Recognizing the adaptation efforts of developing country Parties: Draft Synthesis report on institutional arrangements and stakeholder engagement.

Internal zero draft

Recommended action by the Adaptation Committee

The Adaptation Committee (AC), at its 26th meeting, will be invited to consider this zero-draft paper* and provide further guidance to the secretariat on its further refinement, finalization, and publication.

Note: this draft follows the outline agreed upon at AC 25 and the annotated outline shared with the AC intersessionally. It serves to update progress with a view to producing a refined draft intersessionally by mid-October. Subsequent rounds of consultations with the AC, the Least Developed Countries Expert Group (LEG), and relevant substantive teams within the secretariat will refine and finalize the paper for publication ahead of COP 29. The current version is subject to data validation, editorial, bibliography, acronyms, footnotes, and formatting reviews. Professional design is subject to the availability of resources.

* *A zero-draft paper is an initial, preliminary version of a document that serves as a starting point for further development. The zero draft is typically used to gather initial feedback and set the stage for more structured and detailed revisions.*

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I. Introduction

1. Background

1. As part of the modalities for recognizing the adaptation efforts of developing country Parties, the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) requested the secretariat, under the guidance of the Adaptation Committee (AC) and the Least Developed Countries Expert Group (LEG) and in collaboration with relevant stakeholders, to prepare synthesis reports every two years starting in 2020. The synthesis reports shall focus on specific adaptation themes, focusing on relevant lessons learned and good practices in developing country Parties.[1] The CMA also recalled that the global stocktake will review the overall progress made in achieving the global goal on adaptation and acknowledged that adaptation efforts contribute to this objective.[2]

2. These series of biennial synthesis reports focus on specific adaptation themes, with an emphasis on capturing relevant lessons learned and good practices from developing country Parties. This mandate was established within the broader context of recognizing the adaptation efforts of developing countries.

3. The first synthesis report, published in 2020, explored "How developing countries are addressing hazards."[3] It provided a comprehensive overview of the strategies and approaches used by developing countries to mitigate the impacts of climate-related hazards.

4. The second report in 2022 focused on "Efforts of developing countries in assessing and meeting the costs of adaptation"[4] highlighting the approaches employed by developing country Parties in assessing adaptation costs and efforts to meet their rising financial needs.

5. At the 23rd meeting of the AC, potential topics for the 2024 synthesis report were considered. The AC agreed to merge two closely related topics: "Efforts of developing countries in setting up institutional arrangements to plan and implement adaptation at different levels of government" and "Efforts of developing countries in engaging stakeholders in adaptation planning and implementation." This decision was aimed at refining and streamlining the focus of the report to provide a more comprehensive analysis. Subsequent meetings (AC 24 and 25) further refined the draft outline for the report, including identifying possible next steps. At AC 25, the secretariat was requested to prepare an annotated outline of the report for intersessional consideration by the AC, followed by a first draft to be reviewed at AC 26, and a final draft for intersessional consideration in October 2024.

6. Thus, the third synthesis report is focused on the aspects related to the institutional arrangements and stakeholder engagement in relation to adaptation in developing countries The objective of the report is to synthesize relevant lessons, insights, and good practices in developing country Parties, with respect to the four elements of the iterative adaptation cycle (Risk and Vulnerability Assessments, Planning, Implementation, Monitoring, evaluation and learning) and other cross-cutting enabling factors and actions. This report explores these concepts, highlighting their interrelation and the progress made by developing countries in advancing their adaptation efforts.

7. The report is based on a review of national reports submitted to the UNFCCC secretariat, including NDCs, NAPs, Adcoms, TNAs, and TAPs, other relevant reports under the UNFCCC, reports from the operating entities of the UNFCCC financial mechanism and other relevant literature. The case studies have been selected based on the adaptation country profiles, developed by the AC, among other sources.

[1] See Decision 11/CMA.1 para 13.

[2] See Decision 11/CMA.1 para 14.

[3] See https://unfccc.int/process-and-meetings/bodies/constituted-bodies/publications-bulletin/how-developing-countries-are-addressing-hazards-focusing-on-relevant-lessons-learned-and-good.

[4] See https://unfccc.int/process-and-meetings/bodies/constituted-bodies/publications-bulletin/efforts-of-developing-countries-in-assessing-and-meeting-the-costs-of-adaptation-lessons-learned-and.

II. Relevance of institutional arrangements and stakeholder engagement for adaptation

8. The global challenge of climate change demands robust and coordinated efforts at all levels of governance, particularly in developing countries that are disproportionately affected by its impacts. In this context, "institutional arrangements" and "stakeholder engagement" emerge as critical concepts that enable effective adaptation planning and implementation (UNDP, 2019).[5] These arrangements play an important role in ensuring that adaptation efforts are integrated across various sectors and governance levels, from national to local. Effective institutional arrangements facilitate the alignment of policies, resources, and stakeholders, thereby enhancing the overall coherence and impact of adaptation strategies (IIED, 2020).[6]

9. The 2014 thematic report by the AC on "institutional arrangements for national adaptation planning and implementation"[7] laid the groundwork for understanding the critical role of these frameworks in enabling countries to respond to climate change. Since then, considerable progress has been made by developing countries in establishing and refining their institutional arrangements to better address the evolving challenges of climate adaptation.

10. There is no single definition for institutional arrangements for adaptation and the term is used in many different forms and contexts. For the sake of this report, institutional arrangements are interpreted as those structures, approaches, practices or rules set in place by stakeholders at all levels to steer adaptation action including for: assessing impacts, vulnerability and risks; planning for adaptation; implementation of adaptation measures; and monitoring and evaluation of adaptation.[8] In the UNFCCC process, stakeholder engagement refers to the active involvement of various groups, such as governments, civil society, the private sector, and indigenous communities, in the planning, implementation, and monitoring of climate adaptation and mitigation efforts. This engagement ensures that diverse perspectives are considered, enhancing the effectiveness and inclusivity of climate policies and actions (UNFCCC, 2016).[9]

11. Institutional arrangements provide the necessary structures and processes for coordinating adaptation efforts, while stakeholder engagement ensures that these efforts are inclusive, transparent, and responsive to the needs of those most affected by climate change (GCA, 2019).[10]

12. Stakeholder engagement, on the other hand, involves the active participation of various actors, including government agencies, private sector entities, civil society organizations, and local communities, in the adaptation planning and implementation process. This engagement is particularly important for ensuring that adaptation measures are inclusive, context-specific, and responsive to the needs of those most affected by climate change (OECD, 2015).[11]

13. Institutional arrangements and stakeholder engagement are strongly related. Institutional frameworks provide the structure within which stakeholders can engage effectively, while stakeholder participation ensures that these frameworks are grounded in local realities and are more likely to be accepted and sustained over time. The findings of the Intergovernmental Panel on Climate Change (IPCC) in its 2022 report on "Climate Change 2022: Impacts, Adaptation and Vulnerability" underscore the importance of stakeholder engagement as a catalyst for effective and equitable adaptation.

14. The UNFCCC and the Paris Agreement emphasize the critical importance of robust institutional arrangements and stakeholder engagement in addressing climate change. At COP 16 in Cancun (2010),

[5] See footnote xx.
[6] See footnote xx.
[7] See https://unfccc.int/files/adaptation/application/pdf/adaption_commitee_publication_-_web_high.pdf.
[8] See footnote 3.
[9] See https://unfccc.int/topics/adaptation-and-resilience/the-big-picture/how-are-stakeholders-engaged-on-adaptation-under-the-un-climate-process.
[10] Global Center on Adaptation (GCA). (2019). Adapt Now: A Global Call for Leadership on Climate Resilience. Global Commission on Adaptation.
[11] OECD (Organisation for Economic Co-operation and Development). (2015). Stakeholder Engagement for Inclusive Water Governance. OECD Studies on Water.

UNFCCC Parties recognized the urgent need to address adaptation with the same priority as mitigation. They underscored the necessity of strong institutional arrangements to enhance adaptation actions and support, including the strengthening of national capacities for climate-resilient development. The IPCC's Fifth Assessment Report (2014) elaborates on this by highlighting that strong institutions are essential for implementing adaptation, while weaknesses in governance can pose significant barriers. The Sixth IPCC Assessment Report (2021) further reinforces the importance of coordinated institutional frameworks to effectively overcome adaptation challenges.

15. Article 7 of the Paris Agreement,[12] for example, calls for enhanced adaptation actions and emphasizes cooperative approaches, stressing the need for inclusive and effective institutional arrangements to support the synthesis of relevant information and knowledge, and the provision of technical support and guidance to Parties.

16. Decisions by COP 26 and CMA 3 further reinforced the significance of effective institutional arrangements and stakeholder engagement in climate adaptation. These decisions include commitments to enhance adaptation frameworks, promote inclusive participation, and strengthen supporting bodies like the AC. For instance, COP 26's Glasgow Climate Pact urged countries to incorporate local knowledge and perspectives into their adaptation planning, recognizing the importance of stakeholder engagement in achieving equitable and effective outcomes. These developments reflect a growing global consensus on the need for robust and inclusive frameworks to address the complex challenges of climate change.

17. Recent decisions by COP27 and COP 28 have significantly advanced institutional arrangements and stakeholder engagement in climate action. COP 27 in Sharm El Sheikh saw the establishment of a Loss and Damage Fund, which marked a key step in addressing financial support for countries facing severe climate impacts. This fund's creation highlighted the importance of robust institutional mechanisms for managing and disbursing climate finance effectively. Additionally, COP 27 reinforced the role of the operating entities of the financial mechanism in scaling up adaptation efforts and financial support, emphasizing the need for continued enhancement of these bodies to support vulnerable nations.

18. At COP 28, the focus shifted to operationalizing the outcomes of the first Global Stocktake (GST) and the Global Goal on Adaptation (GGA). The GST provided a comprehensive assessment of global progress towards Paris Agreement targets, setting the stage for more ambitious climate actions. COP 28 also made progresses in developing metrics and indicators for the GGA, aiming to improve the tracking of adaptation progress and ensuring that adaptation efforts are both effective and equitable. COP 28 included diverse voices from governments, the private sector, and civil society, reflecting a broader commitment to inclusive dialogues and collaborative approaches in climate governance.

III. Institutional arrangements and stakeholder engagement as enablers for supporting adaptation throughout the adaptation cycle

19. Institutional arrangements and stakeholder engagement are critical throughout the iterative adaptation cycle, including 1) assessing impacts, vulnerabilities, and risks; 2) planning; 3) implementing adaptation measures; and 4) monitoring, evaluating, and learning. Each phase requires ongoing stakeholder engagement, communication, capacity-building, and support in terms of financial and technological resources to ensure effective adaptation outcomes.[13] The UNFCCC process supports these steps by facilitating knowledge sharing, engaging diverse stakeholders, strengthening capacities, and providing necessary resources.

20. Institutional arrangements operate across various governance levels, each contributing uniquely to adaptation efforts. At the local level, municipalities and community organizations develop and implement strategies tailored to specific climate impacts. National frameworks guide these local actions, while international efforts under the UNFCCC and the Paris Agreement promote global cooperation through knowledge sharing, capacity building, and financial assistance (IIED, 2019; ODI, 2020).

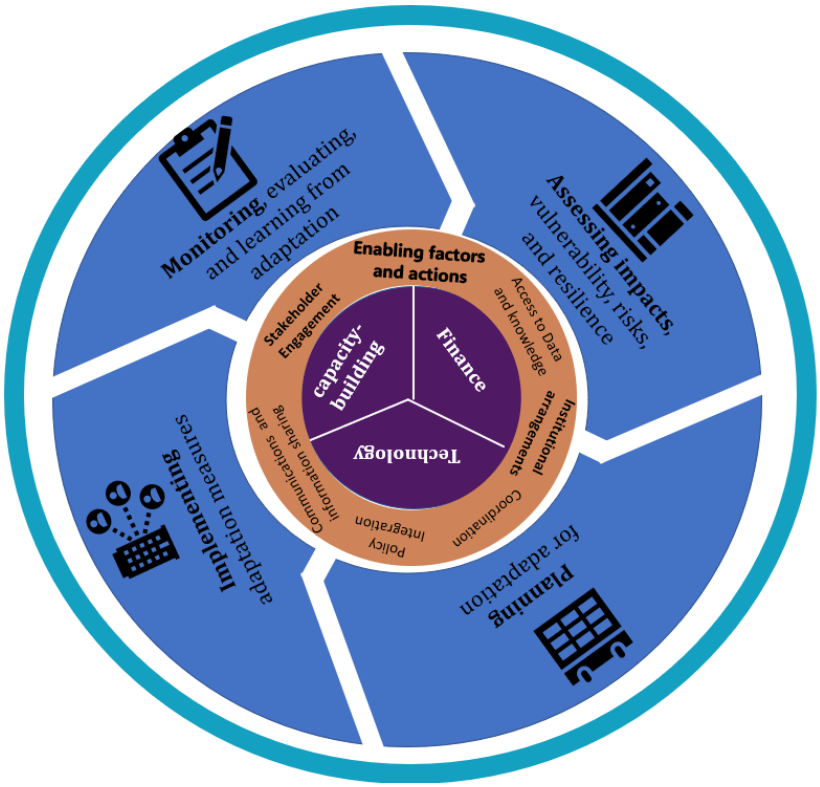
[12] See https://unfccc.int/sites/default/files/english_paris_agreement.pdf.
[13] See https://unfccc.int/documents/204710.

Stakeholder engagement is essential in this context, involving a wide range of actors to ensure that adaptation policies are informed by diverse perspectives and local knowledge (SEI, 2021).

21. Enhancing the 'actor perspective' involves broadening the focus to include sub-national actors such as local governments, community organizations, and regional authorities. These actors play a crucial role in tailoring adaptation strategies to local contexts and needs. Additionally, integrating cross-cutting enablers such as gender equality, local community involvement and participation (LCIP), and youth engagement is essential for creating inclusive and resilient adaptation frameworks. Gender-responsive policies, youth participation, and local community input ensure that adaptation measures are equitable and address diverse needs and vulnerabilities (Mastrorillo et al., 2016; UNDP, 2021).[14]

22. Vertical coordination among governance levels is crucial for aligning adaptation efforts. National frameworks provide guidance to local actions, which in turn inform policy refinements, creating a responsive adaptation strategy that integrates top-down directives with bottom-up realities (IIED, 2018; EEA, 2018).[15] Stakeholder engagement enhances vertical integration by ensuring that local needs are communicated to higher levels of governance and that international and national policies are adapted to local contexts through participatory processes (ODI, 2019).[16] This coordination helps foster a cohesive and integrated approach to adaptation.

Figure 1. Vertical integration in the adaptation process



23. Institutional arrangements for adaptation operate at multiple governance levels, with each level contributing uniquely to the adaptation process (Hewitt *et. al*, 2013).[17] Local authorities, municipalities, and community-based organizations are pivotal in implementing strategies that address specific climate

[14] See footnote xx.
[15] See footnote xx.
[16] See footnote xx.
[17] See footnote xx.

impacts (SEI, 2020;[18] GEF, 2021).[19] On the international scale, efforts such as those under the UNFCCC and the Paris Agreement provide support to developing countries through knowledge sharing, capacity building, and financial assistance.

24. Stakeholder engagement complements institutional arrangements by involving a broad spectrum of actors, including local governments, NGOs, businesses, and community groups. Engaging stakeholders vertically ensures that adaptation policies incorporate diverse perspectives and local knowledge, which is vital for developing effective solutions. For instance, community-based organizations can offer insights into local vulnerabilities and adaptive capacities that may not be visible at higher administrative levels. This engagement helps building public support, enhances the legitimacy of adaptation measures, and fosters collaborative problem-solving (ICSU, 2020).[20]

25. Vertical coordination ensures that adaptation efforts are aligned across governance levels, from local to national to international. National governments often establish frameworks or guidelines for local authorities, incorporating feedback from local experiences to refine these policies.[21] This hierarchical structure ensures that adaptation measures are responsive to local realities while being consistent with national and international commitments (Schwerdtle *et al.*, 2019).[22] For example, local governments might execute specific projects based on national climate strategies, which are influenced by international agreements.

26. Stakeholder engagement is crucial for effective vertical policy coordination, as it bridges gaps between governance levels. It helps communicate local needs and priorities to national and international policymakers and ensures that higher-level policies are adapted to local contexts. This interaction can occur through public consultations, advisory committees, or participatory planning processes. Engagement helps synchronize efforts, ensures the feasibility and relevance of adaptation measures at all scales, and fosters an effective integrated approach to policy implementation and adjustment.[23]

[18] See footnote xx.
[19] See footnote xx.
[20] See footnote xx.
[21] See footnote 12.
[22] See footnote xx.
[23] See footnotes 10 and 14.

Figure 2. Linkages between institutional arrangement and stakeholder engagement in climate adaptation

27. Institutional arrangements are also essential for advancing national adaptation actions throughout the adaptation cycle. Under the UNFCCC process, pertinent information about these arrangements is available through various mechanisms such as National Communications, Nationally Determined Contributions (NDCs), Biennial Transparency Reports (BTRs), and NAPs (UNFCCC, 2021). The COP, the CMA and the subsidiary bodies, along with the AC, also contribute by producing submissions, technical papers, and hosting workshops (UNFCCC, 2023). These arrangements provide a structured approach to addressing climate impacts, ensuring that national adaptation strategies are supported by comprehensive frameworks and the latest data. Effective stakeholder engagement is fundamental for integrating diverse perspectives and fostering inclusive and impactful adaptation measures (Noble *et al.,* 2014).[24]

28. At the regional level, institutional arrangements are pivotal for managing cross-border climate issues and supporting national adaptation efforts. Regions develop a variety of tools, including risk

[24] See footnote xx.

management frameworks, sectoral assessments, and knowledge platforms to enhance adaptation planning (Sutherland et al., 2021).[25] Despite these advancements, challenges such as significant knowledge gaps, limited regional capacity, and inadequate recognition of regional institutions persist (AOSIS, 2019).[26] Addressing these issues is crucial for optimizing regional cooperation and ensuring well-coordinated adaptation strategies. Improvements in regional institutional arrangements can facilitate better access to funding, streamline adaptation approaches, and strengthen resilience at both national and regional levels (IPCC, 2022).[27]

IV. Case studies and best practices

a) Assessing impacts, vulnerabilities, and risks

29. Institutional arrangements play a crucial role in ensuring that risk and vulnerability assessments are conducted systematically and efficiently. They involve the establishment of frameworks and bodies responsible for overseeing and coordinating assessments, integrating scientific research, and disseminating findings. Proper institutional frameworks facilitate the coherent documentation of climate risks and vulnerabilities, optimize the use of resources, and ensure that the assessments align with national and international standards (IIED, 2020).[28] Stakeholder engagement complements these arrangements by involving various actors who provide local expertise, practical insights, and support for implementing adaptation measures (WRI, 2018).[29]

a) **In Brazil**, the Brazilian Panel on Climate Change (PBMC) exemplifies effective institutional arrangements for conducting risk and vulnerability assessments.[30] Established to consolidate scientific information on climate change, the PBMC produces National Assessment Reports, Technical Reports, and Summaries for Policymakers. This panel collaborates closely with the National Institute of Science and Technology (INCT) for Climate Change and other research entities.[31] The PBMC's comprehensive reporting and stakeholder engagement through various governmental agencies and research networks underscore the importance of collaborative efforts in producing actionable climate data. This approach has led to informed policy-making and heightened awareness among policymakers and the public regarding climate risks.

> ***Case study: Brazil's Institutional arrangements for the implementation of the Convention***[32]
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> *Regarding the efforts to implement the Convention in the country, the Government of Brazil put together a cross-cutting institutional arrangement through coordinated activities at different levels (national and subnational). The Interministerial Committee on Climate Change (CIM, for its acronym in Portuguese), of a permanent nature, was established for this purpose, aiming at establishing guidelines, arranging and coordinating the implementation of the country's climate-related public actions and policies. In addition, the country instituted, via Decrees, the National Committee for Reducing Emissions from Deforestation and Forest Degradation, Conservation of Forest Carbon Stocks, Sustainable Forest Management and Enhancement of Forest Carbon Stocks (CONAREDD+), and the Executive Committee for the Control of Illegal Deforestation and Recovery of Native Vegetation, coordinated by the Ministry of the Environment (MMA).*
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> *As part of the Ministry of Science, Technology and Innovations' organizational framework, the General Coordination of Climate Science and Sustainability (CGCL, for its acronym in Portuguese)*

[25] See footnote xx.
[26] See footnote xx.
[27] IPCC (Intergovernmental Panel on Climate Change). (2022). Climate Change 2022: Impacts, Adaptation, and Vulnerability. Cambridge University Press.
[28] See footnote xx.
[29] See footnote xx.
[30] See footnote xx.
[31] See https://unfccc.int/sites/default/files/resource/4a%20Comunicacao%20Nacional.pdf and https://www.gov.br/mcti/pt-br/centrais-de-conteudo/publicacoes-mcti/quarta-comunicacao-nacional-do-brasil-a-unfccc/executive_summary-_4nc_brazil_web.pdf.
[32] See footnote 27.

is responsible for the elaboration of National Communications and Biennial Update Reports, and for the National Emissions Registry System (SIRENE, for its acronym in Portuguese), the government's official instrument for Measurement, Reporting and Verification (MRV) of anthropogenic greenhouse gas (GHG) emissions. Additionally, it coordinates the implementation of several climate projects and is the country's National Designated Entity (NDE) for the Convention's Technology Mechanism and the Clean Development Mechanism (CDM). It is worth mentioning that the Brazilian Research Network on Global Climate Change (Rede CLIMA) was created in 2007 in order to support the MCTI at the national scope, contemplating the contribution of dozens of research groups in universities and science and technology institutes.

The Ministry of Agriculture, Livestock and Supply (MAPA, for its acronym in Portuguese), in turn, created the General Coordination of Climate Change, Planted Forests and Conservation Agriculture (CGMC, for its acronym in Portuguese), responsible for promoting the sustainability of agricultural production systems through the promotion of technology innovation, the adoption of conservative production systems and low carbon emissions, which are more resilient to climate change.

Among the regulatory frameworks and management tools aimed at implementing the UNFCCC in the country, the National Policy on Climate Change (PNMC, for its acronym in Portuguese) stands out, as it established the legal framework to tackle climate change in Brazil by 2020 by conducting Nationally Appropriate Mitigation Actions (NAMAs).

b) **Chile's ARClim**[33] or the Climate Risk Atlas for Chile, represents an innovative approach to integrating climate risk information. ARClim is an online platform that consolidates data from multiple sources, allowing users to access detailed climate risk information across different regions and sectors. This tool enhances decision-making processes by providing comprehensive, accessible data. The development of ARClim highlights the significance of leveraging technology to facilitate the dissemination and utilization of climate risk information, ensuring that stakeholders can make well-informed decisions based on up-to-date data.

Case study: Chile's innovative approach to integrating climate risk information[34]

The initiative ARClim, managed by the Chilean Ministry of the Environment, has developed a governance structure and stakeholder engagement strategy to address climate change impacts comprehensively. Its governance framework involves multiple institutional arrangements designed to integrate efforts across various levels of government and sectors. This multi-tiered approach includes coordination between national and regional entities, such as the Ministry of the Environment and local environmental agencies, ensuring that climate adaptation strategies are aligned with both national policies and local needs. The initiative employs a participatory governance model, actively involving stakeholders from diverse sectors, including government agencies, private sector actors, NGOs, and local communities. This engagement is crucial for aligning climate adaptation efforts with the needs and priorities of all relevant parties. Regular stakeholder consultations and workshops are held to gather input, share progress, and adjust strategies based on feedback. This inclusive approach not only enhances the relevance of the adaptation measures but also fosters a sense of ownership and commitment among stakeholders.

Further, ARCILIM has established a technical committee composed of experts and representatives from key institutions. This committee plays a central role in guiding the initiative's technical aspects and ensuring that the implemented measures are based on scientific evidence and best practices. By involving technical experts and stakeholders in decision-making processes, ARCILIM ensures that its strategies are both scientifically sound and practically feasible.

The initiative also emphasizes transparency and communication, regularly updating stakeholders on progress and achievements through reports and public consultations. This openness helps build trust and facilitates collaborative problem-solving.

[33] See https://arclim.mma.gob.cl/about/.
[34] See footnote xx.

c) **Kyrgyzstan** adopts a sectoral approach to climate risk assessments, with each responsible ministry conducting assessments relevant to its domain.[35] This sector-specific focus ensures that detailed risk evaluations are integrated into broader national adaptation strategies. Coordination mechanisms between ministries and capacity-building initiatives for staff and stakeholders enhance the effectiveness of these assessments. Kyrgyzstan's experience demonstrates that close collaboration across sectors and ongoing training are essential for improving the quality and impact of risk assessments.

> ***Case study: Governance and stakeholder engagement in Kyrgyzstan***[36]
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> *Kyrgyzstan's fourth National Communication (NC4) to the UNFCCC outlines a comprehensive approach to climate change governance and stakeholder engagement. The governance structure is anchored in the State Agency for Environmental Protection and Forestry, which coordinates national climate policy and implements adaptation and mitigation strategies. This agency works closely with various government ministries and local authorities to ensure that climate policies are integrated across different sectors and levels of government.*
>
> *To effectively engage stakeholders, Kyrgyzstan has adopted a multi-stakeholder approach. This includes consultations with civil society organizations, private sector representatives, and local communities. The National Climate Change Committee, comprising representatives from relevant sectors and stakeholder groups, plays a critical role in overseeing the development and implementation of climate strategies. Regular workshops, public consultations, and stakeholder meetings are conducted to gather input, discuss progress, and incorporate feedback into climate policies. This inclusive process ensures that the climate strategies address the diverse needs and concerns of all relevant parties, enhancing the effectiveness and acceptance of the national climate response.*

d) **Indonesia's**[37] approach involves coordinating risk and vulnerability assessments through its Ministry of Environment, which operates at various governance levels, including village-level assessments. The development of the Vulnerability Index Information System (VIIS) standardizes assessments and provides a framework for evaluating vulnerability consistently across different regions. This method ensures that localized insights are incorporated into broader adaptation strategies while maintaining a standardized approach to data collection and analysis. Indonesia's experience underscores the importance of local-level assessments and the need for standardized tools to ensure consistency and comparability.

[35] See Kyrgyztan's NC4 available at: https://unfccc.int/sites/default/files/resource/NC3_Kyrgyzstan_English_24Jan2017_0.pdf.

[36] See footnote xx.

[37] See https://unfccc.int/sites/default/files/resource/8360571_Indonesia-NC3-2-Third%20National%20Communication%20-%20Indonesia%20-%20editorial%20refinement%2013022018.pdf.

Case study: Structures and stakeholder engagement in Indonesia[38]

Indonesia's third National Communication (NC3) to the UNFCCC demonstrates a well-structured governance framework and effective stakeholder engagement in its climate change efforts. The governance structure is led by the National Council on Climate Change (DNPI), which coordinates climate policies and oversees their implementation across various government levels. DNPI is supported by the Ministry of Environment and Forestry, which plays a central role in integrating climate change strategies into national development plans. This structure ensures a cohesive approach to climate action and policy development.

To engage stakeholders effectively, Indonesia employs a participatory approach that involves a wide range of actors, including government agencies, non-governmental organizations, the private sector, and local communities. The National Communication highlights the establishment of multi-stakeholder forums and working groups that facilitate dialogue and collaboration among these diverse groups. Regular consultations and workshops are organized to gather input from stakeholders, allowing for the integration of their perspectives into climate strategies. This inclusive process not only enhances the relevance and effectiveness of climate policies but also builds broad-based support for climate initiatives. By involving various stakeholders in decision-making processes and policy implementation, Indonesia ensures that its climate actions are well-informed and widely supported.

e) **Ecuador** exemplifies an innovative approach to climate risk assessments by developing comprehensive climate risk models that incorporate biophysical variables across various sectors including agriculture, natural heritage, health, and water security. According to the IPCC's AR7 report,[39] Ecuador's web-based tool, accessible at SPRAAC, facilitates sub-national planning and project-level climate rationale justification. This tool represents a significant advancement in integrating climate risk data into decision-making processes, thereby enhancing the ability of sub-national entities to plan and respond to climate-related challenges effectively (IPCC, 2023; Ministerio del Ambiente, 2023).[40]

Case study: Ecuador's SPRAAC tool helps transforming climate risk assessment into actionable outcomes

Ecuador introduced a robust approach to climate risk assessment through the development of comprehensive climate risk models that integrate biophysical variables across critical sectors such as agriculture, natural heritage, health, and water security. This innovative practice addresses the multifaceted impacts of climate change by providing detailed insights into how climate risks affect various aspects of the environment and economy, enabling more targeted and effective adaptation strategies (IPCC, 2023).

The centerpiece of Ecuador's approach is the SPRAAC web-based tool, which facilitates sub-national planning and justifies climate rationale at the project level. This tool allows for the visualization and analysis of climate risk data, thereby supporting local decision-makers in understanding and responding to climate-related challenges. By making climate data accessible and actionable, SPRAAC enhances the capacity of regional and municipal authorities to incorporate climate considerations into their planning processes (Ministerio del Ambiente, 2023).

The SPRAAC tool has been used to develop climate risk assessments for agricultural regions, enabling farmers and agricultural planners to understand how changes in temperature and precipitation patterns could impact crop yields. For instance, the tool has helped in designing climate-resilient farming practices and selecting crop varieties better suited to future climatic conditions, thus ensuring food security and optimizing agricultural productivity.

[38] See footnote 32.

[39] See footnote xx.

[40] Ministerio del Ambiente. (2023). SPRAAC Web Tool. Retrieved from https://spracc.ambiente.gob.ec/geovisor-web-s-pracc/frontend/.

In the context of water security, the SPRAAC tool has been instrumental in evaluating the impacts of climate change on water resources. By analyzing projections of rainfall and drought conditions, the tool assists in managing water allocation, designing infrastructure to withstand extreme weather events, and planning for future water needs, thus supporting sustainable water management practices.

The tool has also been applied to assess the health impacts of climate change. By incorporating data on climate variables and health outcomes, it helps public health officials identify vulnerable populations and plan interventions to mitigate the risks of climate-related health issues, such as heatwaves and the spread of vector-borne diseases.

The implementation of these climate models represents a significant advancement in Ecuador's adaptation efforts. It illustrates how integrating comprehensive climate risk assessments into decision-making processes can improve planning and response strategies at multiple levels. This case study highlights the effectiveness of utilizing detailed climate data to guide adaptation measures and underscores the importance of technological tools in supporting climate resilience (IPCC, 2023).

[Note: Diagram showing Ecuador's climate risk models]

30. These examples and cases of good practices in institutional arrangements and stakeholder engagement demonstrate the relevance for ensuring that risk and vulnerability assessments are conducted effectively and that the results are communicated clearly. These arrangements help maximize the use of existing resources, including human and technical expertise, and integrate local knowledge into the assessment process. Additionally, they ensure that assessments are carried out in a manner that is coherent and consistent with international standards.

31. One key trend observed in the formulation of NAPs, throughout these examples, is the strengthening of early warning systems (EWS) and climate information services (CIS). Developing countries are increasingly focusing on improving these systems to enhance institutional mechanisms for disseminating climate information and engaging stakeholders. This approach ensures that timely and accurate information is available for responding to climate hazards, thereby improving the effectiveness of adaptation measures (UNDRR and WMO, 2020).[41]

32. The development and maintenance of centralized climate information systems and databases are another notable development. Centralized platforms for managing climate data improve data accessibility and support informed decision-making. According to UNEP and IIED (2014),[42] these systems facilitate stakeholder engagement by providing valuable information for planning and adaptation efforts, thus enhancing the overall effectiveness of climate risk assessments.

33. Countries such as **Bangladesh,**[43] **Bhutan,**[44] **Serbia,**[45] **Thailand,**[46] **and the Philippines**[47] also provide practical examples of these evolving efforts. Bangladesh focuses on integrating climate risk assessments into project evaluations, while Bhutan emphasizes the use of real-time meteorological data and health sector vulnerability assessments. Serbia develops methodologies and platforms for climate data management, Thailand tracks agricultural water management, and the Philippines centralizes climate information. These examples highlight how institutional arrangements and stakeholder engagement are integral to effective climate adaptation strategies.

[41] See https://wmo.int/media/news/climate-risk-and-early-warning-systems-initiative-builds-momentum.
[42] See footnote xx.
[43] See footnote xx.
[44] See https://unfccc.int/sites/default/files/resource/NAP-Bhutan-2023.pdf.
[45] See https://unfccc.int/sites/default/files/resource/NAP_Serbia_2024.pdf.
[46] See https://unfccc.int/sites/default/files/resource/NAP_THAILAND_2024.pdf.
[47] See https://unfccc.int/sites/default/files/resource/NAP_Philippines_2024.pdf.

b) Planning

34. Adaptation planning is a complex process that requires both technical expertise and inclusive participatory mechanisms. Institutional arrangements and stakeholder engagement for effective adaptation planning ensures that diverse data, information, and expertise are utilized, and that the needs and perspectives of various stakeholders are incorporated in the planning processes. During the planning phase, institutional frameworks help create comprehensive NAPs and strategic documents through multi-stakeholder processes (UNFCCC, 2020).[48]

[Note: a diagram displaying statistics on NAPs in developing countries that focus on mainstreaming institutional arrangements and stakeholder engagement]

35. Institutional arrangements and stakeholder engagement are fundamental to successful adaptation planning (UNEP, 2021).[49] Many countries are revising and harmonizing their policies and legislation to better support adaptation efforts. This process involves clearly defining roles and responsibilities for institutions, establishing coordinating mechanisms, and embedding adaptation aspects into national frameworks. Such comprehensive arrangements are essential for ensuring that adaptation measures are well-coordinated and supported by relevant institutions and stakeholders.

36. NAPs frequently emphasize the importance of comprehensive adaptation strategies and the development of various planning tools to integrate climate change adaptation into broader governance aspects, sectoral and local development planning including consultations (UNDP, 2014).[50]

37. Challenges in adaptation planning can be better understood by examining success stories and contrasting different approaches, whether national, sub-national, or sectoral. For instance, **Uruguay**'s sectoral approach to adaptation has yielded positive lessons, demonstrating the effectiveness of targeted strategies within specific sectors (Uruguay Ministry of Environment, 2022).[51] Conversely, urban adaptation initiatives, such as those from City Adapt and C40, provide valuable insights into how cities can address resilience challenges through localized and collaborative strategies (City Adapt, 2023;[52] C40 Cities, 2024).[53] Highlighting these differences and lessons learned can offer a comprehensive perspective on effective adaptation planning.

38. Many countries are revising and harmonizing policies and legislation to support adaptation efforts. This includes defining clear roles and responsibilities for institutions, creating coordinating mechanisms, and integrating adaptation aspects into national frameworks. Such arrangements are essential for ensuring that adaptation measures are well-coordinated and supported by relevant institutions and stakeholders. For example, in **Kenya**, local water management committees have successfully managed water resources in drought-prone areas, ensuring sustainable access for communities. Nationally, governments provide overarching frameworks, as seen in **Mexico's** robust national climate change law that integrates adaptation into broader development policies.

39. This section elaborates on the role of institutional arrangements and stakeholder engagement in adaptation planning, supported by case studies from **Ghana, Costa Rica, the Asia Regional ACCCRN initiative, the Democratic Republic of Congo (DRC), South Africa, Brazil, Bangladesh, Bhutan, Serbia and the Philippines.**

a) For example, **Ghana**'s NAP incorporated input from various sectors and communities, ensuring relevance to local realities. In implementation, effective frameworks coordinate actions across sectors and government levels, integrating local knowledge. In the monitoring and evaluation

[48] United Nations Framework Convention on Climate Change (UNFCCC). (2020). *National Adaptation Plans 2020: Progress in the Formulation and Implementation of NAPs*. UNFCCC Secretariat. Available at: https://unfccc.int/sites/default/files/resource/NAP-progress-publication-2020.pdf.

[49] See footnote xx.

[50] See footnote xx.

[51] Uruguay Ministry of Environment. (2022). Sectoral Adaptation Strategies in Uruguay. Retrieved from https://www.gub.uy/ministerio-ambiente/.

[52] City Adapt. (2023). https://www.cityadapt.org.

[53] C40 Cities. (2024). https://www.c40.org.

phase, institutional mechanisms track progress, while stakeholder feedback is vital for continuous improvement, ensuring adaptation efforts are responsive and adaptive to changing conditions.

b) In **Costa Rica**, the formulation of its NAP[54] showcases a commitment to inclusive and comprehensive adaptation planning. The country employed thematic and regional participatory processes to ensure that its NAP addressed the diverse ecological and social landscapes. Thematic workshops were organized to focus on specific areas such as water resources, agriculture, and health. These workshops aimed to gather expert input and stakeholder feedback, which was essential for formulating adaptation strategies that are both relevant and practical. Regional consultations were also conducted to engage stakeholders from various regions, helping to understand local vulnerabilities and adaptation needs. The process included stakeholder mapping to identify and involve relevant actors from government, academia, civil society, and the private sector. The outcomes of these efforts included an inclusive planning approach that addressed unique regional and sectoral needs and enhanced collaboration among stakeholders. This participatory process helped to create a more coordinated and effective adaptation plan, demonstrating that diverse participation and local insights are crucial for comprehensive planning.

> ***Case study: Governance structures and stakeholder engagement in Costa Rica's National Adaptation Plan***[55]
>
> *Costa Rica's NAP for 2022–2026 outlines a robust governance structure for managing adaptation and resilience efforts. The coordination of climate actions is led by the Ministry of Environment and Energy (MINAE), which works closely with the National Meteorological Institute (IMN) and other governmental entities to ensure integration across various sectors. The Inter-Institutional Technical Committee on Climate Change (CTICC) is responsible for overseeing the implementation of the NAP, ensuring that policies are coherent and aligned with national development strategies. This multi-agency collaboration strengthens institutional arrangements and promotes coordinated action.*
>
> *Stakeholder engagement is a critical aspect of Costa Rica's approach. The NAP emphasizes participatory planning processes, involving local communities, civil society organizations, the private sector, and indigenous groups in decision-making. Regular consultations and workshops have been organized to ensure that diverse voices are considered in adaptation strategies. This inclusive approach ensures that adaptation measures are contextually relevant and responsive to the needs of vulnerable populations, thus enhancing resilience to climate change across different regions of the country.*

c) **The Asian Cities Climate Change Resilience Network (ACCCRN)**[56] represents a significant regional initiative aimed at enhancing urban resilience across ten pilot cities in Asia. The ACCCRN focuses on building flexible and dynamic systems to address climate challenges through robust stakeholder engagement. City-level assessments were conducted to identify climate risks and vulnerabilities, forming the basis for developing tailored resilience strategies for each city. Multi-stakeholder workshops facilitated the creation of these city-specific strategies, ensuring that they were informed by a broad range of perspectives. Capacity-building efforts were also a key component, providing training and resources to local governments and communities to strengthen their resilience planning capabilities. The outcomes included the development of customized resilience strategies and increased community awareness and participation in resilience planning.

[54] See https://unfccc.int/sites/default/files/resource/NAP_Documento-2022-2026_Costa-Rica.pdf.
[55] See footnote 41.
[56] See https://www.i-s-e-t.org/_files/ugd/558f8a_cb27076960964ad2a35ffab9f9f4e36c.pdf and https://www.i-s-e-t.org/resource-acccrn and https://www.i-s-e-t.org/_files/ugd/558f8a_91f711aad2e2442a87d3a912430e1e04.pdf.

Case study: ACCCRN support to its member cities on governance and stakeholder engagement for climate resilience[57]

The Asian Cities Climate Change Resilience Network (ACCCRN) has played an important role in strengthening the governance structures and institutional arrangements of its member countries to support adaptation and resilience planning. ACCCRN fosters a multi-stakeholder approach that includes governments, civil society organizations, local communities, and the private sector. It promotes urban climate resilience by enhancing the capacity of local governments and institutions through technical assistance, funding, and knowledge-sharing platforms.

ACCCRN's strategy is built around establishing City Resilience Strategies (CRS) in its member cities, which integrate climate risks into urban development plans. These strategies are developed with a focus on inclusive governance, where local authorities work alongside vulnerable communities to identify climate risks and prioritize adaptation measures. ACCCRN has also facilitated the creation of Urban Climate Resilience Networks (UCRN) at the national and regional levels, providing a platform for cross-sectoral collaboration and knowledge exchange.

Additionally, ACCCRN strengthens local governance by supporting the creation of Resilience Units within municipal governments. These units are tasked with coordinating climate adaptation efforts and ensuring that resilience planning is embedded within broader urban planning processes. ACCCRN's participatory approach also encourages active stakeholder engagement through workshops, capacity-building programs, and policy dialogues, ensuring that adaptation and resilience plans are reflective of local contexts and needs while fostering long-term sustainability.

d) In the **Democratic Republic of Congo (DRC),**[58] adaptation planning has emphasized cooperation and consultation to address the country's diverse climate challenges. The development of the NAP involved extensive stakeholder consultations with actors from various sectors and regions. This approach aimed to gather comprehensive input on adaptation needs and priorities. Inter-ministerial coordination was facilitated to ensure that the NAP reflected a cohesive and integrated approach across different government ministries. Capacity-building efforts were also undertaken to enhance the abilities of local authorities and communities to engage in the adaptation planning process. The outcomes of these activities included an integrated adaptation plan that addressed identified needs and improved the capacity of local stakeholders to participate effectively in planning and implementation. The lessons learned underscore the value of inclusive processes and the necessity of effective inter-ministerial coordination for developing coherent adaptation strategies.

Case study: DRC's approach to governance and stakeholder engagement for adaptation action[59]

The Democratic Republic of Congo (DRC) has made progress in developing governance structures and institutional arrangements for climate adaptation and resilience, as outlined in its NAP. The Ministry of Environment and Sustainable Development leads the overall coordination of adaptation efforts, working closely with relevant national and provincial bodies. To ensure cross-sectoral integration, the DRC has established an Inter-Ministerial Committee on Climate Change, which facilitates collaboration among key ministries, including agriculture, health, and infrastructure, to incorporate climate risks into their respective planning processes.

The DRC's NAP emphasizes stakeholder engagement as a crucial element in developing adaptation strategies. It incorporates a multi-stakeholder approach by involving local communities, indigenous groups, civil society organizations, and the private sector in consultations and decision-making processes. Regular dialogues, workshops, and participatory assessments have been conducted to ensure that local vulnerabilities and priorities are reflected in national adaptation policies. This inclusive framework enables the integration of traditional knowledge with scientific

[57] See footnote xx.
[58] See https://unfccc.int/sites/default/files/resource/DRC-NAP_EN.pdf.
[59] See footnote xx.

data, ensuring that adaptation measures are contextually appropriate and effective. By engaging stakeholders at multiple levels, the DRC enhances both local ownership and the sustainability of its adaptation and resilience efforts, aiming to build long-term climate resilience across the country.

e) Adaptation planning is inherently multifaceted, involving both technical and participatory elements to ensure that all relevant information and perspectives are considered (UNFCCC, 2023).[60] The case studies from **Costa Rica, the ACCCRN initiative, and the DRC** illustrate the critical role of institutional arrangements and stakeholder engagement in developing effective adaptation plans. These examples highlight how diverse and inclusive approaches can lead to more comprehensive and actionable adaptation strategies.

f) **South Africa**'s NDC[61] highlights the country's commitment to involving all sectors of society in its adaptation efforts, demonstrating a move towards more inclusive and comprehensive climate action. However, the data also show areas for improvement, particularly in the need for stronger institutional capacity and better coordination across governance levels.

g) **Brazil**[62] has made significant steps in advancing its NAP by integrating climate adaptation into sectoral policies, particularly in agriculture, water resources, and health. The country has emphasized stakeholder engagement, involving indigenous communities and local governments in adaptation planning and implementation. This approach has helped Brazil address specific vulnerabilities while promoting sustainable development.

h) **Vietnam** has focused on enhancing its institutional capacity for adaptation through the implementation of its NAP-Sup project.[63] The 2023 progress report highlights Vietnam's efforts to engage stakeholders across various sectors, including agriculture, infrastructure, and disaster risk management. The country has also improved its data collection and monitoring systems, which support more effective adaptation planning and implementation at the local and national levels.

i) **Bangladesh**, through its NAP,[64] has successfully mainstreamed gender-responsive and inclusive adaptation initiatives by actively involving community-based organizations (CBOs) in climate planning and implementation. These initiatives focus on ensuring that women, marginalized groups, and vulnerable communities are integral to the decision-making process. By prioritizing local knowledge and promoting community leadership, Bangladesh ensures that adaptation strategies are equitable and address the specific needs of all segments of society. This approach not only fosters inclusivity but also enhances the resilience of communities, particularly those disproportionately affected by climate change impacts.

j) **Bhutan**[65] has developed comprehensive river basin management plans and climate-resilient master plans as part of its broader adaptation strategy. These plans integrate climate adaptation measures into key planning processes, ensuring that river basins and urban development projects are resilient to climate impacts. By embedding adaptation into these broader frameworks, Bhutan aims to enhance the sustainability and effectiveness of its climate response while addressing regional and local vulnerabilities.[66]

[60] Monitoring and evaluation of adaptation at the national and subnational levels: Technical paper by the Adaptation Committee, UNFCCC, 2023. Available at https://unfccc.int/sites/default/files/resource/AC_TechnicalPaper_AdaptationMandE_2023.pdf.

[61] See https://unfccc.int/sites/default/files/NDC/2022-06/South%20Africa%20updated%20first%20NDC%20September%202021.pdf.

[62] See footnote above.

[63] See https://www.undp.org/vietnam/projects/viet-nam-national-adaptation-plan-nap-development-and-operationalisation-support-project.

[64] See https://unfccc.int/documents/637588.

[65] See footnote xx.

[66] See https://unfccc.int/sites/default/files/resource/NAP-Bhutan-2023.pdf.

k) **Serbia**[67] has integrated climate adaptation into key documents like the Nature Protection Programme and the Urban Development Strategy,[68] while the **Philippines** has crafted a stakeholder engagement strategy and incorporated adaptation measures into local and sectoral plans.

c) Implementation of adaptation measures

40. The implementation of adaptation requires a coordinated and structured approach that involves multiple institutional arrangements and extensive stakeholder engagement. Institutions responsible for high-level oversight, decision-making, and coordination are critical in this regard, supported by operational and technical bodies that provide essential guidance and expertise. The execution of adaptation actions also necessitates resource mobilization, coordination across various governance levels, and alignment with both national and international processes (UNFCCC, 2012).[69] This subsection explores how countries like **Tonga, Timor-Leste, and Thailand** have approached the implementation of their adaptation strategies, highlighting their institutional frameworks, stakeholder engagement, and lessons learned.

a) **Tonga**'s approach to implementing its Joint National Action Plan 2 (JNAP2) on Climate Change and Disaster Risk Management (2018–2028)[70] provides a comprehensive example of adaptation action. This framework ensures that all aspects of climate change and disaster risk management are addressed through well-coordinated efforts. Stakeholder engagement in Tonga is extensive, including government ministries, non-governmental organizations (NGOs), the private sector, and community representatives. Capacity building is a significant component of the implementation process, with training programs designed to enhance the capabilities of local institutions and communities in managing and executing adaptation actions.

> ***Case study: How Tonga's JNAP[71] enhances adaptation using an institutional frameworks and stakeholder involvement***
>
> *Tonga's approach to implementing adaptation measures, as outlined in the Joint National Action Plan (JNAP) 2018–2028, reflects a well-structured institutional arrangement and robust stakeholder engagement strategy. The JNAP is overseen by the Tonga Climate Change Committee (TCCC), which coordinates climate adaptation efforts across various governmental departments, including the Ministry of Meteorology, Energy, Information, Disaster Management, Climate Change, and Communication (MEIDECC). This high-level committee ensures that adaptation policies are integrated into national development plans and executed effectively.*
>
> *To engage stakeholders, Tonga employs a participatory approach that involves local communities, civil society organizations, and the private sector in the planning and implementation phases. The JNAP includes regular consultations and workshops to incorporate local knowledge and address the specific needs of vulnerable populations. By creating platforms for dialogue and collaboration, Tonga ensures that adaptation measures are contextually relevant and widely supported.*
>
> *Lessons learned from Tonga's experience include the importance of establishing clear institutional frameworks to manage adaptation efforts and the value of inclusive stakeholder engagement. The participatory approach helps align adaptation strategies with local realities and enhances community buy-in, which is crucial for successful implementation and sustainability of adaptation measures.*
>
> *The outcomes of Tonga's approach include improved coordination among stakeholders, leading to more effective adaptation and disaster risk management. Increased resilience of communities and*

[67] See footnote xx.
[68] See footnote xx.
[69] See https://unfccc.int/topics/adaptation-and-resilience/workstreams/national-adaptation-plans-naps/guidelines-for-national-adaptation-plans-naps.
[70] See https://unfccc.int/sites/default/files/resource/JNAP2_Final-2018-2028.pdf.
[71] See footnote xx.

ecosystems through targeted interventions reflects the success of this comprehensive framework. Lessons learned emphasize the importance of involving a diverse range of stakeholders to ensure inclusive and effective implementation and the necessity of a well-defined institutional framework for effective coordination and oversight.

b) In **Timor-Leste**,[72] interim implementation arrangements have been developed to support the NAP. This framework includes the establishment of a National Adaptation Steering Committee (NASC) and sector-specific working groups to guide the implementation process. Capacity building is also a focal point, with efforts aimed at strengthening the capabilities of government agencies and local communities through training and technical support.

Case study: Timor-Leste's insights on Governance and Stakeholder Engagement from the NAP[73]

Timor-Leste's NAP underscores a comprehensive approach to adaptation, focusing on institutional arrangements and stakeholder engagement. The National Directorate for Climate Change within the Ministry of Agriculture and Fisheries oversees the NAP, providing strategic direction and coordination. This effort is bolstered by the Climate Change Coordination Committee, which integrates representatives from various government sectors to ensure that adaptation measures align with national policies.

Stakeholder engagement is central to Timor-Leste's strategy, with a participatory approach involving local communities, civil society organizations, and the private sector. Regular consultations, workshops, and community meetings are conducted to incorporate local knowledge and ensure that adaptation strategies meet specific needs and have broad-based support.

Resource mobilization is addressed by securing funding from both national and international sources to support adaptation projects. These efforts have resulted in enhanced institutional capacities for planning and implementing adaptation actions, as well as improved coordination among sectoral ministries and stakeholders. Key lessons from Timor-Leste's experience include the importance of investing in capacity building for effective implementation and the flexibility of interim arrangements to adapt to evolving needs during early-stage adaptation efforts.

c) **Thailand**[74] has adopted a different approach by establishing a Working Group on National Climate Change Adaptation Implementation Integration. This group comprises representatives from various government ministries, research institutions, and civil society organizations, promoting a cohesive and integrated implementation of adaptation strategies. A significant aspect of Thailand's approach is the integration of climate change adaptation into sectoral policies and development plans.

Study case: Thailand's governance structures and collaborative approaches

Thailand's NAP (2024)[75] *emphasizes a structured approach to implementing adaptation measures through effective institutional arrangements and stakeholder engagement. The National Climate Change Committee (NCCC) provides high-level oversight and strategic direction, ensuring that adaptation actions align with national policies. Supporting this committee is the Adaptation Working Group, which is tasked with monitoring and evaluating the progress of adaptation actions. This group ensures that measures are effectively implemented and aligned with national objectives.*

Stakeholder engagement is a key component of Thailand's approach. The NAP includes extensive consultations with local communities, non-governmental organizations, and the private sector to gather diverse perspectives and ensure that adaptation strategies are contextually relevant. This

[72] See https://www4.unfccc.int/sites/NAPC/Documents/Parties/Timor%20Leste%20NAP.pdf.
[73] See footnote xx.
[74] See https://unfccc.int/sites/default/files/resource/NAP_THAILAND_2024.pdf.
[75] See footnote 66.

participatory approach helps incorporate local knowledge and foster broad-based support for adaptation initiatives.

The outcomes of Thailand's approach include enhanced integration of adaptation measures into both national and sectoral policies and improved implementation through coordinated efforts and stakeholder engagement. Lessons learned from Thailand's experience highlight the importance of embedding adaptation into broader policy frameworks to ensure coherence and effectiveness. Additionally, a collaborative approach involving multiple stakeholders is crucial for enhancing the implementation process, as it ensures that adaptation strategies are comprehensive and responsive to the needs of various sectors and communities.

41. The experiences of Tonga, Timor-Leste, and Thailand provide insights into the implementation of adaptation actions. Tonga's multi-stakeholder approach and strong institutional framework, Timor-Leste's capacity-building and interim arrangements, and Thailand's integrated policy approach all offer lessons on how to effectively manage and execute adaptation efforts. Each case underscores the importance of structured institutional arrangements, active stakeholder engagement, and the integration of adaptation measures into broader policies and development plans. These examples can serve as references for other countries seeking to enhance their adaptation implementation frameworks.

d) Monitoring, evaluation and learning (MEL)

42. Monitoring, evaluation, and learning (MEL) are crucial for effective climate adaptation action. While countries use various terms for MEL, this information note will consistently use the term MEL as defined by the AC (UNFCCC, 2014).[76] A robust MEL system is vital for ensuring that adaptation strategies are on track, achieving their goals, and supporting ongoing improvement (IIED, 2013).[77] Such systems depend on well-structured institutional arrangements and active stakeholder engagement to ensure continuous collection, documentation, and communication of essential data (WRI, 2017).[78] This subsection examines the MEL systems of Mozambique, Liberia, Kiribati, Kenya, and Rwanda, highlighting their approaches and key lessons learned.

a) **Mozambique's**[79] National System for Monitoring and Evaluation of Climate Change (SNMAMC) is a central element of its NAP. The SNMAMC was established to systematically track climate change impacts and adaptation efforts across the country. This centralized system facilitates comprehensive monitoring and evaluation by collecting and analyzing data from various sources. Stakeholder involvement is a key feature, with contributions from government agencies, non-governmental organizations (NGOs), and local communities.

Case study: Centralized data systems and broad stakeholder engagement in Mozambique's climate adaptation efforts

Mozambique's NAP[80] *emphasizes a robust Monitoring, Evaluation, and Learning (MEL) system as a cornerstone for effective climate adaptation. The country has established an institutional framework that integrates the National System for Monitoring and Evaluation of Adaptation Measures (SNMAMC), which centralizes data collection and analysis to ensure consistency and accessibility. This system is supported by various government bodies and agencies responsible for overseeing adaptation initiatives, ensuring alignment with national objectives.*

A key aspect of Mozambique's MEL approach is its broad stakeholder engagement. The involvement of local communities, non-governmental organizations, and sectoral experts ensures that the data

[76] See footnote xx.
[77] International Institute for Environment and Development (IIED). (2013). Monitoring and Evaluation of Climate Change Adaptation: A Guide for Practitioners. Retrieved from https://pubs.iied.org/13507IIED.
[78] See footnote xx.
[79] See https://unfccc.int/sites/default/files/resource/National_Adaptation_Plan_Mozambique.pdf.
[80] See footnote xx.

collected is comprehensive and representative of diverse perspectives. Capacity-building efforts are integral to this process, with targeted training programs designed to enhance stakeholders' abilities to contribute effectively to monitoring and evaluation activities. These efforts help improve data collection capabilities and ensure that stakeholders can participate meaningfully in the adaptation process.

The outcomes of Mozambique's MEL approach include enhanced data collection and informed decision-making. Data gathered through the SNMAMC guides policy adjustments and strategy refinements, improving the effectiveness of adaptation measures. Centralizing the monitoring system has been beneficial for maintaining data consistency and accessibility. Additionally, the involvement of stakeholders at all levels has supported the credibility and comprehensiveness of the data, ensuring that adaptation strategies are both responsive and robust.

b) **Liberia** has developed a MEL Framework for its NAP, which is managed by the Environmental Protection Agency (EPA). This framework provides a structured approach to tracking adaptation actions, with the EPA playing a key role in coordinating M&E activities.

Case study: The role of monitoring, Evaluation, and learning frameworks and stakeholder collaboration in Liberia

Liberia's NAP integrates a comprehensive MEL framework designed to enhance climate adaptation efforts. The country has established a robust institutional arrangement led by the Environmental Protection Agency (EPA), which plays a pivotal role in coordinating and overseeing the MEL system. This institutional framework ensures that adaptation measures are aligned with national goals and effectively implemented. The EPA's leadership is crucial, providing strategic direction and ensuring that the MEL framework remains relevant and responsive to emerging needs.

The MEL system includes regular reporting mechanisms that document progress, challenges, and lessons learned. Structured reporting enhances transparency and accountability, making it easier to track the effectiveness of adaptation measures and make necessary adjustments. This process involves collecting data from various sources and stakeholders, which are then analyzed to assess the performance of adaptation initiatives.

Stakeholder engagement is a key component of Liberia's MEL approach. The NAP emphasizes the involvement of a diverse range of stakeholders, including local communities, government agencies, and civil society organizations. This broad engagement ensures that data collected is representative and that the perspectives of all relevant groups are considered. Capacity-building initiatives are also a vital part of the MEL framework, with training programs designed to improve stakeholders' ability to participate effectively in monitoring and evaluation activities.

Overall, Liberia's MEL framework supports adaptive management by providing valuable insights into the effectiveness of adaptation actions, fostering transparency, and ensuring that strategies are continually refined based on real-world feedback and evolving conditions.

c) **Kiribati**'s approach to monitoring and evaluation is embodied in its Monitoring and Evaluation Framework for the Joint Implementation Plan (KJIP) on Climate Change and Disaster Risk Management.[81] The Development Coordination Committee oversees the implementation of the KJIP, while the Kiribati National Expert Group manages the overall coordination of the M&E process.

[81] See https://www.mfed.gov.ki/sites/default/files/KJIP%20BOOK%20WEB%20SINGLE_0.pdf.

Study case: Monitoring climate adaptation efforts as part of Kiribati's Joint Implementation Plan

Kiribati has developed a robust MEL framework as part of its climate adaptation efforts, detailed in the Kiribati Joint Implementation Plan (KJIP).[82] *The MEL system is anchored in a well-defined institutional structure that ensures adaptation actions are coordinated and aligned with national objectives.*

The framework incorporates various levels of government and technical bodies, with the Office of the President providing overall leadership and oversight. This centralized coordination helps maintain consistency and effectiveness in the implementation of adaptation measures. It supports continuous improvement by facilitating regular assessments and adjustments of adaptation strategies. The multi-level coordination and the engagement of national experts are critical in ensuring the reliability and quality of the monitoring and evaluation process. These efforts contribute to a responsive and adaptive approach to climate change, enhancing the effectiveness of Kiribati's adaptation initiatives.

Stakeholder engagement is a essential aspect of Kiribati's MEL approach. The framework involves a wide range of stakeholders, including local communities, government agencies, and non-governmental organizations. This broad involvement ensures that the data collected reflects diverse perspectives and local needs. Regular consultations and participatory processes are integral to the MEL system, allowing for continuous feedback and adaptation of strategies based on real-world experiences.

e) **In Kenya**,[83] the Integrated Monitoring, Reporting, and Verification (MRV) System, coordinated by the Climate Change Directorate, is a core component of the country's adaptation efforts. This system is embedded within the National Integrated Monitoring System and County Integrated Monitoring System.

Case study: Experiences from Kenya's MEL and MRV Systems

Kenya has established a comprehensive Monitoring, Evaluation, and Learning (MEL) system to support its climate adaptation efforts, as detailed in its updated NDC.[84] *The MEL framework is designed to provide a robust mechanism for monitoring and reporting on climate change actions across both national and county levels. This institutional arrangement ensures that adaptation measures are systematically tracked and evaluated, contributing to improved effectiveness and accountability.*

Central to Kenya's MEL system is the involvement of various stakeholders, including government agencies, local communities, and non-governmental organizations. These entities play a crucial role in data collection, reporting, and verification processes. By integrating monitoring systems across different governance levels, Kenya achieves a holistic view of climate actions, enhancing transparency and supporting informed decision-making.

The MRV (Measurement, Reporting, and Verification) system, part of the broader MEL framework, is pivotal in ensuring that adaptation actions are aligned with national goals. Regular reporting and verification processes contribute to the credibility of the data collected and ensure that adaptation strategies are continuously refined based on empirical evidence.

Stakeholder engagement is integral to this system, facilitating a collaborative approach to climate adaptation and reinforcing the reliability and comprehensiveness of the monitoring and evaluation process. This multi-level coordination enhances Kenya's ability to respond effectively to climate challenges and supports ongoing improvement in adaptation efforts.

[82] See footnote xx.

[83] See https://unfccc.int/sites/default/files/NDC/2022-06/Kenya%27s%20First%20%20NDC%20%28updated%20version%29.pdf.

[84] See footnote xx.

f) **Rwanda**[85] has established a robust MRV system managed by the Rwanda Environment Management Authority (REMA). This system features a well-defined institutional framework with clear roles and responsibilities for various stakeholders. Capacity-building initiatives are an essential part of the MRV system, aimed at improving the skills and knowledge of relevant institutions and stakeholders.

> ***Case study: Rwanda's MEL System and its Role in Climate Resilience***
>
> *Rwanda has established a robust MEL framework for adaptation, emphasizing strong institutional arrangements and stakeholder engagement. The 2022 GCA report[86] outlines a comprehensive strategy, supported by clear institutional roles and responsibilities to ensure effective monitoring and reporting. Key institutions, including the Rwanda Environment Management Authority (REMA) and the Ministry of Environment, play pivotal roles in coordinating these activities.*
>
> *Regular monitoring and reporting are integral to maintaining data quality and refining adaptation strategies. This process involves frequent updates and assessments to ensure that adaptation measures are responsive to emerging information and changing conditions. The clarity in roles and responsibilities within Rwanda's MEL system has significantly enhanced its efficiency. Each institution is tasked with specific duties related to monitoring and reporting, which has streamlined the process and improved overall data reliability.*
>
> *Stakeholder engagement is a core of Rwanda's approach. The involvement of local communities, civil society organizations, and private sector partners ensures that diverse perspectives are incorporated into the adaptation planning and evaluation processes. This inclusive approach not only fosters greater ownership of adaptation measures but also enhances the adaptability and effectiveness of strategies. Continuous monitoring and iterative learning from these stakeholder inputs have been crucial in adapting strategies to better address the impacts of climate change.*

43. The case studies from Mozambique, Liberia, Kiribati, Kenya, and Rwanda above highlight various approaches to MEL and demonstrate how continuous learning and improvement can be achieved in the context of climate adaptation.

44. The study cases on MEL systems above emphasize the importance of developing integrated frameworks that cover various aspects of adaptation. In these examples, developing countries are increasingly setting up comprehensive systems to track indicators related to water quality, biodiversity, and climate-sensitive diseases. For instance, countries like Bhutan[87] has implemented real-time water monitoring systems, and the **Philippines**[88] uses MEL indicators to track NAP implementation and share reports at multiple levels. These developments reflect a shift towards more systematic and sophisticated monitoring approaches, facilitating better assessment of adaptation efforts and informed decision-making.

45. Many countries are focusing on building capacity and training stakeholders to enhance their involvement in monitoring and evaluation activities. **Papua New Guinea**,[89] for example, has developed a comprehensive adaptation M&E framework, trained staff in key themes, and established a progress dashboard. **Serbia**[90] has adopted by-laws for adaptation program reporting and conducts national surveys to gauge public awareness of climate issues. These examples underscore the importance of involving various stakeholders and institutionalizing MEL processes to ensure effective adaptation actions.

[85] See https://gca.org/wp-content/uploads/2023/01/GCA_State-and-Trends-in-Adaptation-2022_Fullreport.pdf?_gl=1*4ejiny*_ga*MTMyNTEwMTA5My4xNzE4NjkzMTkx*_up*MQ.
[86] See footnote xx.
[87] See footnote xx.
[88] See footnote xx.
[89] See footnote xx.
[90] See footnote xx.

46. Specific indicators are increasingly being incorporated into MEL efforts to enhance their effectiveness. **Bangladesh**[91] has established a system for regular monitoring and evaluation, including national and project-level reports, demonstrating a commitment to transparent and accountable adaptation efforts. **Bhutan's** integrated water quality monitoring system and permanent research plots[92] reflect efforts to improve long-term data collection and research capacity.

e) Other cross-cutting enabling factors and actions

i. Promoting knowledge exchange

47. Examples from developing countries illustrate how adaptation planning can be effectively addressed through institutional arrangements and stakeholder engagement. For instance, **Rwanda**'s leadership in integrating climate resilience into its national planning has been recognized globally, inspiring other countries to follow suit.[93] Secondly, sharing successful strategies through knowledge exchange helps other nations facing similar challenges learn from these experiences. For example, the dissemination of Ethiopia's experience in restoring degraded lands through community-led initiatives has informed similar efforts in neighbouring countries.

48. In **Bangladesh**,[94] efforts focus on Ecosystem-based Adaptation (EbA) options and the active involvement of community-based organizations, highlighting the integration of adaptation into local practices. Bhutan demonstrates its commitment through the development of river basin management plans and climate-resilient master plans, embedding adaptation into key planning processes.

49. In the **Philippines**,[95] a comprehensive approach includes the creation of a stakeholder engagement strategy, integration of adaptation plans with local and sectoral programs, and development of simplified versions of the NAP for local use. These initiatives reflect a commitment to effective communication and coordination. Similarly, Serbia's integration of climate adaptation into the Nature Protection Programme and the Urban Development Strategy underscores the importance of embedding adaptation measures within broader policy frameworks.

50. Capacity building and community engagement are central to effective adaptation planning. Countries are investing in training and developing local disaster risk management plans, particularly in vulnerable and marginalized communities. This approach empowers local entities to actively participate in adaptation efforts, thereby enhancing the overall effectiveness of climate strategies and ensuring that they address specific local needs. For instance, the Philippines has created sectoral teams and developed local adaptation plans, while **Papua New Guinea**[96] has integrated climate change into school curricula and established sectoral focal points. These efforts underscore the importance of coordinating across different levels of government and involving local communities in the adaptation planning and execution processes.

51. For example, in the **Philippines**, institutional arrangements that prioritize community engagement have been crucial in developing disaster risk reduction strategies that protect the most vulnerable populations. Additionally, these frameworks help overcome resource constraints by improving resource allocation and attracting international support. Inclusivity and equity are also paramount, ensuring that adaptation strategies address the needs of marginalized communities. Finally, institutional arrangements support capacity building and knowledge sharing, essential for enhancing adaptive capacities and fostering innovation in these countries.

[91] See footnote xx.
[92] See footnote xx.
[93] See footnote xx.
[94] See footnote xx.
[95] See footnote xx.
[96] See footnote xx.

ii. Overall coordination

52. By examining the experiences of countries like **Cambodia, Dominica, Vietnam, Kenya, and Brazil**, we gain insights into diverse strategies for enhancing climate adaptation through coordinated institutional frameworks and active stakeholder participation.

a) In **Cambodia**,[97] the period from 2003 to 2015 marked significant progress in the country's climate change response through the development and refinement of national institutional arrangements. The establishment of the National Climate Change Committee (NCCC) was a key step in this process. The NCCC, a multi-sectoral body, was tasked with coordinating climate change responses across various government ministries and sectors. Additionally, the Cambodia Climate Change Strategic Plan (CCCSP) was formulated to outline the country's climate priorities and actions comprehensively. Capacity-building programs were implemented to equip government officials and stakeholders with the necessary skills and knowledge. This structured approach led to enhanced inter-ministerial coordination, better resource allocation, and improved alignment of climate actions with national development goals, underscoring the importance of robust institutional frameworks and continuous capacity development. This case illustrates the importance of evolving institutional frameworks to support climate adaptation efforts. The establishment of multi-sectoral bodies and strategic plans, coupled with capacity-building initiatives, has significantly improved country's coordination and effectiveness of climate actions.

b) **Dominica**'s[98] response to the devastation caused by Hurricane Maria involved the establishment of the Climate Resilience Execution Agency for Dominica (CREAD). Created to centralize and streamline resilience-building efforts, CREAD played a crucial role in coordinating actions across various sectors. The agency's focus on involving local communities, the private sector, and international partners in resilience-building efforts ensured a comprehensive approach to integrating climate resilience into national policies and development plans. The centralized coordination facilitated a holistic strategy for enhancing the country's capacity to manage and recover from climate-related disasters. This case demonstrates the effectiveness of centralized coordination and broad stakeholder engagement in building resilience and ensuring cohesive action. Dominica's experience with CREAD demonstrates how centralized coordination and broad stakeholder engagement can enhance resilience and streamline adaptation efforts.

c) **Vietnam's**[99] governance system presents both challenges and opportunities for climate change adaptation. The country has worked on developing climate change adaptation policies at both national and local levels while involving a range of stakeholders, including local governments, communities, and the private sector. However, the hierarchical nature of governance in Vietnam has posed challenges to effective policy implementation. Despite these obstacles, targeted capacity-building efforts have improved the ability of local governments to plan and implement adaptation measures. This case highlights the need for flexible governance structures that can adapt to hierarchical systems and the critical importance of strengthening local capacities for effective adaptation. Vietnam's governance system shows the complexities and challenges of implementing climate adaptation policies within a structured governance framework. The case highlights the need for flexibility and inclusiveness in governance to overcome implementation barriers and strengthen local capacities.

d) **Kenya's**[100] approach to climate adaptation is guided by its NAP and National Climate Change Action Plan (NCCAP). These frameworks outline the country's institutional and coordination systems for adaptation and stakeholder engagement. Key activities include the development of the NAP to guide national adaptation efforts, the implementation of a comprehensive stakeholder engagement strategy under the NCCAP, and the establishment of inter-ministerial committees to coordinate adaptation actions. Kenya's experience underscores the importance of integrating adaptation planning into national development agendas and the benefits of involving diverse stakeholders in

[97] See https://climate-laws.org/document/cambodia-climate-change-strategic-plan_5e34.
[98] See https://www.devex.com/organizations/climate-resilience-execution-agency-for-dominica-184103.
[99] See footnote xx.
[100] See footnote xx.

the adaptation planning and implementation processes. Effective coordination mechanisms and stakeholder engagement strategies are crucial for successful adaptation efforts.

e) **In Brazil**,[101] the Brazilian Climate Change Forum serves as a key multi-stakeholder platform aimed at fostering coordination between civil society and government entities. Established to promote dialogue and mobilize society to address climate change, the forum includes representatives from government, civil society, business, and academia. The creation of thematic chambers, such as one focusing on adaptation, has facilitated discussions and advancements on specific climate issues. The forum's regional, state, and municipal climate change forums engage local stakeholders, which is critical for advancing climate policy across different governance levels. Brazil's case highlights the effectiveness of multi-stakeholder platforms in raising public awareness, influencing national policies, and engaging regional and local forums in climate policy development.

53. These case studies collectively highlight the diverse approaches and outcomes of different countries' efforts to coordinate climate adaptation. The experiences of **Cambodia, Dominica, Vietnam, Kenya, and Brazil** underscore the key role of institutional arrangements and stakeholder engagement in achieving effective climate adaptation. Robust regulatory frameworks, clear functional mandates, and ongoing capacity-building efforts are essential for integrating adaptation into national development agendas. The understandings gained from these examples offer valuable lessons for future adaptation initiatives, emphasizing the need for coordinated and inclusive approaches to building climate resilience.

iii. Information, education, communication and climate services

54. Appropriate institutional effective dissemination of climate change information and adaptation strategies is vital for building societal resilience and facilitating informed decision-making.[102] Effective adaptation relies on robust information, education, communication, and climate services.[103] Strengthening the articulation between various actors involved in these processes is crucial for building capacity and establishing effective adaptation measures. Lessons learned from partnerships in these areas highlight the importance of collaborative efforts in enhancing knowledge dissemination and capacity building. Case studies show that well-coordinated partnerships can significantly improve the effectiveness of adaptation strategies and ensure that relevant information reaches all stakeholders (Girod et al., 2022; World Bank, 2023).[104]

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56. This section explores how various countries have established institutional frameworks and engaged stakeholders to enhance communication, education, and climate services. By examining case studies from **India, South Africa, Côte d'Ivoire, Peru, Senegal, and the Dominican Republic**, we can gain insights into successful approaches and identify key lessons learned.

a) **India's**[106] approach to climate change adaptation in its rapidly urbanizing cities is noteworthy. The study by Singh et al. (2021) provides a comprehensive review of existing adaptation actions and explores opportunities for achieving triple wins—simultaneous benefits for climate mitigation, adaptation, and development. The assessment involved engaging local governments, NGOs, and

[101] See footnote xx.
[102] IPCC. (2022). Climate Change 2022: Impacts, Adaptation, and Vulnerability. IPCC. Retrieved from IPCC.
[103] See footnote xx.
[104] See footnote xx.
[105] See footnote xx.
[106] Singh, C., Madhavan, M., Arvind, J. and A. Bazaz (2021). Climate change adaptation in Indian cities: A review of existing actions and spaces for triple wins. In: Urban Climate. Volume 36. Available at https://www.sciencedirect.com/science/article/abs/pii/S2212095521000134.

community groups, highlighting the importance of integrating diverse perspectives into adaptation strategies. The outcomes include enhanced urban resilience and actionable policy recommendations that underscore the value of combining adaptation and development goals while actively involving various stakeholders.

b) **In South Africa**,[107] the National Climate Change Information System (NCCIS) represents a significant effort to centralize climate data and improve access to climate services. The NCCIS integrates data from various sources, making it accessible and user-friendly through a dedicated platform. Capacity-building initiatives have been crucial in training stakeholders to effectively use the system and interpret climate data. This approach enhances informed decision-making and ensures that stakeholders can access reliable climate services tailored to their needs, demonstrating the importance of making climate information accessible and supporting users through training.

c) **Côte d'Ivoire**'s NAP communication strategy and digital campaign[108] exemplify innovative approaches to engaging youth in climate adaptation. By developing a comprehensive communication strategy and launching a digital campaign targeting young people, Côte d'Ivoire has successfully raised awareness and fostered active participation in climate adaptation initiatives. The use of social media and digital platforms has proven effective in reaching and engaging youth, demonstrating that targeted communication strategies and digital tools can significantly enhance engagement and impact.

d) **Peru**'s NAP[109] process highlights the critical role of public engagement and communication. Peru has implemented various stakeholder consultations, public awareness campaigns, and information dissemination efforts to build broad-based support for climate adaptation. By involving a diverse range of stakeholders and using multiple media channels to share information, Peru has increased public understanding and participation in adaptation efforts. This approach illustrates the importance of inclusive engagement and clear communication in fostering support for adaptation measures.

e) **Senegal**'s development of climate information services and early warning systems provides valuable lessons in enhancing resilience to climate impacts.[110] Following the 2020 floods in Thiès, Senegal implemented early warning systems and climate information services to improve community preparedness and response. Engaging communities in the development and use of these systems has been crucial for ensuring their relevance and effectiveness. Senegal's experience underscores the importance of timely information and community involvement in reducing vulnerability to climate hazards.

f) **The Dominican Republic**'s Resilience and Climate Change Observatory represents a collaborative effort to improve the availability and accessibility of climate change information. This partnership between the Instituto Tecnológico de Santo Domingo (INTEC) and various national and international institutions aims to ensure that climate information is actionable and understandable for decision-makers at the municipal and individual levels. By focusing on data collection, analysis, and dissemination, the observatory enhances decision-making and resilience, highlighting the benefits of collaborative approaches and user-friendly information.

[107] See https://nccis.environment.gov.za/climate-services.

[108] See NAP Communication Strategy and Digital Campaign to Engage Youth in Climate Change Adaptation. https://napglobalnetwork.org/2024/04/cote-divoire-launches-nap-comms-strategy-engage-youth-climate-change-adaptation/.

[109] See Public engagement and communication as part of Peru's NAP process. https://napglobalnetwork.org/2022/09/public-engagement-local-adaptation-peru/.

[110] Institute for Social and Environmental Transition-International (ISET-International). (2020). Strengthening climate information services and early warning systems in Senegal: Learning from the 2020 floods in Thiès. Retrieved from https://www.i-s-e-t.org/_files/ugd/558f8a_cf98a5682f58430b836b2561dfd9450a.pdf.

57. NAPs increasingly emphasize the importance of information, education, communication, and climate services as fundamental components of effective adaptation strategies.[111] One prominent development is the development and implementation of tools and methodologies to integrate climate adaptation into broader planning and policy frameworks. This includes creating technical guides, integrating adaptation into master plans, and developing improved methodologies for local climate adaptation planning.[112]

58. Another significant trend is the preparation and implementation of sector-specific climate adaptation plans. Many of the 58 countries that have recently submitted its NAP as of 15 of August 2024 such **Bangladesh and Indonesia,** they are focusing on developing comprehensive sectoral plans that address climate change impacts and involve multiple stakeholders in the planning and execution process. This approach highlights the importance of tailoring adaptation strategies to specific sectors and ensuring active stakeholder engagement throughout the process.

[Here diagramme: showing how sector-specific plans are developed in countries like Bangladesh and Indonesia, highlighting the focus on addressing climate impacts specific to each sector and involving multiple stakeholders.]

59. Enhancing communication and stakeholder engagement strategies is also a growing focus. Several countries are developing targeted engagement strategies, simplifying adaptation plans for local entities, and employing various communication techniques to reach specific stakeholder groups. These efforts underscore the recognition of the need for effective communication to ensure that adaptation measures are well understood, accepted, and implemented by all relevant actors.

60. Capacity building and institutional strengthening are additional key trends. Many countries are investing in updating institutional frameworks and roles to support climate adaptation efforts. This includes defining clear roles and responsibilities for various government units and establishing coordinating mechanisms that align with national and international frameworks. Strengthening institutional arrangements ensures that climate adaptation efforts are well-coordinated and effectively managed.

iv. Finance and investment strategies

61. Finance and investment strategies are integral to the effective implementation of climate adaptation efforts. Developing these strategies involves not only specialized financial expertise but also close coordination with entities responsible for planning and executing adaptation interventions. Institutional arrangements and stakeholder engagement are crucial for ensuring that these strategies are robust, comprehensive, and aligned with national adaptation goals. This subsection examines the approaches of **Cambodia, Chile, Colombia, the Kyrgyz Republic, and the Pacific region**, providing insights into their finance and investment strategies for climate adaptation.

a) **Cambodia**[113] has established a comprehensive financing framework to support its NAP. The development of this framework involved creating a detailed plan that outlines various funding sources, mechanisms, and priorities for managing adaptation finance. The framework integrates financial planning with adaptation strategies to ensure alignment with national goals. Key activities included stakeholder engagement with government agencies, international donors, and private sector entities to foster collaboration and secure diverse funding sources. Capacity building was also emphasized to strengthen local institutions' ability to manage and implement adaptation finance effectively. The outcomes demonstrated successful resource mobilization from multiple sources, including international climate funds and domestic budgets. Enhanced coordination among stakeholders led to more efficient use of financial resources. Lessons learned highlight the importance of an integrated approach to financial planning and broad stakeholder involvement in mobilizing and managing adaptation finance.

[111] UNFCCC. (2012). National Adaptation Plans: Technical Guidelines for the National Adaptation Plan Process. UNFCCC.

[112] Global Center on Adaptation. (2022). State and Trends in Adaptation 2022. Global Commission on Adaptation.

[113] See footnote xx.

b) **Chile's**[114] Financial Strategy on Climate Change outlines a national approach to financing both adaptation and mitigation efforts. This strategy encompasses the development of a financial strategy that includes funding sources, financial instruments, and investment priorities. The integration of climate finance into broader economic and financial policies has been a central focus, enhancing coherence and effectiveness. Capacity enhancement efforts targeted financial institutions, improving their ability to assess and manage climate risks. The strategy has led to the alignment of climate finance with national policies and the development of innovative financial instruments designed to attract private sector investment in climate adaptation. Key lessons include the value of integrating climate finance into broader financial policies and the role of innovative instruments in mobilizing additional resources.

c) **In Colombia**,[115] the establishment of the Financial Management Committee within the National Climate Change System has been instrumental in promoting the integration of climate finance into economic and financial planning. This committee oversees and coordinates climate finance activities, focusing on resource mobilization from both domestic and international sources. Incorporating climate finance considerations into national economic and financial planning processes has enhanced the efficiency and effectiveness of resource use. Outcomes include improved coordination of climate finance activities across various sectors and successful mobilization of resources for climate adaptation and mitigation projects. Lessons learned emphasize the benefits of a coordinated approach and the importance of integrating climate finance into comprehensive planning processes.

d) The **Kyrgyz Republic**[116] has established the Climate Finance Centre (CFC) to streamline the development and implementation of climate investment programs and projects. The CFC coordinates climate finance activities and promotes stakeholder engagement in designing, implementing, and monitoring climate investments. The centre's activities have led to improved coordination across sectors and enhanced support for climate investment programs. Effective implementation of these programs has been a significant outcome. Key lessons include the advantages of centralized coordination for managing climate investments and the importance of active stakeholder engagement for successful program development and execution.

e) **The Pacific region**[117] has implemented the Pacific Climate Change Finance Assessment Framework (PCCFAF) to provide a structured approach to assessing and managing climate finance. This framework evaluates climate finance needs, sources, and mechanisms, enhancing the ability of regional and national institutions to manage climate finance effectively. The development of the framework involved capacity building to improve institutional capabilities and coordination among various stakeholders, including governments, donors, and the private sector. Outcomes include improved assessment capabilities and strengthened institutional capacities for handling climate finance. Lessons learned highlight the importance of comprehensive assessment frameworks and the need for capacity building to manage climate finance effectively.

62. Finance and investment strategies are crucial for the success of NAPs, as they focus on mobilizing and utilizing resources for climate resilience. An emerging trend is the emphasis on integrating climate adaptation into various sectors through targeted investments. This includes funding for climate-resilient infrastructure, agricultural practices, and urban development. For example, investments in climate-resilient infrastructure such as roads and drainage systems, as well as climate-smart agricultural practices, are becoming more common. This trend reflects a growing recognition of the need for comprehensive, sector-specific adaptation measures to build resilience.

63. Exploring diverse approaches to adaptation finance and investment is crucial for understanding the role of various actors and instruments. Multilateral development banks and private financial institutions are increasingly engaged in financing adaptation projects, each employing different strategies and tools. Identifying and analyzing relevant cases where these financial mechanisms have

[114] See footnote xx.
[115] See footnote xx.
[116] See footnote xx.
[117] See footnote xx.

been applied successfully can provide valuable insights into effective finance and investment strategies for adaptation. Case studies of successful financial initiatives can illustrate how different actors and instruments contribute to advancing adaptation efforts (Green Climate Fund, 2023;[118] OECD, 2024).[119]

64. Institutional arrangements and stakeholder engagement are vital for effective adaptation finance strategies. Many countries are setting up dedicated sectoral teams, focal points, and local adaptation programs to ensure that adaptation measures are well-coordinated and aligned with local needs. For example, the Philippines and Papua New Guinea have established sectoral teams and focal points to oversee and implement climate adaptation strategies. This trend emphasizes the need for robust institutional frameworks and active stakeholder involvement to drive effective adaptation outcomes.

Case studies on the costing of climate adaptation institutional arrangements and stakeholder engagement in developing countries

1. Integration of climate-resilient infrastructure (Bangladesh)

Bangladesh has undertaken significant efforts to integrate climate resilience into its infrastructure, particularly through its NAP. The country has invested approximately USD 5 billion in climate-resilient infrastructure projects, such as flood defences and urban drainage systems. The cost of implementing these projects includes not only the construction and engineering expenses but also the costs associated with institutional arrangements and stakeholder engagement. For instance, the Bangladesh Climate Change Strategy and Action Plan emphasizes the importance of involving local communities and stakeholders in the planning process, which adds an additional layer of costs related to public consultations, community training, and participatory planning workshops. These costs are necessary to ensure that adaptation measures are well-tailored to local needs and that the implementation is effective and sustainable (Ministry of Environment, Forest and Climate Change, Bangladesh, 2023).[120]

2. Enhancing institutional capacity for climate adaptation (Kenya)

Kenya has invested significantly in building institutional capacity to support climate adaptation. The country's NAP outlines a budget of approximately USD 1.2 billion to strengthen institutional frameworks and improve stakeholder engagement across various sectors. This budget includes costs for developing and implementing institutional arrangements, such as creating dedicated climate adaptation units within ministries, as well as costs for capacity-building programs for local and national stakeholders. Additionally, Kenya has allocated funds for extensive stakeholder engagement processes, including public consultations and the formation of multi-stakeholder platforms to ensure inclusive participation. These investments are aimed at improving governance and coordination for more effective adaptation outcomes (National Environment Management Authority, Kenya, 2022).[121]

3. Community-based adaptation initiatives (Fiji)

In Fiji, the focus on community-based adaptation initiatives has driven significant costs related to stakeholder engagement and institutional arrangements. The Fijian government has invested around USD 250 million in various adaptation projects, including coastal protection measures and agricultural resilience programs. A substantial portion of this budget is dedicated to engaging local communities in the design and implementation of these projects. This includes funding for community workshops, training sessions, and the establishment of local adaptation committees. These engagement activities ensure that the adaptation measures are aligned with community needs and local knowledge, thus improving the effectiveness and sustainability of the projects (Ministry of Economy, Fiji, 2023).

4. Costs of institutional and technical capacity building (Haiti)

Haiti has faced considerable challenges in building institutional and technical capacity for climate adaptation, reflected in its NAP costing. The country has allocated approximately USD 700 million to enhance institutional frameworks and technical capabilities. This budget covers the costs of developing new institutions dedicated to climate adaptation, upgrading existing ones, and training personnel in

[118] Green Climate Fund. (2023). Annual Report 2023. Retrieved from https://www.greenclimate.fund.
[119] See footnote xx.
[120] See footnote xx.
[121] See footnote xx.

climate resilience practices. Additionally, Haiti has invested in stakeholder engagement activities, including consultations with vulnerable communities and capacity-building workshops for local stakeholders. These efforts are essential for improving the effectiveness of adaptation measures and ensuring that they are well-coordinated and supported across different levels of government and society (Ministry of Environment, Haiti, 2022).[122]

5. Data collection and technical support costs (Papua New Guinea)

Papua New Guinea has invested around USD 300 million in climate adaptation efforts, with a significant portion allocated to improving data collection and technical support. This investment is crucial for addressing gaps in climate data and enhancing technical capacities to support adaptation planning and implementation. Costs include the establishment of monitoring and evaluation systems, training for technical staff, and the development of climate data platforms. Additionally, Papua New Guinea has allocated funds for stakeholder engagement activities, such as consultations and workshops aimed at integrating local knowledge and perspectives into adaptation strategies. These expenditures are vital for ensuring that adaptation measures are informed by accurate data and are effectively implemented at the community level (Climate Change Development Authority, Papua New Guinea, 2023).[123]

v. Lessons learned, good practices, and innovations

65. This section summarizes key insights from case studies on climate adaptation in developing countries, focusing on effective institutional arrangements and stakeholder engagement. The table below highlights various lessons learned, good practices, and innovations that demonstrate the impact of tailored approaches and collaborative efforts.

66. This overview provides a snapshot of practices and strategies that can recognize, inform and inspire effective climate national adaptation measures and support.

Table 1. Approaches and strategies implemented by developing countries to enhance climate adaptation through effective institutional arrangements, and stakeholder engagement.

Lessons Learned, Good Practices, and Innovations	Country	Description	Reference (to be completed)
Community-based adaptation projects	Nepal	Involves local stakeholders in climate-resilient agricultural practices, enhancing food security and resilience.	*[GCA (2022). State and Trends in Adaptation 2022. Global Commission on Adaptation.]*
Regional cooperation on climate challenges	Pacific Island Nations	Shared resources and best practices to address sea-level rise and other common climate issues.	
National system for monitoring and evaluation	Mozambique	Tailored to align with national governance and climate challenges, enhancing relevance and sustainability.	
Long-Term sustainable engagement framework	Liberia	Transitioned from short-term projects to a long-term Monitoring and Evaluation Framework led by the EPA.	

[122] See footnote xx.
[123] See footnote xx.

Development coordination committee	Kiribati	Engages diverse stakeholders in monitoring and evaluating the Joint Implementation Plan for climate adaptation.	
Integrated MRV System	Kenya	Centralized coordination to ensure alignment of adaptation actions with national goals and reduce inefficiencies.	
MRV System with continuous Training	Rwanda	Incorporates regular training to build capacity and adapt to evolving challenges in the MRV system.	
Financial management committee	Colombia	Integrates climate finance into national economic planning, ensuring alignment with broader development goals.	
Climate adaptation learning hubs	Philippines	Fosters knowledge sharing and capacity building among government, academia, and civil society for adaptation.	
Digital platforms for risk mapping	Kenya	Utilizes digital platforms for participatory risk mapping, involving local communities in data collection and adaptation planning.	

V. Barriers and challenges faced by developing countries

67. Some barriers and challenges in relation to setting up institutional arrangements and engaging stakeholders in adaptation have been identified in the sources and case studies analysed for this report.

68. One of the primary obstacles is limited financial resources. Many developing countries struggle with inadequate funding to support comprehensive climate adaptation plans and institutional frameworks. For example, in some developing countries, the lack of sufficient financial resources has limited the implementation of its NAP, impacting the country's ability to build resilient infrastructure and invest in key adaptation measures.

69. Another significant challenge is institutional capacity and governance issues. Developing countries frequently encounter weak institutional frameworks, lack of technical expertise, and insufficient human resources. In some developing countries, the weak institutional capacity has hampered the effective coordination of adaptation efforts and the implementation of adaptation strategies outlined in the NAP. This situation often results in poor coordination between different levels of government and between government and non-governmental organizations, reducing the overall effectiveness of adaptation measures.

70. Political instability and shifting priorities also pose considerable challenges. In many developing countries, political instability can disrupt climate adaptation efforts by causing frequent changes in government priorities and policies. In some developing countries, political instability has affected the continuity and consistency of adaptation projects outlined in the NAP, leading to disruptions in implementation and stakeholder engagement efforts. Frequent changes in leadership can result in fluctuating levels of commitment and support for climate adaptation initiatives.

71. Limited stakeholder involvement is another critical barrier. In some developing countries, there is insufficient engagement of local communities, marginalized groups, and other relevant stakeholders in the adaptation planning process. In some developing countries, despite efforts to involve stakeholders in the NAP process, challenges remain in fully engaging marginalized communities, which impacts the inclusivity and effectiveness of adaptation strategies. Without meaningful participation, adaptation measures may lack local relevance and fail to gain broad-based support.

72. Technical and data limitations further complicate adaptation efforts. Many developing countries face challenges related to inadequate data collection and analysis, which are essential for informed decision-making and effective adaptation planning. In some developing countries, gaps in climate data and limited technical capacity have hindered the development of accurate risk assessments and adaptation strategies as outlined in the NAP. The lack of reliable and up-to-date climate data affects the quality and effectiveness of adaptation interventions.

73. Institutional fragmentation and poor coordination also contribute to the challenges faced by developing countries. In some developing countries, adaptation efforts are often fragmented across various departments and agencies, leading to inefficiencies and lack of cohesion. This institutional fragmentation complicates the implementation of comprehensive adaptation strategies and affects the overall coordination of adaptation actions, as outlined in the NAP.

74. Social and cultural barriers play a role in complicating stakeholder engagement. Developing countries often face challenges related to social norms, cultural practices, and language barriers that can affect the inclusivity and effectiveness of stakeholder engagement efforts. In some developing countries, traditional practices and local knowledge are not always adequately incorporated into formal adaptation planning processes, leading to resistance or lack of support from local communities.

75. The complexity and scale of adaptation needs can overwhelm existing institutional arrangements. Developing countries often face extensive and multifaceted adaptation challenges that require coordinated and large-scale responses. In some developing countries, the scale of adaptation needs, coupled with limited institutional capacity, can complicate the implementation of comprehensive strategies outlined in the NAP. Balancing immediate needs with long-term goals requires robust and scalable institutional frameworks, which can be difficult to establish and maintain under constrained conditions.

76. Addressing these barriers and challenges requires a multifaceted approach, including enhancing financial mechanisms, strengthening institutional capacities, ensuring political stability, improving stakeholder engagement, and building technical and data capabilities.

VI. Concluding remarks

77. Developing country Parties have invested considerable efforts in setting up institutional arrangements and engaging stakeholders in the different elements of the iterative adaptation cycle. These are worth to be recognized in the context of the next global stocktake. This progress could be further substantiated through the following actions by all Parties:

78. To achieve equitable and effective adaptation, continue promoting inclusive participation from diverse stakeholders, including local communities, indigenous peoples, and NGOs, ensuring their integration into adaptation planning and implementation.

79. Continue developing and implementing comprehensive adaptation plans based on current scientific data and local needs. Set clear goals and strategies, focusing on vulnerabilities and needs in developing countries. Ensure regular updates and revisions using new data and stakeholder feedback.

80. Enhance monitoring and reporting mechanisms for adaptation efforts by developing standardized metrics and indicators. Regularly report on adaptation activities and financial flows to track progress, outcomes, and identify areas for improvement.

81. Foster international collaboration and knowledge sharing on adaptation best practices through joint initiatives, research partnerships, and knowledge exchange. Leverage resources and expertise from

international organizations and research institutions to build capacity and accelerate effective adaptation measures.

82. Acknowledge developing countries' adaptation efforts, including their progress on institutional arrangements and stakeholder engagement.

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