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Addendum to the synthesis report for the technical assessment component of the first global stocktake

State of adaptation efforts, experiences and priorities

**Prepared by the secretariat under the guidance of the co-facilitators of the technical dialogue of the first
global stocktake**

Abbreviations and acronyms

ADCOMs	Adaptation Communications
CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
COP	Conference of the Parties
GGA	Global goal on adaptation
GST	Global Stocktake
IPCC	Intergovernmental Panel on Climate Change
LT-LEDS	long-term low-emission development strategy(ies)
NAPs	National Adaptation Plans
NDC	nationally determined contribution
TD	Technical Dialogue
TD1.2	The second meeting of the technical dialogue of the first global stocktake
TD1.3	The third meeting of the technical dialogue of the first global stocktake
USD	United States Dollar

Introduction and overview

1. The CMA requested the secretariat, under the guidance of the co-facilitators of the technical dialogue, to prepare for the technical assessment of the global stocktake a synthesis report on the state of adaptation efforts, experiences and priorities, summarizing the most recent information in the identified sources.¹ This synthesis report was published in April 2022.²

2. Ahead of the third and final meeting of the first technical dialogue of the first GST, taking place in June 2023, this addendum aims to complement the synthesis report by highlighting new developments that have taken place and information that has become available since April 2022, and synthesizing additional information that is particularly relevant to the final phase of the technical assessment and the consideration of outputs component.

II. Global goal on adaptation and collective perspectives on adaptation at various spatial scales: update on work to date under the Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation

A. Update on the Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation

3. CMA 3 established a comprehensive two-year Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation. Throughout 2022, four workshops were held under the work programme on the following themes: (1) enhancing understanding of the global goal on adaptation and reviewing progress towards it; (2) enhancing adaptation action and support; (3) methodologies, indicators, data and metrics, monitoring and evaluation; and (4) communicating and reporting on adaptation priorities. In addition, four summary reports of the workshops, as well as an annual report, were published to capture the discussions that took place and insights that emerged as a result.

4. CMA 4 initiated the development of a framework for the global goal on adaptation, with a view to the framework being adopted at COP 28.³ The framework will guide the achievement of the global goal on adaptation and the review of overall progress in achieving it with a view to reducing the increasing adverse impacts, risks and vulnerabilities associated with climate change, as well as enhance adaptation action and support and provided elements which could be considered when developing the framework.

5. In line with the CMA 4 decision, four workshops are planned to take place in 2023. Preliminary themes proposed for these workshops are:⁴ (1) Changing mindsets and worldviews towards transformation in adaptation, with the inclusion of indigenous peoples' wisdom, values and knowledge and consideration of cross-cutting issues; (2) Zooming in: Target-setting, metrics, methodologies and indicators for the GGA as well as steps of an iterative adaptation cycle and means of implementation, taking account of the systems and sectors set out by the IPCC, and of options for enhancing efforts to mainstream adaptation in national priority areas or sectors; (3) Zooming out: Interfacing the GGA with other processes,

¹ Decision 19/CMA.1, para. 23(b).

² See

<https://unfccc.int/sites/default/files/resource/Synthesis%20report%20on%20the%20state%20of%20adaptation%20efforts%2C%20experiences%20and%20priorities.pdf>

³ Decision 3/CMA.4

⁴ The latest information on the workshop [glasgow-sharm-el](https://unfccc.int/topics/adaptation-and-resilience/workstreams/glasgow-sharm-el-sheikh-WP-GGA#Workshops) Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation is available here: <https://unfccc.int/topics/adaptation-and-resilience/workstreams/glasgow-sharm-el-sheikh-WP-GGA#Workshops>

including a specific focus/session on the GST process; and (4) Taking stock of the Glasgow- is expected to include discussion el-Sheikh work programme: transforming towards an adapted/resilient world, building on: (a) recent scientific research/knowledge/assessment/understanding, and (b) action and support towards that transformation.

6. The global stocktake is mandated to consider several adaptation-specific elements in Article 7, paragraph 14 of the Paris Agreement. These include reviewing the overall progress made in achieving the global goal on adaptation (Article 7.14 d). Information from the Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation is useful for consideration in the GST; indeed, decision 3/CMA.4 invited the subsidiary bodies, at their fifty-eight sessions (June 2023), to consider the outputs under the work programme in reviewing progress in achieving the global goal on adaptation as part of the first global stocktake.⁵The technical dialogue has included discussion on Article 7.14 a, b and c during TD1.2 in Sharm el-Sheikh, and discussion on Article 7.14 d is expected to include discussion during TD1.3 in Bonn (June 2023).

B. Summary of findings and lessons learned from the activities under the work programme at various spatial scales

7. Lessons learned in the work programme emerged from participants’ experiences at global, regional and national levels in a range of aspects related to the global goal on adaptation. The most concrete discussions were on metrics and indicators in terms of both conceptualizing the goal and measuring progress towards it, and on reporting on effort and progress.

8. Related to the usefulness of such indicators, three key lessons applicable at local, national and global levels were identified: (1) measurement standards can yield differing results depending on how they are applied; (2) the importance of understanding the contexts within which indicators are being applied, as a simple quantitative figure may have differing adaptation implications across regions; (3) indicators should be linked to decision-making bodies, at the regional, national or local level.

2. Global

9. At the global level, one lesson learned was that it is important to include indicators for monitoring both outputs and outcomes. By focusing too heavily on monitoring outputs as opposed to outcomes, the monitoring process can lead to a false sense of success. Both quantitative and qualitative indicators can, however, contribute to understanding global progress on adaptation. Further lessons can be learned from experiences at different levels, regional, national and local, notably in the development and use of metrics and indicators for monitoring and reporting. However, the challenge in finding ways to aggregate these at the global level persists.

10. Data aggregation and data availability were key considerations to identify where knowledge and other gaps might persist; indeed, one of the main challenges for developing regional indicators is data availability. Challenges also remain around access to finance flows, particularly related to the lack of capacity to apply for funding, among the least developed countries and small island developing States; the accreditation process; and the long timescales between assessing needs and the finance delivered. One option to accommodate a moving target and changing landscapes and thresholds is using ‘burning embers’ diagrams, that assess aggregate risks at the regional and sectoral level for different warming levels. Such diagrams could be used to present different risk levels under different adaptation scenarios (e.g. limited, incomplete, and proactive adaptation).

11. It was highlighted that countries could take advantage of statistical information that is collected through other relevant international agreements, thereby reducing reporting

⁵ Para. 23.

burdens. There is also a need to ensure that reporting is facilitated at different levels by working on existing monitoring and evaluation frameworks within national ministries.

3. Regional

12. At the regional level, existing initiatives demonstrate how a quantitative climate data indicator process can contribute to a regional report on changing hazards across sectors, mapping climate data such as, temperature rise to assess social vulnerability. The monitoring and evaluation findings could then be fed directly into planning future adaptation actions.

4. National

13. At the national level, collecting information and setting up related infrastructure and systems were highlighted as critical to successfully track progress towards the global goal on adaptation. The process of tracking progress at national level and reporting to a regional (i.e. supranational or multinational) level could provide opportunities to harmonize the tools of different regions across different governance levels (as there is much divergence between reporting tools and guidelines at local and national levels) and to enhance data availability.

14. It is important to identify indicators that reflect the situation on the ground, while at the same time being relevant for reporting at the national and international levels. This involves extensive stakeholder consultation, stocktaking of policies and ongoing programmes, and building on existing data and experience, such as that gained through work supported by multilateral climate funds, for example.

15. Involving stakeholders in the development and use of national information platforms could be promoted through working with subnational governments and multi-stakeholder platforms. Sophisticated information platforms can, however, require a lot of resources for operation, data collection and ensuring functionality. One way to mobilize resources is to leverage existing observation networks, weather services and disaster management systems, as well as other governance levels. In this context, data quality in national reports could be enhanced by including information that clearly identifies the specific risk-reducing impacts of adaptation policies.

16. The involvement of the private sector plays a critical role in achieving the scale of action needed to meet adaptation needs, such as for financial support, technology transfer and skills sharing. A potential challenge identified is the need for the private sector to be profitable when not all adaptation efforts are profit-making initiatives.

17. Intergovernmental arrangements, where national governments engage with subnational actors, are helpful. Through these, governments can provide information and templates for sharing information, through narrative reports, allowing for the assessment of progress in the implementation of adaptation strategies.

18. Crafting meaningful indicators is essential, although time consuming, as they tend to become formative and, if not developed well, they can lose focus and divert resources away from effective action into maladaptive action. There is a need to have a good understanding of the risks and problems that require solving at all levels in order to guide action and expected outcomes. Additionally, having a national monitoring and evaluation system does not replace the need for monitoring and evaluation systems at other levels, and the system needs to allow for changing priorities over time.

19. A variety of approaches in setting goals and using indicators and metrics at the national level were identified, including the following:

(a) Setting aspirational goals around well-being characteristics, such as a possible indicator on food security, which included the identification of existing targets and quantitative indicators under the SDG processes;

(b) Developing national-level indicators, taking into account geographical differences within countries by complementing adaptation strategies implemented by provinces, territories, municipalities and indigenous peoples, and by focusing on sectoral priorities of a given location;

- (c) Using outcomes as indicators at the national or subnational and sectoral levels;
- (d) Developing adaptation actions aligned with NDCs, which include mitigation co-benefits, such as planting trees to address desertification, and thus linking adaptation actions with the Paris Agreement temperature goals;
- (e) Taking sectoral approaches, for example in agriculture, where qualitative indicators can be used, such as “reducing vulnerability to prolonged droughts and enhancing animal welfare to maximize livestock efficiency;”
- (f) Considering the relationship between adaptation actions on the ground and the hierarchical pathway to a national plan, while also noting that adaptation is a long-term endeavour and the end point is difficult to define, and therefore, both quantitative and qualitative metrics need to be developed, when developing national adaptation plans.

5. Local

20. One approach to making progress towards the global goal on adaptation at the local level is to integrate and mainstream adaptation policy into ‘business as usual’ work. For example, cities integrate adaptation considerations into their planning and development, and all relevant public agencies and regional and local administrations have the responsibility to work on adaptation within their areas of responsibility. Monitoring and evaluation systems can then focus on the most important risks, guided by a national risk assessment. Targets could be set by sectoral agencies, regional administrations, and municipalities, rather than national level institutions. This type of approach would allow adaptation plans to be implemented and monitored to ensure vulnerability is reduced and can then be adjusted accordingly at those levels. Ensuring clear divisional responsibility in setting up the system and making it work allows for recognising that different parts of the country may have different adaptation needs.

21. An alternative approach is a more top-down process which embeds a theory of change approach in adaptation planning, particularly at the local level. The national level plan lays the foundation for adaptation policy, enabling identification of adaptation priorities and additional needs and having a cyclical process allows for adjustment of priorities and changing needs. Both approaches demonstrate how iterative approaches to adaptation action can be pursued in practice and can help facilitate adaptation efforts that are better tailored to evolving circumstances over time.

III. Opportunities to enhance and strengthen action and support and international cooperation for adaptation

A. Transformational adaptation

22. The IPCC defines transformational adaptation as adaptation that changes the fundamental attributes of a social-ecological system in anticipation of climate change and its impacts.⁶ In its contribution to the Sixth Assessment Report, the IPCC’s Working Group II places significant emphasis on transformational adaptation as a key opportunity to strengthen adaptation action. It notes that transitioning from incremental to transformational adaptation, for example, can help overcome soft adaptation limits.⁷ In addition, deep-rooted transformational adaptation is identified as an avenue to new adaptation options.

23. The IPCC also outlined that experiential and niche learning, alignment of transformational objectives with strategic government priorities, strong bottom-up

⁶ IPCC, 2022: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, UK and New York, NY, USA; p. 2899.

⁷ IPCC, 2022. P. 26.

governance grounded in local contexts, and appropriate financing are needed.⁸ Moreover, social and gender equity was highlighted as an integral part of transformation towards climate-resilient development.⁹

24. In their national documents (ADCOMs, NAPs and NDCs), Parties typically used the terms transformational and transformative interchangeably.¹⁰

25. Twenty-eight per cent of Parties described their planned transformational adaptation measures in key sectors such as agriculture and fisheries, forestry and terrestrial ecosystems, disaster risk management, and urban areas and settlements. Transformational measures are aimed at increasing adaptive capacity and reducing exposure to anticipated climate change risks and impacts. These focused on developing alternative finance models, financial tools to de-risk investments and improve insurance options for farmers and fishermen, implementing climate-smart and innovative agricultural techniques, strengthening of collection and transformation centres for agricultural products and seed banks, improving technical irrigation systems, implementing innovative forest monitoring technology, promoting the digital transformation of disaster prevention and relief and emergency management, establishing a unified emergency response command platform, and redefining the urban areas. A few Parties developed monitoring and evaluation frameworks and supporting indicators needed to track transformational actions and targets in adaptation priority sectors.

26. Twenty-two per cent of Parties reported that their national documents (ADCOMs, NAPs or NDCs) sought to strengthen transformational adaptation planning and implementation or increase transformational capacity of social and economic systems. It was mentioned that building long-term resilience through adaptation actions should be socially, culturally, ecologically and economically transformational.

27. Similarly, ten per cent of Parties reported integrating transformational adaptation in their national development frameworks. They specifically mentioned transformation of the economic, social and political dimensions to achieve development goals.

28. Eleven per cent of Parties recognized that implementing transformational adaptation requires a combination of technological innovations, institutional reforms, diverse funding sources, including behaviour and cultural shifts within the multi-level governance system.

29. The importance of fostering gender-sensitive and gender-inclusive approaches, as well as increasing gender equality in planning for transformational adaptation, was emphasized by ten per cent of Parties. To reduce gender gaps and gender inequality in adaptation policies, Parties urged developing and implementing gender-transformational policies.

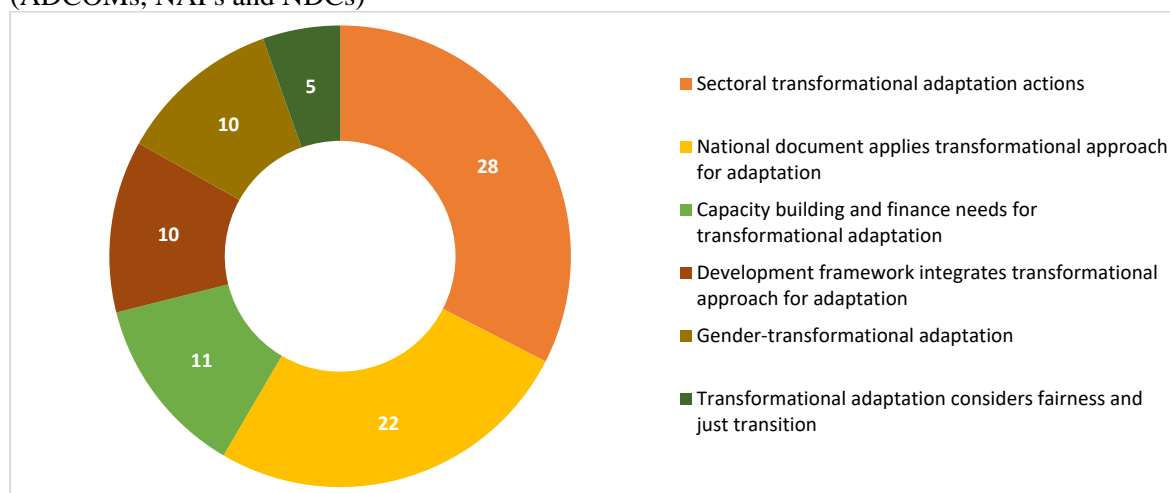
30. In planning and implementing transformational adaptation, five per cent of Parties stressed the need for a deeper understanding of fairness and just transition; some highlighted a lack of sufficient international support required for the just transformations of adaptation priority sectors.

⁸ IPCC, 2022, p. 2558.

⁹ IPCC, 2022, p. 101.

¹⁰ In this report, the term “transformational adaptation” is used, and it encompasses both “transformational” and “transformative” adaptation planning.

Figure 1. Percentage of Parties referencing transformational adaptation in their national documents (ADCOMs, NAPs and NDCs)



31. This analysis demonstrates that some Parties recognize the importance of pursuing transformational adaptation. In doing so, some Parties are also reflecting some of the key social, gender, ecological, governance, and other dimensions that the scientific literature points to as integral components of transformation. As less than one third of Parties currently describe efforts related to transformational adaptation, however, there appears to be significant scope for increasing the scale and spread of such efforts, including in relation to support provided for and international cooperation on transformational adaptation. This is in line with the conclusions of the IPCC; Working Group II, in their contribution to the Sixth Assessment Report, found limited evidence of transformational adaptation to date, pointing to challenges in transitions from incremental to transformational adaptation, due to vested interests, economic lock-in, institutional path-dependencies, and prevalent practices, cultures, norms, and belief systems. Moreover, the potential for transformational adaptation also contrasts with the increased evidence of maladaptation across regions and sectors observed in the scientific literature and documented by Parties in their national reports.¹¹

B. Transboundary climate risks and adaptation

32. The IPCC emphasized the need for increasing approaches to assess and monitor transboundary dimensions of vulnerability and risks since climate vulnerabilities can spill over national borders.¹² They also highlighted the need for more transboundary approaches in vulnerability and risk reduction, adaptation and development including climate-informed transboundary cooperation.¹³ Although the IPCC recognized that some transboundary processes may have positive effects on the sectors and countries,¹⁴ Parties in their national documents thus far focus predominantly on the negative impacts arising from transboundary climate risks.

33. In their national reports, some Parties identified transboundary climate risks across the key sectors or services, as well as adaptation measures to reduce identified transboundary

¹¹ For further analysis, see UNFCCC. 2022. *Synthesis report for the technical assessment component of the first global stocktake: State of adaptation efforts, experiences and priorities*. Bonn: UNFCCC. Available at <https://unfccc.int/sites/default/files/resource/Synthesis%20report%20on%20the%20state%20of%20adaptation%20efforts%2C%20experiences%20and%20priorities.pdf>.

¹² IPCC, 2022, p. 1200.

¹³ IPCC, 2022, p. 1200.

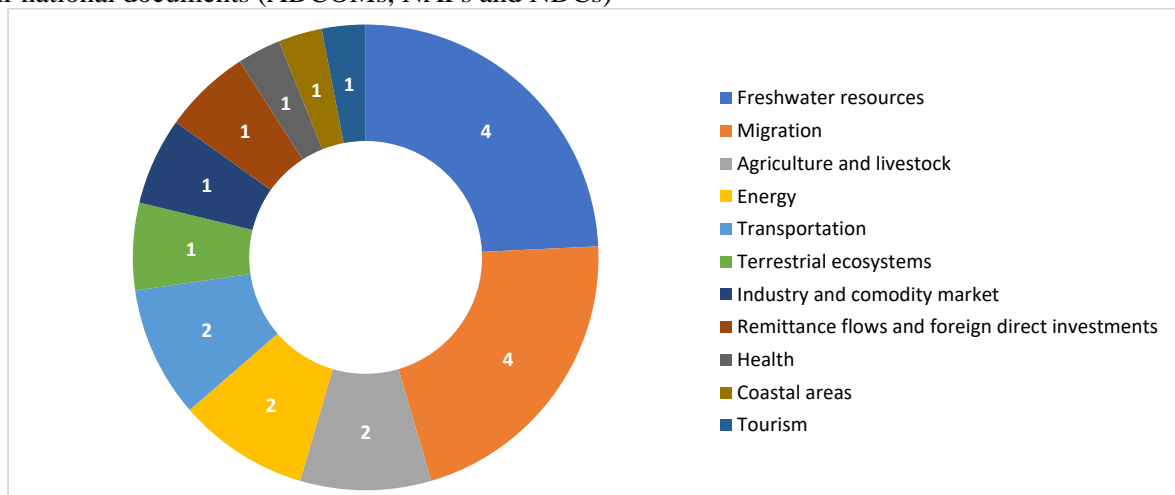
¹⁴ IPCC, 2022, p. 2069.

risks. Figure 2 shows the percentage of identified transboundary climate risks across the key sectors and services.

34. Eight per cent of Parties outlined that shared freshwater resources together with migration or community displacement were vulnerable to transboundary climate risks. Transboundary climate risks to freshwater resources relate to decreasing water availability, watershed degradation, increasing competition for scarce water resources, and inadequate riverine flood management. Transboundary migration and displacement were described to potentially increase social and economic challenges in the host countries. In the agriculture and livestock sector, Parties described increasing drought and crop failure, shocks to the global food supply, raising food prices globally, including transboundary pastoralism and increasing spread of animal diseases. Parties reported in the energy and transportation sectors an erratic energy production due to frequent outages, insufficient power grid, as well as vulnerable regional transportation networks. Transboundary risks were also linked to people who receive remittances from emigrant workers, as well as in manufacturing industry and commodity markets related to supply chain of raw materials and trade disruption.

35. Riverine flooding and drought were mentioned as the main transboundary climate hazards, followed by heavy precipitation, sea level rise, declines in snow cover and sea ice, and drought.

Figure 2. Percentage of Parties referencing transboundary climate risks in key sectors and services in their national documents (ADCOMs, NAPs and NDCs)



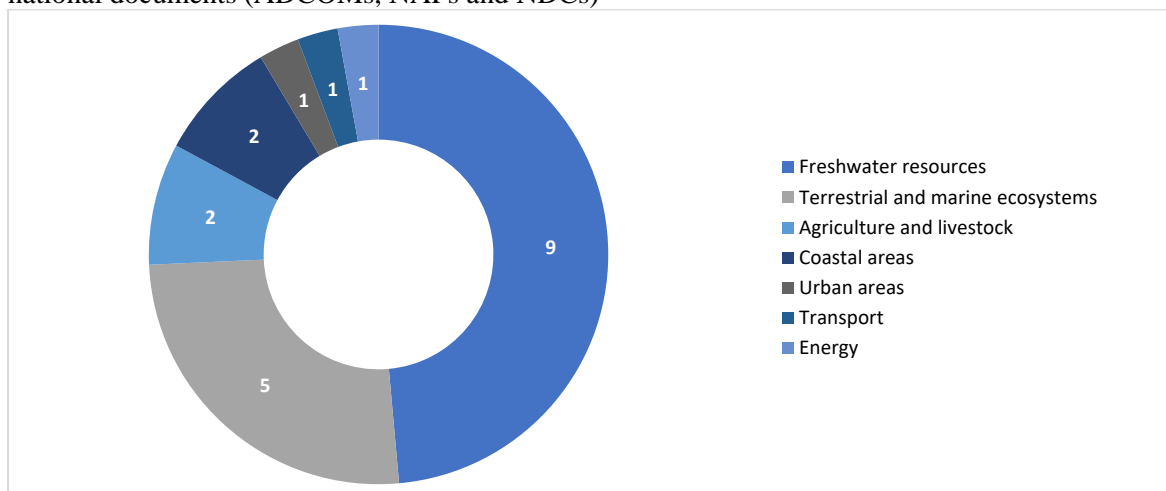
36. Parties described the planned or implemented transboundary adaptation measures primarily in the sectors of freshwater resources (9 per cent of Parties) and terrestrial and marine ecosystems (5 per cent). Adaptation measures to transboundary risks in agriculture and livestock (2 per cent), coastal areas (2 per cent), urban areas, transportation, and energy (1 per cent each) were also mentioned. See figure 3.

37. Transboundary adaptation measures for shared freshwater resources are aimed at protecting water supply (up vs. downstream), developing climate scenarios and hydrometeorological monitoring for transboundary rivers, developing adaptation planning for cross-border river navigation, allocating transboundary water resources equitably, and constructing shared water pumping plants and aqueducts.

38. Efforts in terrestrial and marine ecosystems focused on strengthening conservation and restoration of transboundary wetlands and marine protected areas, reducing and preventing the spread of invasive species, and promoting integrated forest management.

39. In the agriculture and livestock sector, adaptation to transboundary risks included establishing early warning systems and developing climate modelling, while in coastal areas, transboundary measures focused on implementing integrated coastal zone management.

Figure 3. Percentage of Parties referencing transboundary adaptation measures in key sectors in their national documents (ADCOMs, NAPs and NDCs)



40. A few Parties called for mainstreaming transboundary risks and adaptation into national and transnational policies, as well as for supporting capacity-building and finance, ranging from research on transnational climate risks and dependencies, joint adaptation planning, to dissemination of best practices, improved coordination mechanism and active participation in regional and global adaptation processes, and access to funding sources for transboundary adaptation.

41. Thus, while addressing transboundary climate risks and advancing transboundary adaptation offers an important avenue for strengthening adaptation action and international cooperation, only a comparatively small number of countries are reflecting such efforts in their national documents.

IV. Relevant recent reports on the state of adaptation efforts, experiences, and priorities

42. Since the publication of the synthesis report on the state of adaptation efforts, experiences and priorities, a wide range of other documents have been published, under other mandates and processes, that also shed light on collective progress towards achieving the long-term adaptation-related goals of the Paris Agreement and the adaptation-specific functions¹⁵ defined in the Agreement for the global stocktake. These include:

(a) Reports prepared under the Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation:

(i) The compilation and synthesis of indicators, approaches and metrics for reviewing overall progress in achieving the global goal on adaptation,¹⁶ published in September 2022, compiled and synthesized information and explored ideas and examples of indicators, approaches, targets and metrics relevant to the global goal on adaptation;

(ii) The annual report of the workshops¹⁷ provides an overview of the activities implemented under the work programme during its first year to achieve these

¹⁵ As outlined in article 7, para. 14 of the Paris Agreement. These include: recognizing the adaptation efforts of developing country Parties; enhancing the implementation of adaptation action taking into account the adaptation communication; reviewing the adequacy and effectiveness of adaptation and support provided for adaptation; and reviewing the overall progress made in achieving the global goal on adaptation.

¹⁶ <https://unfccc.int/documents/613843>

¹⁷ See <https://unfccc.int/documents/622098>

objectives. The summary reports included therein capture the progress made in advancing the technical work.

(b) The 2022 NDC Synthesis Report¹⁸ by the UNFCCC secretariat synthesized information from the 166 latest available NDCs communicated by 193 Parties to the Paris Agreement and recorded in the registry of NDCs as at 23 September 2022. It includes a synthesis of adaptation information communicated in NDCs, providing detailed information on areas such as impacts, risk and vulnerability; enhancing adaptation-related research for policymaking; pre-emptive adaptation, including priority sectors and areas; contingency measures; monitoring and evaluation, and understanding progress; synergies with mitigation and sustainable development.

(c) The 2022 LT-LEDS synthesis report by the UNFCCC secretariat synthesized information from the 53 latest available LT-LEDS, representing 62 Parties to the Paris Agreement, submitted as at 23 September 2022. It includes a synthesis of adaptation information contained in LT-LEDS, reflecting themes such as climate change hazards and risks; vulnerability and impacts on priority sectors; adaptation-related policies, strategies, frameworks and plans; planned or implemented sectoral adaptation actions; synergies between adaptation and mitigation; and quantified adaptation targets for monitoring and evaluating adaptation progress.

(d) The 2022 synthesis report by the Adaptation Committee in the context of the recognition of adaptation efforts of developing country Parties, focused on the efforts of developing countries in assessing and meeting the costs of adaptation, highlighting lessons learned and good practices. Synthesizing information from a wide range of documents submitted to the UNFCCC, as well as other relevant literature, the report offers key insights to facilitate the recognition of adaptation efforts of developing country Parties through the global stocktake.

(e) The 2022 note by the secretariat on progress in the process to formulate and implement NAPs¹⁹ also provides key insights related to the adaptation efforts of developing country Parties, as well as broader progress on dimensions such as reducing vulnerability to the impacts of climate change. Additionally, the document offers information related to support provided and received relevant to the process to formulate and implement NAPs.

(f) The Fifth Biennial Assessment and Overview of Climate Finance Flows,²⁰ published by the Standing Committee on Finance, provides information on global climate finance flows in the 2019-2020 biennium, including adaptation finance flows.

(g) The Report on progress towards achieving the goal of mobilizing jointly USD 100 billion per year to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation²¹ also offers a range of data and insights that can help inform discussions on support provided for adaptation.

(h) Finally, the various Party-authored reports submitted to the UNFCCC can also provide key insights relevant to the adaptation-related functions of the global stocktake from a national-level:

- i. Adaptation communications²²
- ii. Long-term low-missions development strategies²³

¹⁸ FCCC/PA/CMA/2022/4

¹⁹ FCCC/SBI/2022/19

²⁰ See

https://unfccc.int/sites/default/files/resource/J0156_UNFCCC%20BA5_2022_Report_v4%5B52%5D.pdf

²¹ See

https://unfccc.int/sites/default/files/resource/J0156_UNFCCC%20100BN%202022%20Report_Book_v3.2.pdf

²² Available at <http://unfccc.int/ACR>

²³ Available at <https://unfccc.int/process/the-paris-agreement/long-term-strategies>

- iii. National adaptation plans²⁴
- iv. National communications²⁵
- v. Nationally determined contributions²⁶

²⁴ Available at <https://napcentral.org/submitted-naps>

²⁵ Available at <https://unfccc.int/non-annex-I-NCs> for Non-Annex I Parties and at <https://unfccc.int/NC8> for Annex I Parties.

²⁶ Available at <https://unfccc.int/NDCREG>