and marine spatial planning.
Papua New Guinea	Committed to developing a sustainable R2R program to enhance the resilience of vulnerable communities and to improve food and water security.

Building resilience and improving adaptation outcomes within SIDS is greatly bolstered by embedding local and indigenous knowledge, as well as integrating cultural resources into decision-making.⁴⁴ The Community to Cabinet approach involves the integration of communities, stakeholders, and national governments. It emphasizes participatory approaches that integrate local knowledge through including stakeholders in the planning, implementation, and M&E of adaptation actions.

In doing this, it is important to acknowledge the role of Indigenous Peoples as custodians of biodiversity and ensuring their traditional knowledge and practices are documented, and

culture preserved. Their participation in decision-making needs to be in accordance with relevant national legislation, international instruments (including the UN Declaration on the Rights of Indigenous Peoples), and human rights law.

Additionally, it is vital to invest in the education and skills of young people to enable them to pursue economic and productive opportunities. This includes support for youth-driven startups and entrepreneurship, including providing financial backing, mentorship, and other capacity building and training initiatives. This will significantly help SIDS build economic resilience and diversification.

6. SMALL ISLAND DEVELOPING STATES AND AFRICA: COMPARISON OF RESULTS

As mentioned above, the framework used in this analysis has been applied to both Small Island Developing States and the African continent. Comparison of our findings from these two groups yielded interesting distinctions and similarities in the enabling environment for investment readiness. Table 11 below provides an overview of these findings, followed by a brief discussion.

Note that calculations were made based on proportion of countries with evidence of each indicator in their strategic adaptation documents. Percentages do not add up to 100 in many cases as a result of cases in which countries provided no evidence of the indicator.

Table 11. Comparison of Analysis for Africa and Small Island Developing States Along each Indicator of the Framework

Indicators	Africa	Small Island Developing States (SIDS)
Institutional Arrangements	<p>58 percent of African countries have developed mature institutional frameworks that engage various ministries and branches of government.</p> <p>20 percent of these countries have dedicated ministries leading climate-related initiatives.</p> <p>5 percent have yet to show evidence of initiating the process of establishing institutional arrangements.</p>	<p>54 percent of SIDS have established mature institutional frameworks involving multiple ministries and government branches to implement adaptation goals.</p> <p>11 percent have dedicated ministries overseeing climate-related initiatives.</p> <p>20 percent of SIDS have not yet begun the process of setting up institutional arrangements</p>
Development of Sectoral Plans	<p>30 percent of countries are currently in the process of preparing one.</p> <p>89 percent of countries have articulated either qualitative or quantitative goals.</p> <p>36 percent provided detailed goals.</p>	<p>29 percent of countries are currently engaged in this process.</p> <p>69 percent of countries have articulated either qualitative or quantitative goals.</p> <p>29 percent provided detailed goals.</p>
Monitoring and Evaluation	<p>2 percent of African countries have set up an M&E system</p> <p>32 percent have provided a basic plan to develop one.</p>	<p>11 percent of SIDS have set up an M&E system</p> <p>25 percent provided evidence of a basic plan to develop one.</p>
Finance Estimates	<p>42 percent of countries have provided detailed information on the financial resources required to implement their specific adaptation goals.</p> <p>24 percent have presented a general estimate of conditional finance needed.</p>	<p>29 percent of countries have excelled in providing detailed information on the financial resources necessary for implementing their specific adaptation goals.</p> <p>9 percent have offered evidence of a general estimate of conditional finance required.</p> <p>63 percent however, have yet to calculate the costs associated with implementing their commitments and strategic plans.</p>

Linkages with Disaster Risk Reduction and Loss and Damage	40 percent of countries made DRR a priority sector.	51 percent of countries made DRR a priority sector.
	17 percent integrated DRR into sectoral goals.	22 percent integrated DRR into sectoral goals.
	26 percent acknowledged the importance of L&D.	62 percent acknowledged the importance of L&D, with some countries making cost estimates and L&D a priority sector.

The comparison revealed strengths in the national strategic plans of each region of study. Small Island Developing States showcase exemplary efforts in aligning disaster risk reduction and climate change adaptation strategies. SIDS are leaders in international discussion around loss and damage, and accelerating the progression of the L&D fund. African countries show great commitment to and progress in calculating and communicating finance estimates of planned adaptation actions. This is a crucial step for attracting adaptation finance to the region.

Both regions show progress in and commitment to the development of National Adaptation Plans. This approach offers a more comprehensive understanding of planned adaptation actions compared to relying solely on Nationally Determined Contributions (NDCs), which historically prioritize mitigation over adaptation. There is a need, however, for both SIDS and African countries to further enhance the clarity of their priority sectors by communicating more

detailed climate goals, such as including clear timelines, ownership, and finance estimates.

Results of our analysis indicate that the monitoring and evaluation systems for adaptation policies and priorities are generally weak and require strengthening in both Africa and SIDS. This is, however, partly to be expected as it is an area of active research and learning worldwide, so there are no ready-made solutions to copy.

Significant progress has been made by both SIDS and in Africa in establishing institutional frameworks to plan, legislate, and manage the implementation of adaptation actions. However, in general, institutional development is relatively young in maturity in both regions. This presents a great opportunity for countries to invest in arrangements that facilitate coordinated adaptation actions across various levels of government and actors for enhanced leadership, coordination, prioritization, and funding for adaptation actions.

7. RECOMMENDATIONS

This report offers seven main recommendations for Small Island Developing States:

Enhance institutional arrangements for robust coordination and partnership capacity

The inclusion of multiple levels of government (national to local) and strengthened regional partnerships between Small Island Developing States is crucial for developing robust institutional arrangements for coordinated and effective adaptation planning and implementation. Investing and developing institutional arrangements that do not only rely on the Ministry of Environment but also include crucial ministries like Finance and Planning, which play a central role in the strategic directions and priorities for adaptation action at scale, is necessary to attract and disburse adaptation finance from the international community.

Strengthen monitoring and evaluation (M&E) systems for effective and transparent tracking

Monitoring and evaluation systems for adaptation policies and priorities in SIDS need strengthening. Regional cooperation can: help SIDS better understand climate risks and vulnerabilities; promote knowledge and data sharing; and facilitate sharing of best practices for establishing systems linked to national institutions and processes. Developing and communicating indicators to measure the success of adaptation efforts can promote transparency and a more inclusive and balanced approach to assessing and reporting on climate adaptation efforts.

Quantify adaptation cost and need estimates for effective planning to gain greater access to adaptation financing

Adaptation plans require greater specificity of

finance estimates, needs, and plans in order to secure international funding. It is crucial for SIDS to develop detailed cost estimates for financing adaptation actions and establish institutional arrangements capable of leading and implementing these actions effectively.

Strengthen considerations of all stages of disaster management—prevention, response, and post-disaster recovery—for a systematic response to climate shocks

More needs to be done to build robust multi-hazard and multi-sector risk governance. Training and awareness raising will help strengthen the capacity and tools provided to local, provincial, and national authorities. It is vital that SIDS strengthen early warning systems within sectors to ensure timely responses to climate shocks such as drought, coastal and inland flooding, as well as wildfires. Finally, considering all of the three stages of disasters is essential for SIDS: prevention (i.e., early warning systems), disaster (i.e., evacuation and refuge plans), and post-disaster recovery phases (i.e., insurance and basic relief support).

Ensure greater inclusion of Ocean and Coastal Zones—in relation to human settlements and tourism—to increase coastal resilience

Given the importance of coastal resilience for SIDS, every island state must prioritize the development and communication of a plan for coastal protection and should ensure coordination and integration with other key economic sectors, specifically human settlements and tourism.

Invest in modernizing national data infrastructure and human resources for improved data access and management

More needs to be done to address the gap in vulnerability assessments in certain sectors,

facilitate knowledge brokering across sectors, and to connect the results from local or sectoral analysis to national-level adaptation planning processes. There is an opportunity for SIDS to enhance the integration of data into adaptation planning through investment into modernizing national data infrastructure. Investing in institutional and human resources for collecting quality, accessible, timely, and reliable disaggregated data should be of high priority for SIDS. This will help to enable evidence-based policy decisions, measure progress, and improve access to climate adaptation finance.

Adopt a 'Community to Cabinet' approach

Drawing on multiple knowledge systems to co-design and co-produce adaptation action can lead to more effective and sustainable adaptation responses. Strengthening the

cooperation between communities and governments is essential for developing and implementing strategies to respond to extreme events. Island nations should adopt inclusive approaches, such as Ridge to Reef and Community to Cabinet. It is important to integrate local knowledge by including stakeholders in the planning, implementation, and M&E of adaptation actions. Additionally, SIDS should consider increasing investments in the education and skills of young people, enabling them to pursue economic and productive opportunities. This includes support for youth-driven startups and entrepreneurship, including providing financial backing, mentorship, and other capacity building and training initiatives.

8. ENDNOTES

- 1 https://gca.org/wp-content/uploads/2023/09/Strategy-and-Planning-to-Redouble-Adaptation-in-Africa_Web.pdf
- 2 UNFCCC. 2005. "Climate change, small island developing States". Issued by the CLIMATE CHANGE SECRETARIAT. https://unfccc.int/resource/docs/publications/cc_sids.pdf
- 3 <https://sdgs.un.org/smallislands/about-small-island-developing-states#:~:text=SIDS%20Facts%20%26%20Figures,across%20more%20than%201%20C000%20islands>
- 4 <https://sdgs.un.org/smallislands/about-small-island-developing-states#:~:text=SIDS%20Facts%20%26%20Figures,across%20more%20than%201%20C000%20islands>
- 5 UNFCCC. 2005. "Climate change, small island developing States." Issued by the Climate Change Secretariat. https://unfccc.int/resource/docs/publications/cc_sids.pdf
- 6 IPCC. 2022. "Fact sheet - Small Islands." Sixth Assessment Report. Working Group II – Impacts, Adaptation and Vulnerability. https://www.ipcc.ch/report/ar6/wg2/downloads/outreach/IPCC_AR6_WGII_FactSheet_SmallIslands.pdf
- 7 <https://sdgs.un.org/smallislands/about-small-island-developing-states#:~:text=SIDS%20Facts%20%26%20Figures,across%20more%20than%201%20C000%20islands>
- 8 UNDRR. 2023. "Pathways for Sustainable Development and Policy Coherence in the Caribbean Region through Comprehensive Risk Management." Disaster Risk Reduction And Climate Change Adaptation. <https://www.undrr.org/media/90864/download?startDownload=true>
- 9 Keo, K. and Jo, Y. 2022. "The State Of Climate Ambition." Small Island Developing States (SIDS). UNDP. https://climatepromise.undp.org/sites/default/files/research_report_document/Climate%20Ambition-SIDS%20v2.pdf
- 10 UNDP. 2023. "The State of Climate Ambition: Snapshots for Least Developed Countries (LDCs) and Small Island Developing States (SIDS)." <https://reliefweb.int/report/world/state-climate-ambition-snapshots-least-developed-countries-ldcs-and-small-island-developing-states-sids>
- 11 UNFCCC. 2005. "Climate change, small island developing States." Issued by the Climate Change Secretariat. https://unfccc.int/resource/docs/publications/cc_sids.pdf
- 12 UNDP. 2023. "The State of Climate Ambition: Snapshots for Least Developed Countries (LDCs) and Small Island Developing States (SIDS)." <https://reliefweb.int/report/world/state-climate-ambition-snapshots-least-developed-countries-ldcs-and-small-island-developing-states-sids>
- 13 UNDP. 2023. "The State of Climate Ambition: Snapshots for Least Developed Countries (LDCs) and Small Island Developing States (SIDS)." <https://reliefweb.int/report/world/state-climate-ambition-snapshots-least-developed-countries-ldcs-and-small-island-developing-states-sids>
- 14 UNFCCC. 2005. "Climate change, small island developing States." Issued by the Climate Change Secretariat. https://unfccc.int/resource/docs/publications/cc_sids.pdf
- 15 ND-GAIN Index. <https://gain.nd.edu/our-work/country-index/rankings/>
- 16 Two SIDS do not have a ND-GAIN readiness score (Niue and Cook Islands) and five do not have a ND-GAIN vulnerability score (Cook Islands, Kiribati, Niue, St. Vincent and the Grenadines, and Tuvalu).
- 17 OECD and SISRI. 2016. "Climate and Disaster Resilience Financing in Small Island Developing States." https://read.oecd-ilibrary.org/development/climate-and-disaster-resilience-financing-in-small-island-developing-states_9789264266919-en#page2
- 18 <https://sdgs.un.org/smallislands/about-small-island-developing-states#:~:text=SIDS%20Facts%20%26%20Figures,across%20more%20than%201%20C000%20islands>
- 19 Slany, A. 2020. "Multiple disasters and debt sustainability in Small Island Developing States." UNCTAD. https://unctad.org/system/files/official-document/ser-rrp-2020d14_en.pdf
- 20 <https://www.worldbank.org/content/dam/Worldbank/Climate%20change%20and%20natural%20disasters.pdf>
- 21 This includes a system of annual stress testing of insurance firms of their capacity to absorb disasters and development of the appropriate measures to address identified weaknesses.
- 22 UNDRR. 2013. "The Pacific Experience in Developing Policy and Legislation on Disaster Risk Reduction and Climate Change Adaptation." https://www.unisdr.org/files/34003_34003pacificexperienceonlegislation.pdf
- 23 UNDP. 2022. "The State Of Climate Ambition." Based on 2019 Climate Watch (CAIT) data, including Land Use, Land-Use Change and Forestry sector. https://climatepromise.undp.org/sites/default/files/research_report_document/Climate%20Ambition-SIDS%20v2.pdf
- 24 UNDP. 2022. "The State Of Climate Ambition." Based on 2019 Climate Watch (CAIT) data, including Land Use, Land-Use Change and Forestry sector. https://climatepromise.undp.org/sites/default/files/research_report_document/Climate%20Ambition-SIDS%20v2.pdf
- 25 UNFCCC. 2022. "Vanuatu's Updated Nationally Determined Contribution." <https://unfccc.int/documents/578782>
- 26 Owen, G. "What makes climate change adaptation effective? A systematic review of the literature." *Global Environmental Change* 62 (2020): 102071.
- 27 Thomas, A. et al. 2020. "Climate Change and Small Island Developing States." *Annual Reviews*. <https://www.annualreviews.org/doi/pdf/10.1146/annurev-environ-012320-083355>
- 28 Thomas, A. et al. 2020. "Climate Change and Small Island Developing States." *Annual Reviews*. <https://www.annualreviews.org/doi/pdf/10.1146/annurev-environ-012320-083355>
- 29 Thomas, A. et al. 2020. "Climate Change and Small Island Developing States." *Annual Reviews*. <https://www.annualreviews.org/doi/pdf/10.1146/annurev-environ-012320-083355>
- 30 IPCC. 2022. "Fact sheet - Small Islands." Sixth Assessment Report. Working Group II – Impacts, Adaptation and Vulnerability. https://www.ipcc.ch/report/ar6/wg2/downloads/outreach/IPCC_AR6_WGII_FactSheet_SmallIslands.pdf
- 31 IPCC. 2022. "Fact sheet - Small Islands." Sixth Assessment Report. Working Group II – Impacts, Adaptation and Vulnerability. https://www.ipcc.ch/report/ar6/wg2/downloads/outreach/IPCC_AR6_WGII_FactSheet_SmallIslands.pdf
- 32 Thomas, A. et al. 2020. "Climate Change and Small Island Developing States." *Annual Reviews*. <https://www.annualreviews.org/doi/pdf/10.1146/annurev-environ-012320-083355>
- 33 <https://oceanexplorer.noaa.gov/facts/useez.html#:~:text=An%20%E2%80%9Cexclusive%20economic%20zone%2C%E2%80%9D,both%20living%20and%20nonliving%20resources>
- 34 UNFCCC. 2005. "Climate change, small island developing States." Issued by the Climate Change Secretariat. https://unfccc.int/resource/docs/publications/cc_sids.pdf
- 35 Thomas, A. et al. 2020. "Climate Change and Small Island Developing States." *Annual Reviews*. <https://www.annualreviews.org/doi/pdf/10.1146/annurev-environ-012320-083355>
- 36 IPCC. 2022. "Fact sheet - Small Islands." Sixth Assessment Report. Working Group II – Impacts, Adaptation and Vulnerability. https://www.ipcc.ch/report/ar6/wg2/downloads/outreach/IPCC_AR6_WGII_FactSheet_SmallIslands.pdf
- 37 Thomas, A. et al. 2020. "Climate Change and Small Island Developing States." *Annual Reviews*. <https://www.annualreviews.org/doi/pdf/10.1146/annurev-environ-012320-083355>
- 38 Thomas, A. et al. 2020. "Climate Change and Small Island Developing States." *Annual Reviews*. <https://www.annualreviews.org/doi/pdf/10.1146/annurev-environ-012320-083355>
- 39 <https://irp.cdn-website.com/8bbcaf75/files/uploaded/Climate%20Change%20Adaptation%20in%20SIDS%20-%20SVR%20NS%20-%20Final.pdf>
- 40 Thomas, A. et al. 2020. "Climate Change and Small Island Developing States." *Annual Reviews*. <https://www.annualreviews.org/doi/pdf/10.1146/annurev-environ-012320-083355>
- 41 <https://ccoral.caribbeanclimate.bz/>
- 42 <https://www.pacificclimatechange.net/>
- 43 IPCC. 2022. "Fact sheet - Cities and Settlements by the Sea." Sixth Assessment Report. Working Group II – Impacts, Adaptation and Vulnerability. https://www.ipcc.ch/report/ar6/wg2/downloads/outreach/IPCC_AR6_WGII_FactSheet_CitiesSettlementsBtS.pdf
- 44 IPCC. 2022. "Fact sheet - Small Islands." Sixth Assessment Report. Working Group II – Impacts, Adaptation and Vulnerability. https://www.ipcc.ch/report/ar6/wg2/downloads/outreach/IPCC_AR6_WGII_FactSheet_SmallIslands.pdf

9. ANNEX

Table A.1 Countries within each SIDS Region

Caribbean	AIS	Pacific
Antigua and Barbuda	Cape Verde	Cook Islands
Bahamas	Comoros	Federated States of Micronesia
Barbados	Guinea-Bissau	Fiji
Belize	Maldives	Kiribati
Cuba	Mauritius	Niue
Dominica	São Tomé and Príncipe	Palau
Dominican Republic	East Timor	Papua New Guinea
Grenada		Marshall Islands
Haiti		Samoa
Jamaica		Solomon Islands
St. Kitts and Nevis		Tonga
St. Lucia		Tuvalu
St. Vincent and the Grenadines		Vanuatu
Suriname		
Trinidad and Tobago		

Table A.2 Example of Indicators Used by Country Per Sector and Region*

Country	Region	Sector	Objectives	Indicators to Assess Progress
Papua New Guinea	Pacific	General	Implement the NAP's capacity development plan	<p>Number of capacity building and training programs developed and rolled out (Goal 2 by 2027).</p> <p>Number of managerial and technical staff in national, sectoral, and provincial institutions trained in key themes to support CCA in Papua New Guinea (Goal 50 by 2027 and 100 by 2030, 50% men and women).</p>
Suriname	Caribbean	Agriculture, Livestock, and Fisheries	Integration of climate resilience into agricultural extension services.	<p>1. Increase the capacity and effectiveness of agriculture extension services.</p> <ul style="list-style-type: none"> • Behavior change documented on farmers. • Number of local persons trained. <p>2. Focus on community specific and local specific awareness and training.</p> <ul style="list-style-type: none"> • Number of farms using adaptation techniques. <p>3. Provide training and guidance in climate-smart crop production.</p> <ul style="list-style-type: none"> • Improved quality and quantity of food supply. • Number of farms using adaptation techniques.
		Health	Develop climate resilient health infrastructure and initiatives and integrate new technology and procedures into the health sector to enhance disease control.	<p>1. Establish medical centers near potential risk zones and hospitals in areas that are not vulnerable to climate-change impacts.</p> <ul style="list-style-type: none"> • Health and climate risk maps developed. • Number of healthcare indicators monitored. • Regularization of healthcare capacity reviews. <p>2. Introduce Early Disease Warning Systems that consider temperature signatures for vector borne diseases and other diseases.</p> <ul style="list-style-type: none"> • Increase in surveillance programs. • Increased risk mapping. • Increased early warning systems.
Palau	Pacific	Forest and biodiversity	By 2020, the enabling framework is established to build ecosystem resilience and sustainably manage carbon sinks using holistic and synergetic management approaches	<p>Intervention C.2 Improve management frameworks to strengthen the resilience of marine and terrestrial ecosystems and sustainably manage carbon sinks.</p> <ul style="list-style-type: none"> • # of species conserved. • # of marine are protected. • # of sanctuaries created. • Reduced amount of sediment entering reefs. • Policy written and adopted (forest management policy and regulations).
		Infrastructure	By 2020, enabling framework established to strengthen resilience of critical infrastructure while reducing its carbon footprint.	<p>Intervention F.2 Undertake site-specific risk assessments and develop risk management plans for vulnerable infrastructure (private, commercial, and government, particularly ports and docks).</p> <ul style="list-style-type: none"> • Data collected and entered (risk assessments to identify vulnerable infrastructure). • Risk management plans developed. • Upgraded sewer layer. • Lists of priority infrastructure improvements developed with costs. • Relocate the National hospital and finance for the relocation in place.
Grenada	Caribbean	Finance	Successful project applications ensure external climate finance support to Grenada's adaptation process.	<ul style="list-style-type: none"> • The GCF has granted Grenada financial support for readiness activities by 06/2017. • At least 2 project proposals to finance implementation of NAP activities are submitted to potential donors and/or investors. annually, starting in 2017. • At least one proposal of relevance for the implementation of NAP actions under Programme of Action 3 has been submitted to the GCF 12/2017.

*Note: This table includes original wording of indicators from country strategic documents.



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