



Adaptation Committee

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Synthesis report for the technical assessment component of the first global stocktake

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Foreword by the Co-Chairs of the Adaptation Committee

The Adaptation Committee is delighted by the opportunity to provide this synthesis report as an input to the technical assessment component of the first global stocktake. The Adaptation Committee considers the global stocktake as a major opportunity for collective learning from past adaptation efforts and for informing future approaches to address the global adaptation challenge.

The global stocktake takes place at an important juncture at which the Intergovernmental Panel on Climate Change's Working Group II has informed the world that there is no time to lose for moving from adaptation planning to the implementation of action given that the window of opportunity for sustainable development for all is closing rapidly.

During the past decade adaptation has gained unprecedented importance due to the increasing levels of global greenhouse gas emissions and concomitant rises in climate impacts. In response, numerous adaptation approaches, activities and arrangements have evolved around the world and at all levels. It is now time for harvesting the knowledge and experience gained from these approaches, activities and arrangements and to identify the triggers that can unleash the urgent further adaptation action that is required in the decisive decade ahead. It is also time for defragmenting adaptation action and support around the globe and to join forces and resources in this collective endeavour.

In its capacity as the overall advisory body on adaptation under the Convention and the Paris Agreement and through its technical work as well as the interaction with Parties and many other adaptation stakeholders the Adaptation Committee has collected, over the years, a large body of knowledge and experience in many areas of adaptation. It has made every effort to synthesize this body of knowledge and experience in this report and to allow a glance into the future on how further action and support on adaptation as well as international cooperation might be enhanced, based on the priorities of Parties.

The Adaptation Committee hopes that this report, in conjunction with the other synthesis reports prepared as inputs for the first global stocktake, provides a sound basis for assessing present status and progress towards achieving the purpose and long-term goals of the Paris Agreement and for facilitating learning among Parties that can enhance their collective ambition towards these goals.

I. Introduction

1. In decision 19/CMA.1, paragraph 24, the CMA invited the relevant constituted bodies and forums and other institutional arrangements under or serving the Paris Agreement and/or the Convention to prepare, for the technical assessment and with the assistance of the secretariat, synthesis reports on the information identified in paragraph 36 of the same decision in their areas of expertise.

2. In identifying the scope and focus of its synthesis report, the Adaptation Committee (AC) took into account the following:

(a) The overall objective of the global stocktake (GST), which is “to take stock of the implementation of the Paris Agreement to assess the collective progress towards achieving the purpose of the Agreement and its long-term goals” (Art. 14, para. 1 of the Paris Agreement), considering that the outcome of the GST will inform Parties in updating and enhancing their actions and support and in enhancing international cooperation for climate action (Art. 14, para. 3 of the Paris Agreement);

(b) The process of the GST, which consists of three components (information collection and preparation, technical assessment, consideration of outputs) and is to be undertaken every five years starting in 2023;

(c) The synthesis reports prepared by other constituted bodies and forums and other institutional arrangements as well as the secretariat in response to paragraphs 23 and 24 of decision 19/CMA.1;

(d) Guidance provided by the Chairs of the subsidiary bodies, including through guiding questions issued in response to decision 19/CMA.1, paragraph 7;¹

(e) Its areas of expertise resulting from its core mandate to promote the implementation of enhanced action on adaptation in a coherent manner under the Convention, from one of its functions to provide technical support and guidance to the Parties and from its various mandates to undertake a range of tasks that can support the implementation of the adaptation provisions of the Paris Agreement.²

3. On the basis of these considerations, the AC decided to focus its synthesis report on the following issues:

(a) Promoting coherence in adaptation under the Convention and the Paris Agreement;

(b) Experiences and priorities of countries in relation to specific technical areas of adaptation planning and implementation (addressing para. 36(c) and (f) of decision 19/CMA.1);

(c) Its work in contributing towards methodologies on reviewing the adequacy and effectiveness of adaptation and support and the overall progress towards the global goal on adaptation;

(d) Potential opportunities for enhancing action and support and international cooperation on adaptation (addressing para. 36(g) of decision 19/CMA.1).

4. The information contained in this report has been coordinated with and complements the information provided in the other adaptation-related synthesis reports, as shown in figure 1, with a view to presenting a comprehensive picture of the state of adaptation efforts, support, experience and priorities (as well as efforts related to averting, minimizing and addressing loss and damage).

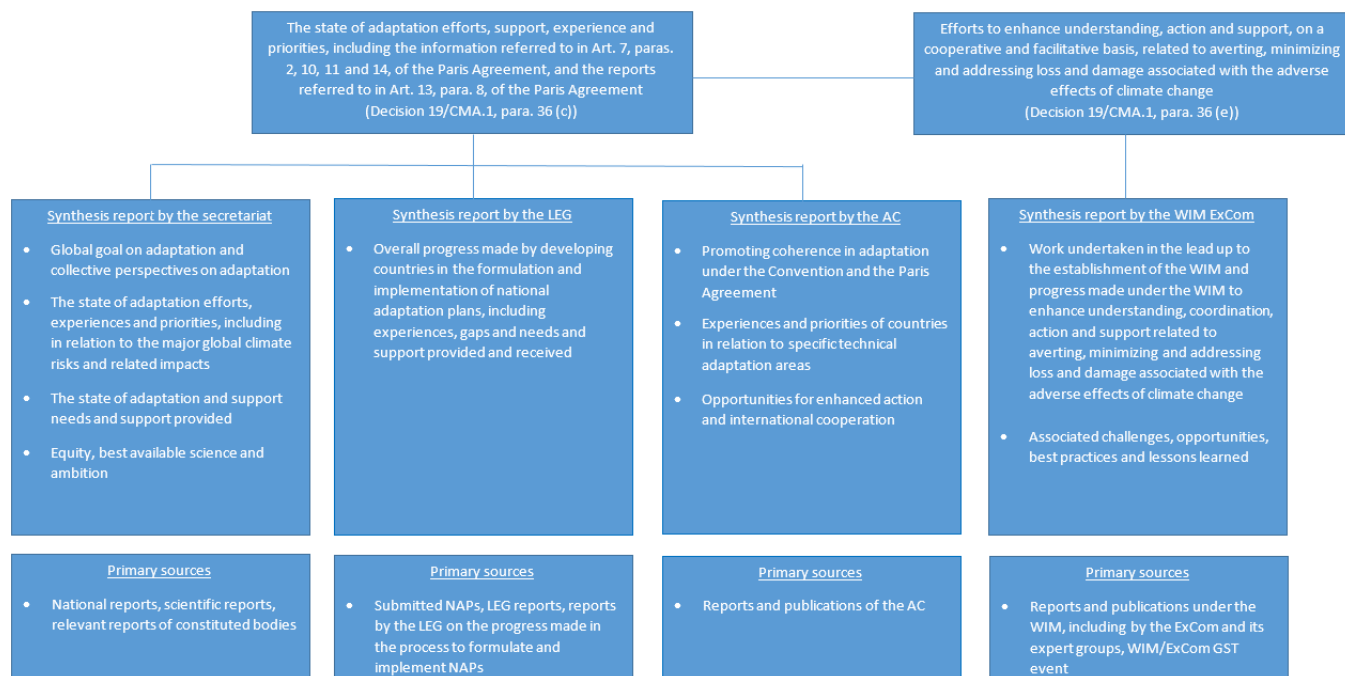
¹ Decision 19/CMA.1, para. 7 requests the subsidiary body Chairs to develop guiding questions for all components of the global stocktake, including specific thematic and cross-cutting questions. On 15 September 2021, the Chairs issued questions for the information collection and preparation component (available at https://unfccc.int/sites/default/files/resource/REV_Non-paper_on_Preparing_for_GST1_forSBs_15Sept.pdf) and, on 20 October 2021 with revisions made on 18 February 2022, for the technical assessment component (available at https://unfccc.int/sites/default/files/resource/Draft%20GST1_TA%20Guiding%20Questions.pdf).

² See decisions 1/CP.16, para. 20; 1/CP.21, paras. 41, 42 and 45; and 1/CMA.2, para. 14.

5. <More detailed references to individual sections of the other reports will be inserted here once the reports are final>.

Figure 1 [all figures to be revised and coherently designed]

Overview of adaptation-related synthesis reports for the technical assessment component of the 2023 global stocktake



6. The information in this report is based on the AC’s findings from its technical work and its interactions and collaboration with Parties and a range of other stakeholders through its meetings, workshops and forums. Since the adoption of the Paris Agreement, the main activities carried out by the AC are as follows:

(a) Activities that address specific mandates related to the implementation of the Paris Agreement, particularly those contained in decision 1/CP.21, paragraphs 41, 42 and 45 and decision 1/CMA.2, paragraph 14;

(b) The technical examination process on adaptation (TEP-A), as mandated by decision 1/CP.21 paragraphs 124–132;³

(c) Implementation of its flexible workplan.⁴

7. The sections below provide more detailed references to the respective AC activities and products that they are based on.

II. Promoting coherence in adaptation under the Convention and the Paris Agreement

8. Article 7, paragraph 7(b) of the Paris Agreement calls on the Parties to strengthen their cooperation in enhancing action on adaptation with regard to “strengthening institutional arrangements, including those under the Convention that serve the Paris Agreement, to support the synthesis of relevant information and knowledge, and the provision of technical support and guidance to Parties.”

³ See <http://tep-a.org/#:~:text=The%20technical%20examination%20process%20on%20adaptation%20%28TEP-A%29%20was,2020%20in%20the%20decision%20adopting%20the%20Paris%20Agreement.>

⁴ Available at <https://unfccc.int/process/bodies/constituted-bodies/adaptation-committee-ac/workplan>.

9. This chapter outlines the evolution of adaptation-related institutional arrangements under the Convention, the role of the AC in promoting coherence among these arrangements and how these arrangements are perceived to meet Parties' needs arising from the Paris Agreement.

A. The evolution of adaptation and its institutional arrangements under the Convention

10. The concept of adaptation has evolved significantly since the entry into force of the Convention in 1994. In parallel to the development of the general climate change paradigm – from a purely environmental problem to a development concern to ultimately a question of survival – adaptation has evolved from a mere side note in the early days of the Convention to a core element of the Paris Agreement on par with mitigation.

11. In support of this development, the Parties to the Convention have, over the years, established new processes and arrangements to support Governments as they more urgently pursue adaptation (see figure 2 below).⁵ In 2001, the LDC work programme,⁶ including national adaptation programmes of action,⁷ the Least Developed Countries Expert Group (LEG)⁸ and the Least Developed Countries Fund (LDCF),⁹ were created to support the least developed countries (LDCs) in particular. In 2005, the Nairobi work programme on impacts, vulnerability and adaptation to climate change (NWP) was set up to improve the sharing of knowledge and lessons learned.¹⁰ In 2010, the Parties agreed on the milestone Cancun Adaptation Framework, consisting of the AC,¹¹ the process to formulate and implement national adaptation plans (NAPs)¹² and the work programme on loss and damage,¹³ with a view to encouraging and supporting a more comprehensive approach to adaptation. Finally, the landmark Paris Agreement of 2015 featured a range of processes and arrangements to raise ambition on adaptation, including the global goal on adaptation, principles for adaptation action, ways to strengthen international cooperation on enhancing adaptation action, approaches to engage in adaptation planning processes and the implementation of actions, adaptation communications, expedited support for NAPs, the enhanced transparency framework and the GST.

⁵ UNFCCC. 2019. *25 Years of Adaptation under the UNFCCC*. Report by the Adaptation Committee. Available at https://unfccc.int/sites/default/files/resource/AC_25%20Years%20of%20Adaptation%20Under%20the%20UNFCCC_2019.pdf.

⁶ See <https://unfccc.int/topics/adaptation-and-resilience/workstreams/national-adaptation-plans-naps/lcd-portal/lcd-work-programme-of-2001-as-updated-in-2018>.

⁷ See <https://unfccc.int/topics/resilience/workstreams/national-adaptation-programmes-of-action/introduction>.

⁸ See <https://unfccc.int/LEG>.

⁹ See <https://www.thegef.org/what-we-do/topics/least-developed-countries-fund-lDCF>.

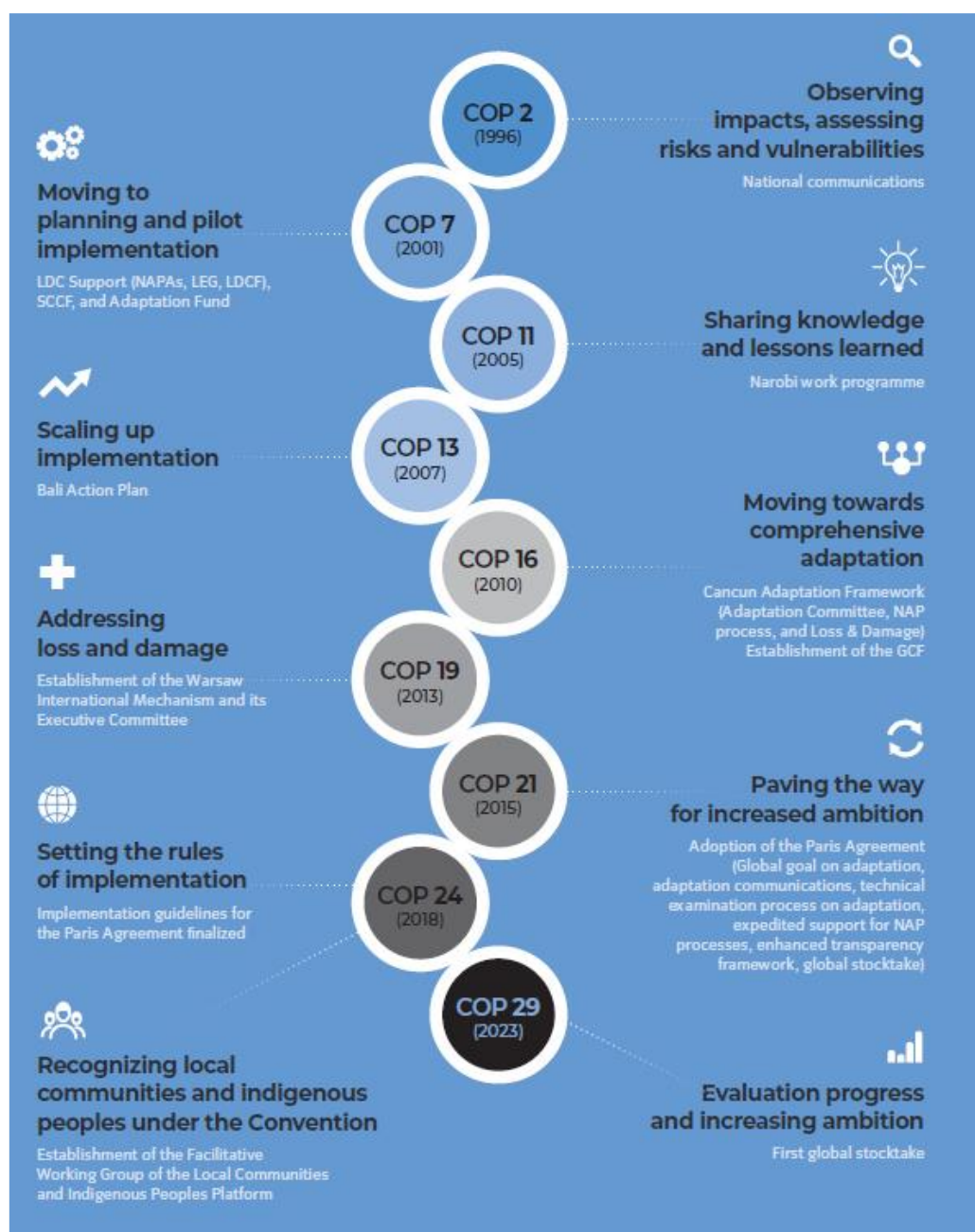
¹⁰ See <https://unfccc.int/topics/adaptation-and-resilience/workstreams/the-nairobi-work-programme-the-unfccc-knowledge-to-action-hub-for-climate-adaptation-and-resilience>.

¹¹ See <https://unfccc.int/Adaptation-Committee>.

¹² See <https://unfccc.int/topics/adaptation-and-resilience/workstreams/national-adaptation-plans>.

¹³ See <https://unfccc.int/topics/adaptation-and-resilience/workstreams/loss-and-damage/warsaw-international-mechanism>.

Figure 2
Adaptation-related milestones under the UNFCCC



Source: UNFCCC. 2019. *25 Years of Adaptation under the UNFCCC. Report by the Adaptation Committee*. Bonn: UNFCCC. Available at https://unfccc.int/sites/default/files/resource/AC_25%20Years%20of%20Adaptation%20Under%20the%20UNFCCC_2019.pdf.

12. In addition to the arrangements set up in direct support of adaptation, other arrangements under the Convention, such as those on research and systematic observation,¹⁴ the Financial Mechanism,¹⁵ the Technology Mechanism¹⁶ and the Capacity-building Frameworks,¹⁷ as well as their implementing bodies, provide essential support to the Parties to enable them to pursue their adaptation objectives (see figure 3).

¹⁴ See <https://unfccc.int/topics/science/workstreams/RSO>.

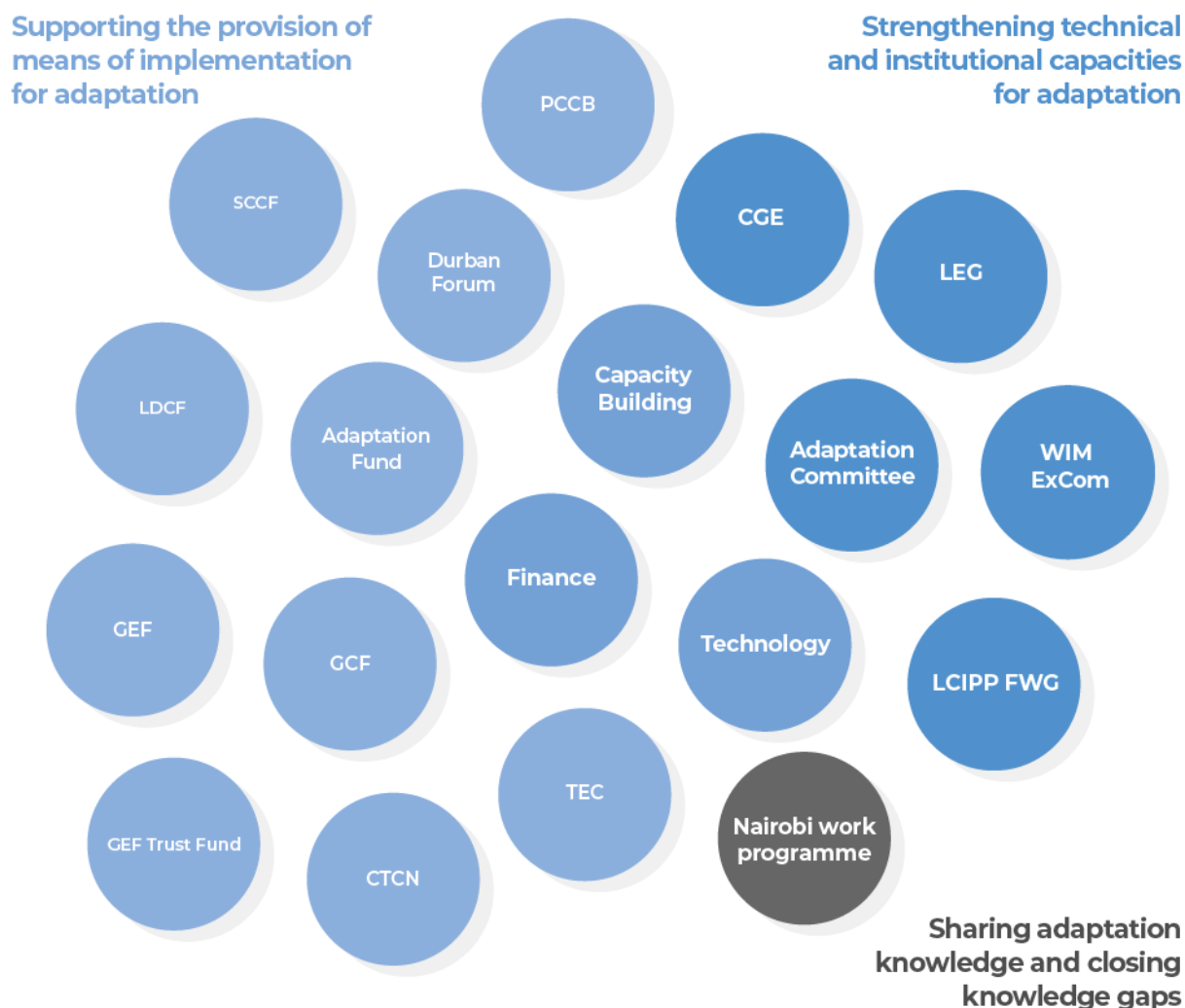
¹⁵ See <https://unfccc.int/topics/climate-finance/the-big-picture/climate-finance-in-the-negotiations/climate-finance>.

¹⁶ See <https://unfccc.int/tclear/support/technology-mechanism.html>.

¹⁷ See <https://unfccc.int/topics/capacity-building/the-big-picture/capacity-in-the-unfccc-process>.

Figure 3

The adaptation landscape under the UNFCCC: a network of institutions



Source: UNFCCC. 2019. *25 Years of Adaptation under the UNFCCC. Report by the Adaptation Committee*. Bonn: UNFCCC. Available at https://unfccc.int/sites/default/files/resource/AC_25%20Years%20of%20Adaptation%20Under%20the%20UNFCCC_2019.pdf.

13. A broad range of entities has emerged or adjusted its portfolio over the years to conduct research on adaptation and share important data, information and knowledge or to provide technical, financial and other types of adaptation support to countries and multiple other end users. This includes research institutions and centres, United Nations and other international organizations, multilateral and bilateral agencies, regional centres and networks, non-governmental organizations and private sector entities.

B. Promoting coherence under the Convention

14. In the light of the number and diversity of emerging actors and arrangements and the need for overall guidance, the AC was set up in 2010 “to promote the implementation of

enhanced action on adaptation in a coherent manner under the Convention” (decision 1/CP.16, para. 20) and to serve as the overall advisory body on adaptation to the COP.¹⁸

15. Since its establishment, the AC has carried out the following activities in line with its mandate to promote coherence:

(a) Regularly recommending ways to enhance coherence and collaboration among the constituted bodies and other institutional arrangements under the Convention on new adaptation-related mandates that emerge from each COP;

(b) Inviting relevant constituted bodies and arrangements to its regular meetings and attending other bodies’ and arrangements’ meetings;

(c) Collaborating with other constituted bodies on joint and coordinated outputs;

(d) Establishing the task force on the process to formulate and implement NAPs (NAP task force), consisting of members of the AC and nominees from the LEG, the Standing Committee on Finance (SCF), the Technology Executive Committee, the Green Climate Fund (GCF), the Global Environment Facility and the Adaptation Fund;¹⁹

(e) Working closely with the (incoming) COP Presidencies to advance critical items on the adaptation agenda in a coherent manner;

(f) Drawing on the expertise of NWP partner organizations and providing advice to the NWP and its partners;

(g) Collaborating and engaging with a broad range of stakeholders, including other constituted bodies and institutional arrangements under the Convention, national, regional and international organizations, and centres and networks through its activities to enhance synergy and avoid duplication of work;

(h) Enhancing the transparency of its work by making publicly available all relevant documentation and making its meetings accessible to observers and the general public via live webcasts, and encouraging the active engagement of observers in its deliberations;

(i) Incorporating gender as a cross-cutting consideration in all its activities;

(j) Taking into account information from local and indigenous communities in its work;

(k) Issuing general publications, such as the Adaptation Finance Bulletin and overview reports on adaptation under the Convention;

(l) Conducting TEP-A from 2016 to 2020, which brought together the Parties, adaptation policymakers and practitioners, business representatives, researchers, young people and other stakeholders to exchange views, share ideas and recount their experience of promoting enhanced action on adaptation in different broad areas.

16. In their submissions on the progress, effectiveness and performance of the AC mandated by decision 5/CP.22, the Parties shared the following views on how the AC has

¹⁸ The five functions of the Adaptation Committee include:

1. Providing technical support and guidance to the Parties;
2. Sharing of relevant information, knowledge, experience and good practices;
3. Promoting synergy and strengthening engagement with national, regional and international organizations, centres and networks;
4. Providing information and recommendations, drawing on adaptation good practices, for consideration by the COP when providing guidance on means to incentivize the implementation of adaptation actions, including finance, technology and capacity-building;
5. Considering information communicated by Parties on their monitoring and review of adaptation actions, support provided and received.

¹⁹ See <https://unfccc.int/process-and-meetings/bodies/constituted-bodies/adaptation-committee-ac/AC-NAPTF>.

enhanced and could further enhance the promotion of coherence and international cooperation.²⁰

(a) The AC has evolved into the ideal body for bridging process gaps and facilitating interaction between the international process and the wider community of climate change adaptation advocates and practitioners, specifically by publishing reports on and enabling targeted analysis of adaptation efforts and initiatives for the benefit of the Parties (AOSIS);

(b) The AC needs to become more visible outside the UNFCCC process to be recognized as a leading global voice on adaptation (LDC Group);

(c) The role of the AC in facilitating coherence in adaptation across work under the Convention needs to be enhanced in the light of an increasing focus on adaptation by all workstreams (Norway);

(d) The AC could enhance its effectiveness by establishing specialized expert groups involving more external experts on specific thematic areas (LDC Group) or by assessing in general how the capacities and technical resources of different actors can be better integrated into its work (Norway);

(e) AC meetings could feasibly be used to provide an overview of work on adaptation around the world, with the AC serving as the platform for technical issues surrounding adaptation under the Convention and the Paris Agreement. To this end, the AC should enable exchanges on best practices, challenges and opportunities associated with adaptation actions implemented in different local contexts around the world (EU).

17. In addition to the AC, the COP promotes coherence on adaptation by calling for collaboration among bodies and arrangements (e.g. the AC and the LEG or the AC and the IPCC) on specific mandates²¹. Furthermore, in the decision that adopted the Paris Agreement, the COP, for the first time, enforced such collaboration by issuing joint mandates to more than one constituted body or institutional arrangement.²²

C. Promoting coherence to meet Parties' needs arising from the Paris Agreement

18. In the light of the adaptation-related processes and arrangements established under the Paris Agreement, the AC was mandated by decision 1/CP. 21, paragraph 42(a), "to review, in 2017, the work of the adaptation-related institutional arrangements under the Convention, with a view to identifying ways to enhance the coherence of their work, as appropriate, in order to respond adequately to the needs of Parties".

19. The outcome of the review was expected to contribute to establishing a suitable institutional architecture that adequately meets the Parties' needs to fully and effectively implement the adaptation aspects of the Paris Agreement. To this end, the review sought to identify (1) possible areas of overlap or duplication; (2) needs that may not be adequately addressed by current institutional arrangements;; (3) relationships and connections between the existing arrangements and (4) the overall level of coherence and effectiveness in which adaptation was being addressed.²³ As part of the review, the AC undertook an analysis of the

²⁰ Note that the list includes views from Parties received until December 2021. Further views might be shared by Parties after the publication of this synthesis report due to the extension of the deadline for submissions until August 2022 (decision 2/CP.26, para. 6).

²¹ Note that although the IPCC is not a constituted body or institutional arrangement under the Convention, the AC has been requested by the COP to collaborate with the IPCC on various mandates, e.g. through decision 11/CMA.1, para. 17 or decision 9/CMA.1, para. 15.

²² Examples include the joint mandates issued to the AC and the LEG in the context of decision 1/CP.21, para. 41, and to the AC and the LEG, in collaboration with the SCF, in para. 45 of the same decision.

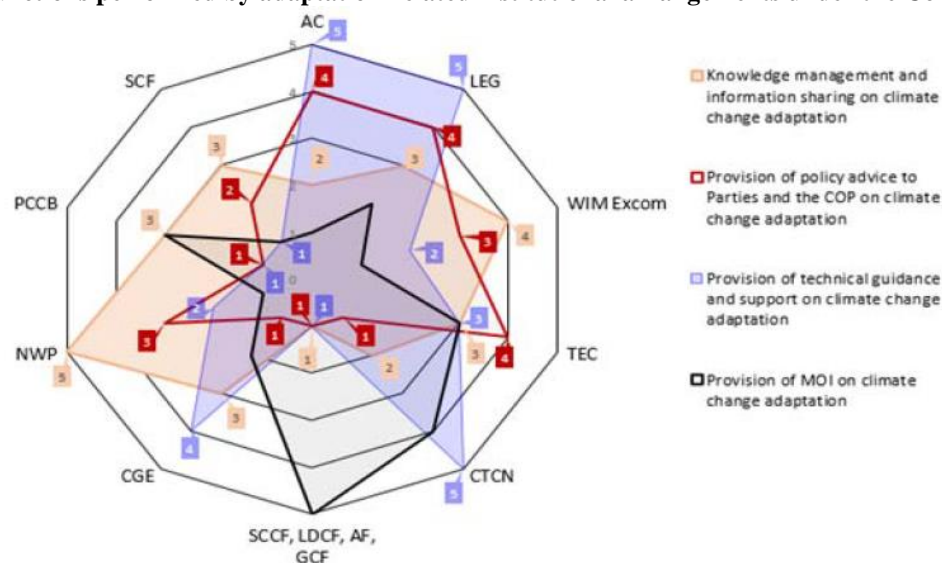
²³ AC/2016/12.

institutional landscape on adaptation under the Convention based on the core mandates of relevant arrangements and invited submissions from Parties and other stakeholders.^{24, 25}

20. Figure 4 depicts the outcome of the AC's analysis of the institutional landscape and portrays the identified overlaps in four clusters of functions performed by adaptation-related institutional arrangements. It reveals that the most significant overlaps in mandates occur in the technical guidance and support cluster, in which the AC, the LEG, the Consultative Group of Experts (CGE) and the Climate Technology Centre and Network (CTCN) all have their main functions. However, a closer look at the specific mandates of these institutional arrangements shows that their functions in this cluster are more complementary than duplicative, e.g. in term of thematic area of focus and/or target group.

Figure 4

Overview of functions performed by adaptation-related institutional arrangements under the Convention



Legend: Numbers 1-5 indicate the degree to which the respective institutional arrangement performs functions under each cluster with 1 being the lowest and 5 being the highest possible degree.

AC = Adaptation Committee; AF = Adaptation Fund; CGE = Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention; CTCN = Climate Technology Centre and Network; GCF = Green Climate Fund; LDCF = Least Developed Countries Fund; LEG = Least Developed Countries Expert Group; NWP = Nairobi work programme on impacts, vulnerability and adaptation to climate change; PCCB = Paris Committee on Capacity Building; TEC = Technology Executive Committee; SCCF = Special Climate Change Fund; SCF = Standing Committee on Finance; WIM Excom = Executive Committee of the Warsaw International Mechanism for Loss and Damage.

21. Parties and other stakeholders, in their submissions, shared different views on the kind of needs arising from the Paris Agreement that the institutional arrangements should adequately meet. Some Parties stated that individual Party needs related to enhancing adaptive capacity, strengthening resilience and reducing vulnerability so as to meet the global goal on adaptation. Other Parties mentioned individual needs related to the four elements of the process to formulate and implement NAPs or to the elements of the adaptation process more generally. The same Parties recognized the Paris Agreement as adding a fifth element to the process, namely needs associated with conducting collective assessments and efforts to enhance cooperation.

²⁴ The outcomes of the analysis are contained in annex II of document AC/2016/12.

²⁵ The submissions are available on the UNFCCC submissions portal, at <https://www4.unfccc.int/sites/submissionsstaging/Pages/Home.aspx> (enter "Adaptation Committee" in the search field and choose 2016 from the "year" drop-down list).

22. Some Parties mentioned needs in the context of the communication and implementation of adaptation communications, whereas others referred to general needs regarding finance, capacity-building, technology and access to information and knowledge to support the implementation of all aspects of the Paris Agreement.

23. In addition to Parties' individual needs, assessing collective progress in attaining the global goal on adaptation was mentioned as a collective need requiring support by the institutional arrangements.

24. In general, the submissions did not reveal any obvious gaps in the existing institutional arrangements for meeting Parties' needs. However, some Parties pointed to needs that could benefit from better or more targeted support. These included needs related to the local and regional level; establishing monitoring and evaluation frameworks; identifying appropriate adaptation technologies; identifying and promoting avenues for economic diversification; and providing financial and technological support at the same level as that provided for mitigation.

25. In terms of overlaps in the work of the adaptation-related institutional arrangements, Parties identified two main areas: (1) support for the process to formulate and implement NAPs, which is being provided by three different agenda items of the Subsidiary Body for Implementation (SBI), namely NAPs, matters relating to the LDCs, and the report of the AC; and (2) vulnerability and adaptation assessments, which are considered in the work of both the CGE and the LEG. However, these overlaps were considered necessary as most of the activities concerned are complementary.

26. Overlaps with other institutional arrangements were identified between, on the one hand, the mandates of the AC and the LEG to review, in collaboration with the SCF, the adequacy and effectiveness of adaptation and support,²⁶ and, on the other, other mandates of the SCF and the mandate of the Subsidiary Body for Scientific and Technological Advice (SBSTA) regarding modalities for accounting.²⁷

27. Parties stated that while collaboration and coherence in the work of the adaptation-related institutional arrangements (e.g. the AC, the LEG and the NWP) are generally considered to be acceptable, the roles of such arrangements are not always clearly defined and the complementarity of their functions could be improved. They also noted that the coherence of those arrangements' work with that of finance, technology, and capacity-building (knowledge) institutions could be improved, and that the arrangements should collaborate more effectively with organizations outside the UNFCCC process.

28. In terms of good practice, Parties and other stakeholders mentioned the COP's practice of issuing joint requests to constituted bodies to work on relevant adaptation mandates, as in the case of joint mandates issued to the AC and the LEG, in collaboration with the SCF, through decision 1/CP.21, paragraph 45. They also alluded to the practice of constituted bodies or arrangements of individually engaging other bodies and arrangements in their work, including in organizing events and developing joint products. In addition, they recognized the role of task forces comprising members from different bodies and arrangements, such as the NAP task force established by the AC, in promoting coherence, and considered that these task forces could benefit from the expertise of additional institutions. The annual GCF meetings with the thematic bodies under the Convention were also seen as useful means of enhancing coherence.

29. Some Parties and other stakeholders shared concrete ideas on ways of improving the coherence of the institutional arrangements on adaptation to adequately meet Parties' needs. (This topic is discussed in greater detail in chapter V.)

²⁶ Decision 1/CP.21, para. 45.

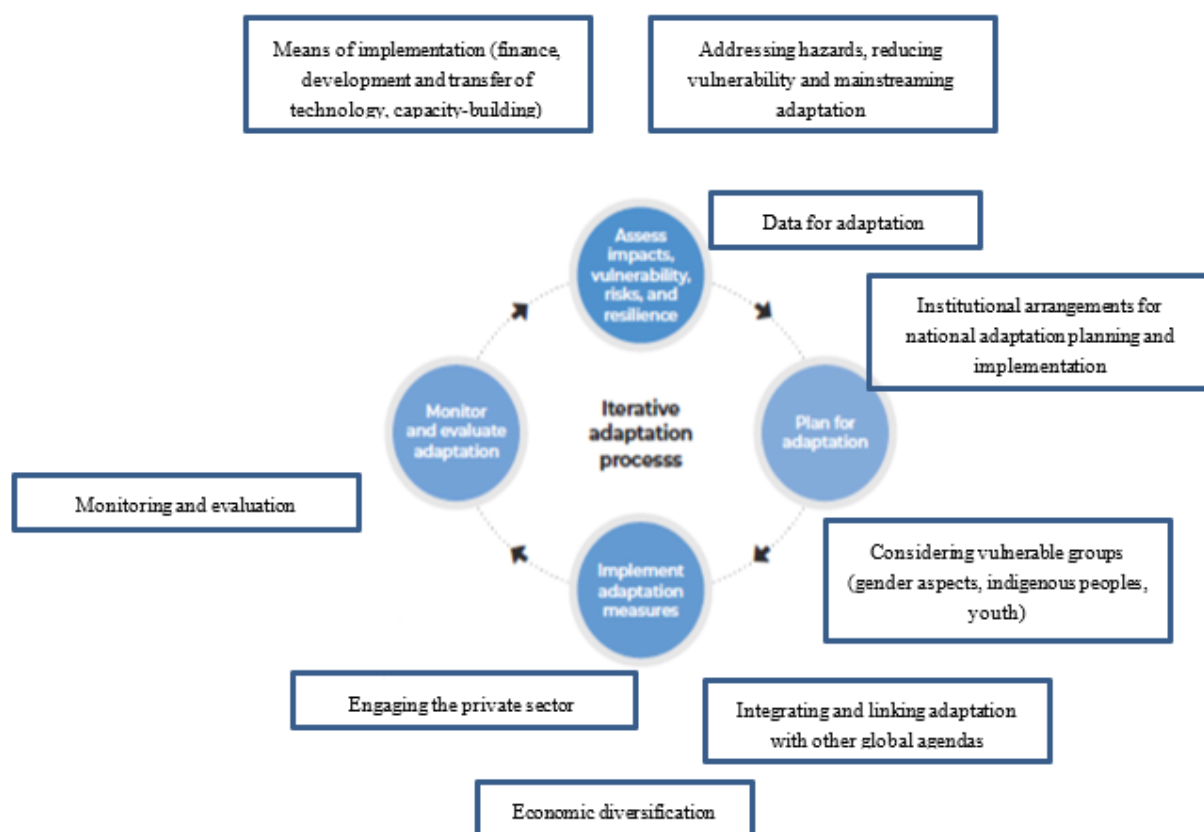
²⁷ Decision 1/CP.21, para. 57.

III. Experiences and priorities of Parties in relation to adaptation action and support

30. This chapter focuses on the experiences and priorities of Parties in relation to specific technical areas of adaptation. It complements the synthesis reports of the secretariat and the LEG, which, respectively, provide a general overview of the state of adaptation and support from a hazard/risk perspective, and more detailed information on the progress and experience of Parties in formulating and implementing NAPs. This chapter is based on findings from the AC's work related to the provision of technical support and guidance to Parties in different technical areas of the adaptation process (see figure 5).

Figure 5

Work of the Adaptation Committee on the different technical areas of the four elements of the adaptation process



31. For each of these technical areas, findings relate to lessons learned, good practices, remaining challenges and gaps, priorities for further action, and support for countries identified by the AC through desktop research and engagement with Parties and experts.

32. Section A. describes findings in relation to adaptation approaches more generally in terms of addressing hazards, reducing vulnerability and mainstreaming adaptation. Sections B.-I. describe experiences and priorities with regard to more specific adaptation areas.

A. Addressing hazards, reducing vulnerability and mainstreaming adaptation

33. Parties established the global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, as part of the Paris Agreement (Art. 7, para. 1). Furthermore, the Paris Agreement calls on Parties, “to engage in adaptation planning processes and the implementation of actions, including the development or enhancement of relevant plans, policies and/or contributions, which may include: (a) The implementation of adaptation actions, undertakings and/or efforts; (b) The

process to formulate and implement national adaptation plans; (c) The assessment of climate change impacts and vulnerability, [...]” (Art. 7, para. 9 (a), (b) and (c)).

34. Box 1 below presents lessons learned and good practices, challenges and gaps, and priorities for further action and support in relation to addressing hazards, reducing vulnerability and mainstreaming adaptation. The three activities represent key aspects of adaptation planning and implementation including in view of making progress towards the global goal on adaptation.

35. The information is based on the following AC activities and products:

(a) In 2016, holding the first two technical expert meetings (TEMs) in the context of TEP-A.²⁸ Both TEMs were organized under the overarching topic of reducing vulnerability and mainstreaming climate change adaptation, including through the process to formulate and implement NAPs. One meeting focused on experiences of implementing adaptation and reducing vulnerability while others covered effective policy frameworks and institutional arrangements for adaptation planning and implementation. Experiences in relation to the two topics shared by Parties and non-Party stakeholders in their submissions prior to the meetings and during their presentations and discussions were summarized in a technical paper.²⁹

(b) In 2019, publishing a technical paper on the various approaches to long-term adaptation planning based on a desktop study in support of an increasing number of countries developing national long-term adaptation plans and strategies in response to the provisions of the Paris Agreement.

(c) In 2020, work in response to decision 1/CP.21, paragraph 41, which requested the AC and the LEG to jointly develop modalities to recognize the adaptation efforts of developing country Parties. One component of the developed modalities was a request to the secretariat, under the guidance of the AC and the LEG and in collaboration with relevant stakeholders, to prepare synthesis reports every two years starting in 2020 on specific adaptation themes, focusing on relevant lessons learned and good practices in developing country Parties. In 2020, the first of these reports was published with a focus on ways in which developing countries are addressing hazards.³⁰ The report is based on a review of NAPs, NDCs, national communications, adaptation communications, and other relevant documents, including reports of the TEP-A, the AC, the LEG, WIM Executive Committee, and reports prepared under the NWP as well as other relevant sources.

(d) In 2020, holding the TEM on enhancing adaptation action through education and training, and public and youth participation, in the context of the TEP-A, which is summarized in a technical paper by the secretariat.³¹

²⁸ The TEP-A was mandated through decision 1/CP.21 (paras. 124–132) with a view to enhancing action on adaptation prior to 2020. Between 2016 and 2020, the TEP-A focused on annual overarching topics on which submissions were invited and meetings held involving Parties, adaptation policymakers and practitioners, business representatives, researchers, young people and other stakeholders. For each year, the outcomes of the activities were summarized in a technical paper. Further information on the TEP-A is available at <http://tep-a.org/#:~:text=The%20technical%20examination%20process%20on%20adaptation%20%28TEP-A%29%20was,2020%20in%20the%20decision%20adopting%20the%20Paris%20Agreement>.

²⁹ UNFCCC. 2016. *Opportunities and options for enhancing adaptation actions and supporting their implementation: reducing vulnerability and mainstreaming adaptation*. Technical paper by the Adaptation Committee. Available at

https://unfccc.int/files/adaptation/groups_committees/adaptation_committee/application/pdf/tp_adaptation_2016.pdf.

³⁰ UNFCCC. 2020. *How developing countries are addressing hazards, focusing on relevant lessons learned and good practices*. Synthesis report by the Adaptation Committee in the context of the recognition of adaptation efforts of developing countries. Available at https://unfccc.int/sites/default/files/resource/ac_synthesis_report_hazards.pdf.

³¹ UNFCCC. 2020. *Opportunities and options for enhancing adaptation action through education and training, and public and youth participation*. Available at http://tep-a.org/wp-content/uploads/2021/05/TEPA_2020_TP.pdf.

Box 1

Experiences and priorities in relation to addressing hazards, reducing vulnerability and mainstreaming adaptation

Lessons learned and good practices

- Institutionalizing dialogues between policymakers/decision makers and the scientific community enables more targeted assessments and more effective and informed adaptation decisions, policies and legal frameworks. This can be achieved through, for example, demand-driven climate services or boundary organizations (see also section B). The established global warming limit thereby helps to frame impacts, vulnerability and risk assessments.
- Engaging and coordinating governments and sectors (nexus approach) as well as stakeholders at multiple levels enhances adaptation efforts and catalyses transformational change. This can be achieved through for example targeted funding schemes, the co-production of multidisciplinary knowledge or special adaptation platforms. Promoting cross-cutting considerations, for example gender, social inclusion and inclusion of local and indigenous communities, is equally important. Coordinating with regional adaptation efforts and adopting a transboundary view of climate hazards can enhance mutual learning and technology transfer (see also section D).
- Integrating adaptation into social and economic development is a commonly acknowledged and well-established good practice to address climate hazards and reduce vulnerability. Targeted communication, education, learning and knowledge-sharing facilitate the success of the integration process.
- The adoption of a risk management framework as an overall adaptation approach by both the public and the private sector has proven effective in reducing uncertainty about when a climate change impact has a particular consequence. This includes the implementation of plans, actions or policies to reduce the likelihood and/or consequences of risks or to respond to consequences.
- There is growing recognition that other means than technology can play an important role in implementing adaptation, for example ecosystem or nature-based approaches and solutions that can also involve institutional or behavioural change.
- The private sector holds great potential in addressing adaptation, which needs to be better understood and harnessed, for example by establishing climate-proofed standards and regulations (see also section F).
- Effectively reducing vulnerability calls for a long-term approach to adaptation, for example by assessing impacts and vulnerabilities in the long term (over several decades); implementing measures that offer short-term development benefits while reducing vulnerability in the long-term; considering the potential of transformational adaptation; identifying the long-term financial and monitoring, evaluation and reporting systems required to assess the adequacy, effectiveness and efficiency of adaptation efforts and support; and learning from successful and unsuccessful practices. Approaches to long-term adaptation planning include ecosystem-based or community-based adaptation, the adaptation pathways method, livelihood and economic diversification and risk-based approaches.
- The process to formulate and implement NAPs provides an important opportunity for countries to compile all the good practices mentioned above into coherent and sustainable national strategies and to articulate their needs in the light of their development priorities. Integrating adaptation efforts with disaster risk reduction and other global agendas can enhance efficiency and reduce duplication of efforts, particularly where a country faces multiple hazards (see also section E).

Challenges and gaps

- An overall and fundamental challenge is the lack of consensus on what exactly constitutes adaptation, particularly vis-à-vis development. This is not only a

technical but often a politically driven challenge, with vested interests and incentives playing their part. This hampers efforts to tag and track adaptation activities and to estimate their costs and related funding needs.

- The lack of awareness among decision makers of the importance of adaptation and the lack of knowledge of how to integrate adaptation into policy-making limit the leadership and political will required to mainstream adaptation. This is aggravated by the prioritization of pressing short-term issues over longer-term adaptation efforts, particularly in conditions of uncertainty.
- With regard to adaptation assessments, difficulties persist in the provision and use of climate services, in part owing to a lack of climate data, qualified human resources and consideration of user needs (see also section B).
- Challenges also persist in the establishment and maintenance of institutional structures and coordination for adaptation in general and for acquiring financial and technological support in particular, especially when there is a change in government (see also section C).
- The lack of financial resources and capacity to support adaptation initiatives and investments is another major drawback, especially for LDCs (see also sections H.1 and H.2).
- The development and transfer of prioritized adaptation technologies to address hazards (primarily in the agricultural and water sectors) is hampered in most developing countries by economic, financial and policy barriers, in addition to a lack of human skills. The most common barrier, however, is an insufficient legal and regulatory framework (see also section H.3).
- Inconsistent use of terms by different stakeholders in the adaptation domain, for example “climate risks” and “climate hazards”, limits the comparability of risks and vulnerabilities across geographical and temporal scales.

Priorities for further action and support

- Establishing effective institutional arrangements for coordinating and facilitating access to support and ensuring continuity in adaptation efforts to achieve long-term goals.
- Tracking expenditure and investment to address climate hazards with a view to estimating and facilitating access to required financial support.

<Placeholder for a section on the assessment of adaptation needs taking into account the draft technical paper to be considered at AC 21 as well as previous work undertaken by the AC>

B. Data for adaptation

36. The Paris Agreement acknowledges that adaptation action should “...be based on and guided by the best available science...” (Art. 7, para. 5). It also calls on Parties to strengthen their cooperation on enhancing action on adaptation, including with regard to “strengthening scientific knowledge on climate, including research, systematic observation of the climate system and early warning systems, in a manner that informs climate services and supports decision-making” (Art. 7, para. 7(c)). Furthermore, it calls for Parties’ cooperation with a view to “improving the effectiveness and durability of adaptation actions” (Art. 7, para. 7(e)) and stipulates that “the adequacy and effectiveness of adaptation and support provided for adaptation” should be reviewed under the GST (Art. 7, para. 14(c)).

37. Box 2 below summarizes lessons learned and good practices, challenges and gaps, and priorities for further action and support in relation to generation of, access to and use of adaptation-relevant data and their products that provide a basis for making adaptation both science-based and effective.

38. The information is based on a peer-reviewed technical paper on data for adaptation at different spatial and temporal scales, which the AC published in 2020 based on a desktop study.³²

Box 2

Experiences and priorities in relation to data for adaptation

Lessons learned and good practices

- Efforts should be made to manage, rather than overcome, uncertainties resulting from persisting gaps in data coverage and difficulties in interpreting data. Good data coverage takes time and therefore uncertainties are a natural part of adaptation planning. Improving the provision of climate services is one way of managing such uncertainties.
- When applying projections for climate impact studies and adaptation planning, it is good practice to integrate top-down and bottom-up approaches. The top-down approach mainly uses downscaled model and scenario data to assess how findings from these might affect the system of interest. The bottom-up approach starts with the local vulnerability and decision-making context and then assesses how climate change might affect it, mainly drawing on the expertise of local decision makers.
- With regard to the provision of climate services, it is good practice to organize regional and national dialogues, which facilitate exchanges between the producers and end users of climate data and assist in the interpretation of such data, taking into account different values and perspectives.

Challenges and gaps

- Gaps in observational and historical climate data persist in some regions of the world – particularly in Africa, Asia and South America – that cannot be bridged by satellite observations or downscaling, reanalysis and gridded data techniques. These gaps are most critical in areas of elevated risk such as on small islands and in coastal areas and where local changes have global impacts, for example the melting of ice-sheet outlet glaciers and the contribution of such melting to a rise in sea levels, but also in LDCs and remote areas such as the Southern Ocean and mountainous regions.
- There is often a lack of data from global climate models downscaled to spatial scales relevant for adaptation planning at the local level or for multisectoral/multipurpose adaptation measures, such as in coastal areas or in the context of food security.
- Gaps exist in socioeconomic data more widely owing to major deficiencies in many national statistical systems. In addition, existing international arrangements for coordinating data collection and management mainly concern the collection of climate data and not socioeconomic data. This, together with an absence of collocated time series of climate observations and socioeconomic parameters, inhibits a more accurate identification of climate risks and the attribution of observed changes to either climate impacts or socioeconomic developments.
- A major challenge is posed by the interpretation of observational data and projections by end users, because of uncertainties about measurements due to issues with the selection and specificities of models and considerable uncertainties related to future climate drivers, the response of the atmosphere to such drivers and the effectiveness of adaptation and development measures in reducing vulnerability. Such challenges lead to uncertainties among end users of the data and to misinformation in the context of climate risk and impact assessments.

³² UNFCCC. 2020. *Data for adaptation at different spatial and temporal scales*. Technical paper by the Adaptation Committee. Available at [AC adaptation data full.pdf \(unfccc.int\)](https://unfccc.int/adaptation/data/full.pdf).

- In general, there is a trade-off between, on the one hand, increasing expectations of adaptation data – in terms of, for example, their timeliness, availability at various scales and the scope and stability of data records – which data providers often try to meet through automation, and, on the other hand, compliance with quality standards.

Priorities for further action and support

- Closing gaps in observational data networks.
- Enhancing open access to existing data.
- Generating higher-resolution/downscaled data products and regionalizing projections.
- Establishing international arrangements for the coordination of data collection and management of socio-economic data.
- Enhancing the provision of climate services.

C. Institutional arrangements for national adaptation planning and implementation

39. In Article 7, paragraph 5, of the Paris Agreement, Parties acknowledge “that adaptation action should follow a country-driven [...] approach, [...] with a view to integrating adaptation into relevant socioeconomic and environmental policies and actions, where appropriate”.

40. Box 3 below summarizes lessons learned and good practices, challenges and gaps, and priorities for further action and support in relation to establishing effective institutional arrangements at the national, subnational and regional level that are a prerequisite for ensuring adaptation is country-driven and integrated into national policies and actions and for providing an enabling environment for adaptation support. The information in this section focuses on experiences in relation to establishing institutional arrangements while several of the following sections mention experiences regarding the relevance of institutions in relation to many other technical areas of adaptation.

41. The information is based on a thematic report on institutional arrangements for national adaptation planning and implementation that the AC published in 2014, drawing from national communications, national adaptation programmes of actions, submissions from Parties and relevant organizations, technical papers and workshops produced and organized in response to mandates from the COP and its subsidiary bodies, and a range of case studies.³³

Box 3

Experiences and priorities in relation to institutional arrangements for adaptation planning and implementation

Lessons learned and good practices

- Involving high-level government offices and issuing a clear mandate that assigns roles and responsibilities for different players across government levels increases effective coordination and integration for adaptation planning and implementation.
- A strategic vision and the use of scenario approaches, assist in defining suitable institutional arrangements for each individual context.
- Using and/or building on existing institutional arrangements for general development planning, implementation, monitoring and evaluation can increase efficiency and effectiveness, although dedicated arrangements are needed in the case of more targeted adaptation strategies.

³³ UNFCCC. 2014. *Institutional arrangements for national adaptation planning and implementation*. Thematic report by the Adaptation Committee. Available at https://unfccc.int/files/adaptation/application/pdf/adaption_committee_publication_-_web_low.pdf.

- Involving stakeholders, ideally through an integrated strategy jointly developed and owned by all stakeholders that is conducive to coordination and exchange, ensures continuity of climate change activities.
- Involving experts to support the adaptation decision-making of political institutions, including South-South expert exchanges, increases the likelihood of well-balanced decision-making.
- Establishing multi-annual financial arrangements can facilitate the continuity of institutional arrangements and realization of long-term adaptation goals despite changing governments and political priorities.
- Involving regional institutions, particularly regional centres and networks, can enhance the effectiveness of national adaptation actions, particularly where national institutions are over-tasked and under-resourced. Where regional institutions are involved, they should assume responsibility for facilitating national priorities.
- Exchanging information and knowledge at all levels through, for example, platforms and knowledge-sharing events, enhances transparency and learning.

Challenges and gaps

- A lack of individual understanding, knowledge and skills in many institutions, combined with a scarcity of qualified national consultants, prevents the achievement of higher-level national adaptation priorities and goals.
- A reluctance to establish and manage monitoring and evaluation systems to track whether and how social, economic, institutional and political factors support or impede adaptation prevents the effective running of institutional arrangements in the long-term.
- Challenges persist in setting up effective regional institutional arrangements that would allow national governments to make use of regional partnerships and networks in prioritized areas for streamlining approaches to adaptation, development and access to funding.
- Coherence among international institutional arrangements that support national-level adaptation is not yet fully achieved.

Priorities for further action and support

- Enhancing capacity-building and long-term financial support for setting up effective institutions at all relevant levels.

D. Consideration of gender aspects and vulnerable groups (indigenous peoples and youth)

42. In Article 7, paragraph 5, of the Paris Agreement, the Parties acknowledge that “adaptation action should follow a country-driven, gender-responsive, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems, and should be based on and guided by the best available science and, as appropriate, traditional knowledge, knowledge of indigenous peoples and local knowledge systems, with a view to integrating adaptation into relevant socioeconomic and environmental policies and actions, where appropriate.”

43. Box 4 below summarizes lessons learned and good practices, challenges and gaps, and priorities for further action and support in relation to the consideration of gender aspects in adaptation planning and implementation.

44. The information is based on the following AC activities and products:

(a) In 2019, developing a concept note jointly with the Paris Committee on Capacity-building (PCCB) for an event on identifying gaps and solutions related to incorporating gender considerations into adaptation planning and implementation.³⁴ This

³⁴ Available at https://unfccc.int/sites/default/files/resource/ac16_4c_ac-pccb.pdf.

concept note includes an analysis of submissions requested and received by the AC in 2019 from Parties and observers on how to mainstream gender into the process for formulating and implementing NAPs;

(b) In 2019, publishing a toolkit for a gender-responsive process to formulate and implement NAPs jointly with the NAP Global Network;³⁵

(c) In 2020, publishing a synthesis report on how developing countries are addressing hazards, focusing on relevant lessons learned and good practices, in the context of recognizing the adaptation efforts of developing countries;³⁶

(d) In 2021, organizing a joint AC–LEG–PCCB event on strengthening gender sensitivity in adaptation under the Convention and the Paris Agreement within the framework of the PCCB capacity-building hub at COP 26.³⁷

Box 4

Experiences and priorities in relation to the consideration of gender aspects

Lessons learned and good practices

- Raising awareness of what the term ‘gender’ encompasses and of the gender dimensions of interrelated climate, environmental, economic, political and social factors can encourage gender-responsive adaptation action, for example through gender thematic groups and dialogues at different levels of society.
- Providing tangible evidence of the advantages of gender-sensitive approaches, for example by conducting cost-benefit analyses and the measuring positive change via indicators and milestones, helps to address some of the structural inequalities.
- Creating an enabling environment and leadership for gender-sensitive climate change adaptation through respective policies and strategies, including in relation to finance, technical and institutional capacities at all levels, helps to integrate gender aspects in all phases of the adaptation process. This can be achieved, for example, via the process to formulate and implement NAPs and its linkages to the Sustainable Development Goal (SDG) agenda.
- Recognizing social and cultural contexts and specificities, including the different roles, knowledge systems and capacities of men and women, enables the adoption of a targeted approach to gender-responsive adaptation in each individual adaptation context.
- Adopting an integrated approach that includes sustainable livelihoods and culture rather than focusing solely on adaptation and climate change helps to integrate gender perspectives.
- Applying gender analysis (using sex-disaggregated data) and gender budgeting/gender-responsive climate finance have proven particularly useful in integrating gender aspects into adaptation planning, implementation and monitoring and evaluation. Other approaches include (1) capacity-building for gender mainstreaming; (2) ensuring gender-responsive stakeholder engagement; (3) gender-responsive approaches to disaster risk reduction; and (4) aligning adaptation processes with national and global gender policies, such as international human rights.

Challenges and gaps

³⁵ NAP Global Network and UNFCCC. 2019. *Toolkit for a gender-responsive process to formulate and implement National Adaptation Plans (NAPs)*. Dazé, A., and Church, C. (lead authors). Winnipeg: International Institute for Sustainable Development. Available at www4.unfccc.int/sites/NAPC/Documents/Supplements/NAPGenderToolkit2019.pdf.

³⁶ UNFCCC. 2020. *How developing countries are addressing hazards, focusing on relevant lessons learned and good practices*. Synthesis report by the Adaptation Committee in the context of the recognition of adaptation efforts of developing countries. Available at www4.unfccc.int/sites/NAPC/Documents/Supplements/NAPGenderToolkit2019.pdf.

³⁷ Further information on the joint event is available at <https://unfccc.int/event/joint-ac-leg-pccb-event-strengthening-gender-sensitivity-in-adaptation-under-the-convention-and-the>.

- A persisting misconception about gender equality, namely that gender is only a women's issue, and a lack of understanding of the benefits of a gender-sensitive approach often still hinders the proper consideration of gender aspects in adaptation.
- Structural inequalities such as gender stereotypes, lack of recognition of female leaders by communities, unequal access to resources and power imbalances in decision-making are fundamental challenges.
- In some social and cultural contexts, there is still no political will to support and encourage gender-sensitive approaches and household gender dynamics persist that impede women's participation in decision-making processes.
- Additional barriers include gaps in data and information on the different ways in which climate change affects men and women and on their different adaptation needs and opportunities, as well as disparities in the capacities and knowledge of local men and women and decision makers regarding the gender-environment risk nexus.

Priorities for further action and support

- Providing technical and capacity-building support for taking a gender-responsive approach to adaptation planning and implementation, including through the use of gender-disaggregated data and gender budgeting.
- Providing gender-responsive climate finance.

45. Box 5 below summarize lessons learned and good practices, challenges and gaps, and priorities for further action and support in relation to the consideration of particularly vulnerable groups in adaptation planning and implementation. In accordance with the work undertaken by the AC to date, it includes the consideration of indigenous peoples and youth.

46. The information is based on the following AC activities and products:

(a) In 2014, holding a meeting on available tools for the use of indigenous and traditional knowledge and practices for adaptation, the needs of local and indigenous communities and the application of gender-sensitive approaches and tools for adaptation, in association with the NWP;³⁸

(b) In 2016, 2018 and 2020, holding TEMs on adaptation as part of TEP-A (see also section A above).³⁹ The overarching theme of reducing vulnerability and mainstreaming climate change adaptation, including through the process to formulate and implement NAPs of the TEMs held in 2016 included cross-cutting aspects such as the consideration of vulnerable groups and communities. The theme of the TEM held in 2018 was "opportunities and options for enhancing adaptation planning for vulnerable ecosystems, communities and groups", while the 2020 TEM focused on "education and training, public participation and youth to enhance adaptation action". All TEMs are summarized in a final publication.⁴⁰

(c) In 2019, staging an event on integrating indigenous and local knowledge into adaptation action, in collaboration with the Facilitative Working Group of the Local

³⁸ The report of the meeting is available at <https://unfccc.int/resource/docs/2014/sbsta/eng/inf11.pdf>.

³⁹ Further information on the TEP-A is available at [UNFCCC TEP-A - Technical Examination Process on Adaptation](https://unfccc.int/technical-examination-process-on-adaptation).

⁴⁰ UNFCCC. 2016. *Opportunities and options for enhancing adaptation actions and supporting their implementation: reducing vulnerability and mainstreaming adaptation*. Technical paper by the Adaptation Committee. Available at https://unfccc.int/files/adaptation/groups_committees/adaptation_committee/application/pdf/tp_adaptation_2016.pdf; UNFCCC. 2018. *Opportunities and options for enhancing adaptation planning for vulnerable ecosystems, communities and groups*. Available at http://tep-a.org/wp-content/uploads/2019/08/TP_adaptation_2018_final_lr.pdf; UNFCCC. 2020. *Opportunities and options for enhancing adaptation action through education and training, and public and youth participation*. Technical paper by the secretariat. Available at http://tep-a.org/wp-content/uploads/2021/05/TEPA_2020_TP.pdf.

Communities and Indigenous Peoples Platform and the LEG and in association with the NWP;

(d) In 2020, work conducted in the context of recognizing the adaptation efforts of developing country Parties (see section A above), resulting in a publication on how developing countries are addressing hazards.⁴¹

Box 5

Experiences and priorities in relation to the consideration of vulnerable groups (indigenous peoples and youth)

Lessons learned and good practices

General

- Vulnerable communities, groups including indigenous peoples, and ecosystems are critical agents of change and purveyors of climate adaptation solutions and should be portrayed as such and not as victims.
- Encouraging enhanced and coherent participatory processes through horizontal collaboration (linking adaptation action across sectors) and vertical collaboration (engaging local stakeholders in national planning), for example through the process to formulate and implement NAPs, provides the foundation for the effective participation of vulnerable groups.
- Participatory assessments, for example as part of community-based adaptation, have the potential to empower multiple groups simultaneously and tackle the increasing intersection of inequalities, that is, of gender and age.

Indigenous peoples

- Integrating indigenous and traditional knowledge and practice into adaptation planning and implementation provides multiple benefits, including not only adaptation benefits but also the enhancement of social cohesion and the prevention of inter-community conflicts.
- Establishing permanent two-way communication lines, that is, adaptation platforms, and engaging local, indigenous and traditional communities through transparent processes and good governance at all levels demonstrates respect and engenders trust. Drafting and enacting legislation and developing guidelines and protocols for appropriate conflict resolution enhances this trust.
- Likewise, local and indigenous communities should not only be seen as providers of knowledge and good practices, but should also benefit from capacity-building and new tools and technologies so as to integrate indigenous and modern practices. In this regard, empowering indigenous and local communities to take ownership of adaptation decisions and new practices is key to ensure their continuous participation.
- Intermediary institutions can help with recording, validating and sharing the local and indigenous knowledge and practices that have led to successful adaptation.

Youth

- Actively engaging young people throughout all stages of the adaptation process (e.g. NAPs) and at all levels provides an opportunity to harness their potential as agents of change in advancing adaptation in their communities and around the world.
- Acknowledging heterogeneity among young people facilitates their contribution in particular areas of adaptation, according to their individual expertise and interests.

⁴¹ UNFCCC. 2020. *How developing countries are addressing hazards, focusing on relevant lessons learned and good practices*. Synthesis report by the Adaptation Committee in the context of the recognition of adaptation efforts of developing countries. Available at https://unfccc.int/sites/default/files/resource/ac_synthesis_report_hazards.pdf.

Challenges and gaps

General

- Risk and vulnerability assessments are not currently conducted at the required level of detail, and often lack the data necessary to indicate which communities, groups and ecosystems are the most vulnerable. This is aggravated by the fact that vulnerable groups are not homogenous but include intersectional inequalities (e.g. elderly rural women).
- Limited resources, including finance, technical and institutional capacities at all levels, hamper the proper consideration of vulnerable groups in adaptation planning and implementation.

Indigenous peoples

- The particular context and cultural specificity of indigenous and traditional knowledge and practices have so far limited their replication and scaling-up in other contexts.
- Limited ability and willingness of national and local governments to engage with local and indigenous communities and to appreciate and respect the body of traditional knowledge and practices have added to this limitation.
- Another limiting factor is the usually short duration of adaptation projects that contrasts with the relatively long time frame required to build relations, trust and a collaborative environment with local communities and holders of indigenous and traditional knowledge and practices.
- A lack of proper compensation for the provision of indigenous knowledge and practices by indigenous communities leads to collaboration fatigue.
- Changes in local and indigenous communities, for example through the adoption of modern lifestyles, can lead to the discontinuation of intergenerational learning and the abandonment of local and traditional practices.

Youth

- Both institutional and capacity barriers continue to prevent young people from making meaningful contributions to adaptation planning and action.
- Institutional barriers relate to the failure to recognize young people as key contributors, insufficient transparency and excessive bureaucracy, which make access to information and formal recognition difficult and financially burdensome. They also relate to a lack of access to education that would enable the effective contribution of young people to adaptation.
- Capacity barriers relate to knowledge barriers (lack of technical or organizational knowledge, e.g. international policies) and financial barriers (difficulties in accessing funding for adaptation action due to the absence of targeted funds and the absence of the skills and experience required to apply for them).

Priorities for further action and support

- Fostering broad stakeholder participation and engagement in all stages of the adaptation process and at all levels through horizontal and vertical collaboration.
- Institutional and individual capacity-building and financial support to enable continuous stakeholder engagement.
- Sharing examples of good practices in the engagement of vulnerable groups.

E. Integrating and linking adaptation with other global agendas

47. The Paris Agreement provided for the establishment of the “global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate

change, with a view to contributing to sustainable development [...]” (Art. 7, para. 1). It also states that “mitigation co-benefits resulting from Parties’ adaptation actions and/or economic diversification plans can contribute to mitigation outcomes under this Article” (Art. 4, para. 7).

48. Box 6 below summarizes lessons learned and good practices, challenges and gaps, and priorities for further action and support in relation to integrating long-term adaptation planning with the SDGs and the Sendai Framework for Disaster Risk Reduction 2015–2030 as a premise for transformation towards sustainable development. It also details experiences of establishing links between adaptation and mitigation approaches as well as between both of these approaches and sustainable development. These experiences and lessons are likely to be similar when linking adaptation to other global agendas.

49. The information is based on the following activities and products of the AC:

(a) In 2017, holding a TEM on opportunities and options for integrating climate change adaptation with the SDGs and the Sendai Framework as part of TEP-A 42 (see also section A above), which is summarized in a final publication;⁴³

(b) In 2019, publishing a technical paper on the various approaches to long-term adaptation planning based on a desktop study in support of an increasing number of countries developing national long-term adaptation plans and strategies in response to the provisions of the Paris Agreement;⁴⁴

(c) In 2010, developing an information paper on the linkages between adaptation and mitigation in the context of sustainable development as part of its 2019–2021 flexible workplan, based on IPCC reports and national reports from Parties, particularly NAPs, NDCs and national communications.⁴⁵

Box 6

Experiences and priorities in relation to integrating and linking adaptation with other global agendas

Lessons learned and good practices

- Integrating adaptation with the SDGs and the Sendai Framework can be beneficial for building resilience comprehensively across societies. Improved coherence of action to implement the three post-2015 frameworks, while maintaining their autonomy, can save money and time and encourage a future-oriented approach to each of them.
- While there are currently relatively few explicit linkages between these three agendas at the global policy level, Parties are beginning to move towards recognizing connections and developing integrated approaches. Attempts have been made to integrate NAPs with either the SDGs (e.g. through the LEG iFrame)⁴⁶ or disaster risk reduction (through Joint National Action Plans e.g. in Tonga).
- The three agendas can be integrated through a focus on their common themes or concepts (“resilience” and “ecosystems”), scopes (“coordination among multiple actors operating across multiple sectors, scales and borders”) and objectives (“people-centred approaches, using the power of local actors and communities”), and concurrent monitoring and evaluation. Applying a nexus

⁴² Further information on the TEP-A is available at <http://tep-a.org/#:~:text=The%20technical%20examination%20on%20adaptation%20%28TEP-A%29%20was,2020%20in%20the%20decision%20adopting%20the%20Paris%20Agreement>.

⁴³ UNFCCC. 2017. *Opportunities and options for integrating climate change adaptation with the Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction 2015–2030*. Technical paper by the secretariat. Available at

https://unfccc.int/files/adaptation/groups_committees/adaptation_committee/application/pdf/techpaper_adaptation.pdf

⁴⁴ UNFCCC. 2019. *Various approaches to long-term adaptation planning*. Technical paper by the Adaptation Committee. Available at <https://unfccc.int/sites/default/files/resource/variousapproaches%20.pdf>.

⁴⁵ Adaptation Committee. 2020. *Information paper on linkages between mitigation and adaptation*. Available at https://unfccc.int/sites/default/files/resource/ac17_8b_ada_miti.pdf.

⁴⁶ See https://unfccc.int/files/bodies/adaptation_committee/application/pdf/20170517_leg_nap.pdf.

approach to support policies that build synergies between sectors is also beneficial.

- Collaborative work on the three agendas includes sharing data (climate and socioeconomic) and providing climate services; policy learning related to best practices and common issues; and reallocating resources from operations and maintenance to innovation and addressing complex problems. Where interministerial coordination proves challenging, coordination can also be undertaken by non-State actors such as civil society organizations or through public-private partnerships.
- In terms of linking mitigation and adaptation, the agriculture, energy and urban planning and development sectors and ecosystem or nature-based solutions have the greatest potential. So far, complementary approaches (mitigation or adaptation activities having co-benefits for the other) are most common, while synergistic approaches (both benefiting to the same extent) are rare.
- The process to formulate and implement NAPs can effectively enhance integrated approaches by supporting the establishment of the required institutional arrangements and facilitating financial and capacity-building support and collaboration and coherence in an iterative and nationally driven manner.
- Public bilateral and multilateral financial support can contribute to integrative approaches by encouraging forms of institutional transformation and human capacity that have the potential to facilitate cross-cutting benefits.
- Close interaction among focal points of the UNFCCC and those of other frameworks can enhance understanding of how to integrate different international agendas.

Challenges and gaps

- The availability and resolution of data, including climate and socioeconomic data that are relevant to the three post-2015 agendas, remain a challenge, especially in vulnerable regions, such as Africa, Asia, and Latin America.
- Establishing cross-sectoral and interministerial collaboration is difficult where agendas belong to different ministries, mainly owing to the complexities of such collaboration and the time and resources needed for coordination. Mismatches between the time horizons of projects (e.g. mitigation versus adaptation and sustainable development) make coordination more difficult still.
- In terms of seeking funding for integrated approaches, challenges arise in selecting the right number and combination of funds and in satisfying the funding criteria of adaptation funds where adaptation is mainstreamed into sustainable development agendas or linked with mitigation objectives.
- Linking adaptation with mitigation and sustainable development triple-win interventions, which would distribute benefits equally across the agendas (reducing emissions, increasing adaptive capacity and promoting sustainable development), is often difficult owing to the trade-offs made for each goal. Complementary approaches (one agenda as the core, the others having co-benefits) are most common but often imply competition for resources.
- Linking adaptation and mitigation creates complexities, in terms of the higher number of goals to be achieved and coordination (larger number of stakeholders with diverging expertise and interests, more reporting requirements).
- Too strong a focus on the desired integration can divert attention from important issues such as poverty reduction.

Priorities for further action and support

- Saving time and resources by meeting the objectives of more than one global agenda.

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- Establishing policy instruments and mechanisms and developing baseline data and monitoring systems that facilitate the simultaneous achievement of several global agenda objectives.
 - Developing international environmental and social standards that would assist in evaluating whether projects have adverse social or environmental effects despite contributing to overall sustainable development.
 - Setting up financial mechanisms and respective funding criteria that would enable the flow of global funds to support double- or triple-win outcomes.

F. Livelihood and economic diversification

50. The Paris Agreement calls on Parties to “engage in adaptation planning processes and the implementation of actions, including the development or enhancement of relevant plans, policies and/or contributions, which may include: [...] Building the resilience of socioeconomic and ecological systems, including through economic diversification and sustainable management of natural resources; [...]” (Art. 7, para. 9(e)).

51. Box 7 below summarizes lessons learned and good practices, challenges and gaps, and priorities for further action and support in relation to livelihood and economic diversification as a means of enhancing resilience.

52. The information is based on the following AC activities and products:

(a) In 2015, organizing an expert meeting on promoting livelihood and economic diversification to build resilience in the context of planning, prioritizing and implementing adaptation with participants from the AC, the LEG, governments, international governmental organizations, NGOs and the private sector, with case study inputs by NWP partner organizations. The workshop was summarized in a report.⁴⁷

(b) In 2018, developing a revised report on various approaches to adaptation, including livelihood and economic diversification.⁴⁸

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https://unfccc.int/files/adaptation/groups_committees/adaptation_committee/application/pdf/ac10_5c_report_led.pdf.

⁴⁸ https://unfccc.int/sites/default/files/resource/ac14_various%20approaches.pdf.

Box 7

Experiences and priorities in relation to livelihood and economic diversification

Lessons learned and good practices

- Climate change impacts differ by sector of economic activity, depending on the characteristics (e.g. climate sensitivity) of the sector and its geographical location (e.g. distance to markets). Vulnerable countries are often found to be over-reliant on a narrow base of economic activities, indicating that diversifying economic activities (e.g. growing the range of economic outputs and diversifying markets or income sources) is crucial to enhancing resilience at the national level.
- If considered together, livelihood diversification and economic diversification are complementary, in that livelihood diversification is usually a bottom-up approach and economic diversification a top-down approach linked to regional and national-level policy-making processes. Both approaches are tools for building resilience rather than ends in themselves.
- Both approaches are gradual processes entailing small, incremental changes that rely on the involvement and buy-in of many stakeholders and their individual capacities and skills in order to be effective and sustainable. Attention and careful planning are required to prevent these approaches from leading to maladaptation, inequities and detrimental effects on the most vulnerable.
- Diversification does not always mean creating new products. Upgrading existing products can also constitute diversification and stimulate economic growth. Enhancing knowledge of the linkages among macroeconomic and micro-level processes facilitates the discovery and implementation of new methods of diversification, for example through value chain analyses.
- National and sectoral risk screening is a useful tool for reducing uncertainties when developing approaches for economic diversification. Financial and economic reforms can be important stimulators.
- In addition to increasing resilience, livelihood diversification has the additional benefit of improving people's wellbeing and empowerment through active participation in decision-making processes.
- Factors that contribute to effective livelihood and economic diversification include strong governance and regulatory mechanisms, effective national coordination and communication mechanisms, broad partnership between the public and the private sectors, the application of a dynamic and flexible approach, broad-based dissemination of climate and market information, education and training and recognition of the complementarity of innovation and traditional knowledge. Traditional knowledge may provide valuable insights into coping capacities developed over many years.
- The NAP process, which has been designed to address adaptation in the medium- and long-term, provides a good opportunity for countries to drive economic diversification at all levels and in an inclusive and holistic manner in order to build resilience in the longer term.

Challenges and gaps

- If considered in isolation, economic diversification and livelihood diversification can have detrimental effects on each other, particularly for the most vulnerable groups of society.
- It can take a long time for economic diversification to translate into a broader range of economic outputs, owing to, for example, the need for political engagement at the highest level, extensive coordination between different levels of government, sectors, research and industries, the development of infrastructure and processes and the time needed for products to be fully market-ready (e.g. new crops that require several years to be bred and adapted to local conditions).
- Economic transitions can lead to competition for and conflict over existing resources.

Priorities for further action and support

- Developing appropriate tools, methodologies and approaches for livelihood and economic diversification and providing capacity-building for their use, for example as part of the process to formulate and implement NAPs
- Considering livelihood and economic diversification as part of inclusive growth frameworks that build on a strong partnership between the public and the private sectors.

G. Engaging the private sector

53. In the Paris Agreement Parties acknowledge that adaptation action should follow a “participatory” approach (Art. 7, para. 5). Moreover, in Art. 6, paragraph 8 the Paris Agreement states that Parties have at their disposal various approaches to assist in the implementation of their nationally determined contributions, which, among others, shall aim to “enhance public and private sector participation”. The potential of private sector participation or engagement in adaptation has long been recognized, although significant challenges remain with regard to harnessing it fully.

54. Box 8 below summarizes lessons learned and good practices, challenges and gaps, and priorities for further action and support in relation to engaging the private sector in adaptation.

55. The information is based on the following AC activities and products:

(a) In 2015, organizing a workshop on means of implementation for enhanced adaptation action (with a focus on finance), including the development of a synthesis paper as input for the workshop and a final workshop report;^{49,50}

(b) In 2018, holding a workshop on fostering engagement of the agri-food sector in resilience to climate change, in cooperation with the International Trade Centre;⁵¹

(c) In 2019, organizing the annual Adaptation Forum on challenges and opportunities in engaging the private sector in adaptation planning processes, including NAPs;⁵²

(d) In 2019, holding a TEM on opportunities and options for adaptation finance, including the private sector, as part of TEP-A⁵³ (see also section A above), which is summarized in a final publication.⁵⁴ Other TEMs also touched upon the role of the private sector in adaptation;

(e) In 2019, staging a side event on enhancing the engagement of the private sector in adaptation planning and implementation, at COP 25;⁵⁵

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https://unfccc.int/files/adaptation/cancun_adaptation_framework/adaptation_committee/application/pdf/ac_moi.pdf.

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[https://unfccc.int/files/adaptation/cancun_adaptation_framework/adaptation_committee/application/pdf/moi_wksp_2jun15_\(ver01.0\).pdf](https://unfccc.int/files/adaptation/cancun_adaptation_framework/adaptation_committee/application/pdf/moi_wksp_2jun15_(ver01.0).pdf).

⁵¹ Further information on the workshop and the final report are available at <https://unfccc.int/event/adaptation-committee-fostering-engagement-of-the-agri-food-sector-in-resilience-to-climate-change>.

⁵² Further information on the forum and a summary report are available at <https://unfccc.int/event/2019-adaptation-forum-by-the-adaptation-committee-engagement-of-the-private-sector-in-adaptation>.

⁵³ Further information on the TEP-A is available at <http://tep-a.org/#:~:text=The%20technical%20examination%20process%20on%20adaptation%20%28TEP-A%29%20was,2020%20in%20the%20decision%20adopting%20the%20Paris%20Agreement.>

⁵⁴ UNFCCC. 2019. *Opportunities and options for adaptation finance, including the private sector*. Technical paper by the secretariat. Available at http://tep-a.org/wp-content/uploads/2020/07/TEPA2019_TP_OpportunitiesandOptionsforAdaptationFinance.pdf.

⁵⁵ Further information on the side event is available at <https://unfccc.int/process-and-meetings/bodies/constituted-bodies/adaptation-committee-ac/workshops-meetings/cop-25-side-event-enhancing-the-engagement-of-the-private-sector-in-adaptation-planning-and>.

(f) In 2020, publishing a toolkit for engaging the private sector in national adaptation plans, jointly with the NAP Global Network.⁵⁶

Box 8

Experiences and priorities in relation to engaging the private sector in adaptation

Lessons learned and good practices

- As adaptation finance needs are projected to significantly increase, private sector contributions are paramount. There is also widespread acknowledgement of the need for adaptation to ensure business continuity and success.
- Recognizing the private sector as a heterogeneous group of entities – including smallholder farmers, small and medium-sized enterprises, multinational corporations, insurers and reinsurers, banks and other private financiers that act either domestically or internationally – facilitates appropriate forms of engagement. Involving private sector entities as key stakeholders in all major public sector planning activities, such as the process to formulate and implement NAPs, is vital to identify the main risks and priorities in unlocking the full potential of the private sector, with a view to implementing adaptation activities that meet NAP objectives and developing more realistic cost estimates.
- Private sector engagement in adaptation can take two forms: (1) private enterprises that provide the products and services to build climate resilience and invest in enhancing the resilience of their operations and supply chains; and (2) private financiers that provide direct financing to private or public sector actors for implementing adaptation actions.
- The most important factor for incentivizing private sector engagement in adaptation is a secure investment environment, which can be established, for example, through predictable long-term plans and regulatory frameworks. These plans and frameworks must also be effectively disseminated to the various entities of the private sector at all levels as well as to the wider public. The process to formulate and implement NAPs is a good opportunity for such dissemination.
- Further good practices for incentivizing private enterprises to invest in adaptation include:
 - Framing resilience as a long-term competitive advantage;
 - Increasing demand for adaptation products and services;
 - Providing private enterprises with guidance and assistance, for example data and capacity-building, on conducting risk assessments and mainstreaming adaptation into business (e.g. considering climate in procurement decisions) and investing in adaptation (e.g. in climate-resilient infrastructure);
 - Making use of intermediaries (e.g. business or sectoral associations) to convey targeted information and communications;
 - Identifying sectors and areas with high potential for private sector adaptation investment, for example agriculture, water, forestry and buildings, and help businesses to make their products market-ready;
 - Creating laws and regulations (e.g. obligation to invest in adaptation efforts for the ecosystems and communities on which businesses depend or to disclose climate information) and removing those that foster maladaptation (e.g. unsustainable agricultural practices);
 - Updating national technology needs assessments, technology action plans and standards and regulations to engage the private sector in the development, transfer and commercialization of adaptation technologies;
 - Providing support (e.g. in the form of public sector engagement and finance, such as through the GCF private sector facility or other forms of co-financing where private products have not yet reached

⁵⁶ <https://unfccc.int/sites/default/files/resource/engaging-private-sector-toolkit-V5.pdf>.

- sufficient maturity) while taking into account the entire value chain of a business;
 - Providing innovative financing instruments, particularly for risk sharing and coverage;
 - Setting up project preparation facilities to assist in developing generic proposals into bankable projects;
 - Including climate change or sustainability key performance indicators (e.g. on the disclosure and management of climate change risks for the business) in loan documentation so that private lenders can set interest rates on the basis of a company's performance in the area of adaptation.
- Good practices for incentivizing private financiers to finance adaptation action include de-risking investments through concessional loans, guarantees or providing early-stage funding for emerging adaptation technologies.
- Public-private partnerships can also provide insights and new and effective solutions for adaptation planning and implementation, for example for insurance products for which the public sector defines the legal and regulatory framework and sociopolitical aims and provides weather databases, risk information systems and other relevant knowledge and the insurance industry develops and implements the insurance solutions.
- Investments in adaptation should be targeted not only at areas such as logistics, transportation and infrastructure and parts of the value chain, but also at communities that are integral to the success of the business, including suppliers, customers and employees.

Challenges and gaps

- Challenges persist in conceptualizing private sector engagement in adaptation and understanding the links between private and public sector support activities, mainly because climate-resilient activities are often integrated into regular business activities.
- Although private sector investment in adaptation is estimated to be significant, the lack of methods for quantifying it has so far prevented its inclusion in global estimates of adaptation finance flows.
- The consideration of the private sector as a homogeneous group inhibits the provision of targeted incentives for private sector actors to engage in adaptation.
- Private sector actors face challenges in adequately assessing climate risks and relating them to their business activity (i.e. they lack adaptation (investment) plans).
- The main barriers to private sector investment are lack of information-sharing/communication/awareness, context (policy environment, institutional environment, market environment, value chains and human capital in a given market, lack of incentives), business models (uncertainty about the added value and return on investment of adaptation services or technologies, high up-front and maintenance costs or lack of technical capacity), and internal capacity (internal management and operational capabilities of a given company).
- Private sector actors face constraints in accessing international public adaptation finance channels, which tend to be tailored to the needs and capacities of national governments.
- The lack of capacity of local financial institutions prevents them from supporting private sector investment in adaptation.

Priorities for further action and support

- Enhancing climate-resilient business conduct to protect people and supply chains.
- Enhancing private sector engagement in climate-resilient investment and action.

- Supporting the establishment of an enabling environment, including long-term adaptation plans, respective regulatory frameworks, and the provision of appropriate forms of data, information and capacity-building, to facilitate both of the above.
- Providing international public finance to aid private sector engagement (e.g. de-risking or co-financing).

H. Monitoring and evaluation

56. The Paris Agreement calls on Parties to “engage in adaptation planning processes and the implementation of actions, including the development or enhancement of relevant plans, policies and/or contributions, which may include: [...] Monitoring and evaluation and learning from adaptation plans, policies, programmes and actions; [...]” (Art. 7, para. 9(d)).

57. Box 9 below summarizes lessons learned and good practices, challenges and gaps, and priorities for further action and support in relation to the monitoring and evaluation (M&E) of adaptation actions.

58. The information is based on the following AC activities and products:

(a) In 2014, holding a workshop on the M&E of adaptation as part of its three-year workplan (2013–2015), which included leaders in adaptation M&E at different levels (national, programme, project) and from governments, regional organizations, development banks, bilateral technical cooperation agencies, research institutions and civil society, and which is summarized in a final report;⁵⁷

(b) In 2014, staging a discussion among members of the AC and the IPCC during a special event on the margins of SB 40, which touched upon M&E;

(c) In 2016, reviewing and developing an inventory of ongoing adaptation-related M&E work prepared in association with the NWP, which is summarized in an excel spreadsheet of existing M&E systems and a summary of key results;⁵⁸

(d) In 2018, holding an expert meeting on national adaptation goals/indicators and their relationship with the SDGs and the Sendai Framework in association with the NWP,⁵⁹ which considered submissions from Parties, NWP partner organizations and other relevant organizations, including the IPCC, on indicators of adaptation and resilience at the national and/or local level or for specific sectors. The meeting was co-organized by the United Nations University Institute for the Advanced Study of Sustainability with the support of the Governments of Australia, Germany and Ireland and Japan as well as the United Nations Office for Disaster Risk Reduction. The meeting is summarized in a final report;

(e) In 2020, developing a draft information paper on methodologies for reviewing the adequacy and effectiveness of adaptation and support based on a desktop study and submissions from Parties and organizations in the context of the AC’s work in response to decision 1/CP.21, paragraph 45(b);⁶⁰

(f) In 2021, organizing the 2020/2021 virtual Adaptation Forum on M&E systems at the national and subnational level, measuring progress and impacts and communicating results with inputs from country representatives and organizations;⁶¹

(g) Inviting experts in the field of adaptation M&E to its biannual meetings to present and discuss the topic among AC members and observers.

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https://unfccc.int/files/adaptation/cancun_adaptation_framework/adaptation_committee/application/pdf/ac_me_ws_report_final.pdf.

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https://unfccc.int/files/adaptation/groups_committees/adaptation_committee/application/pdf/ac10_5b_m_and_e.pdf.

⁵⁹ See <https://unfccc.int/node/180267>.

⁶⁰ <https://unfccc.int/documents/302837>.

⁶¹ See https://unfccc.int/event/unfccc-ac-m_and_e_systems.

Box 9

Experiences and priorities in relation to the monitoring and evaluation of adaptation

Lessons learned and good practices

- M&E is a tool and not an end in itself and has multiple purposes and benefits, including awareness-raising, learning on the effectiveness of action and accountability towards sponsors and/or beneficiaries. M&E systems have been developed at different levels and for different sectors, with different objectives, including assessing political readiness or risk/vulnerability and evaluating project, policy or programme performance. Emerging M&E frameworks also provide opportunities to learn about the adequacy, effectiveness and efficiency of adaptation efforts and support.
- M&E frameworks need to be appropriate and relevant to the needs and tailored to the circumstances of the particular country or level. There is no one-size-fits-all framework or one measure of success for adaptation. Clearly formulating goals, objectives and output measures is an essential part of establishing sound M&E frameworks.
- Indicators are useful, but not the only way to monitor progress. If used, indicators should be applied to monitor not only the process, but also the outcomes and impacts. There is no common set of indicators that could be applied to any adaptation action owing to the context-specific nature of adaptation. However, according to some scientist, including from the IPCC, it would be valuable and technically possible to develop a common set of core global indicators that could be complemented by local and context-specific indicators.
- Aggregating indicators at local and higher levels is not necessarily possible or desirable. Rather than creating a framework that links assessments from different levels, different aspects of adaptive capacity should be measured at different levels. For example, national-level assessments could seek to measure how well adaptation is coordinated and integrated into national priorities.
- Formal and informal learning is a key part of M&E and should be encouraged, including by creating the necessary enabling environment, drawing on different sources of knowledge, establishing communication channels and incentives, building in and budgeting for learning and involving all relevant stakeholders, including communities and civil society. These learning processes have the potential to reveal underlying inequalities or other structural causes for vulnerability and should also take into account lessons from negative experience and be used to challenge fundamental assumptions.
- Assessing effectiveness of an adaptation intervention, for example through a theory of change approach, allows for the establishment of a plausible cause-and-effect relationship between an adaptation action and its measured results that cannot be achieved through indicators alone due to the context-specificity of adaptation interventions. Complementing indicators with qualitative information to enable comprehensive understanding and learning is therefore useful but not yet widespread.
- The planning and allocation of financial and technical resources are key for effective M&E systems. Starting with existing data for M&E is a good approach where new data are difficult to obtain.

Challenges and gaps

- A lack of widespread application of M&E approaches and methods is still apparent at all levels.
- The lack of availability, consistency, completeness, accuracy or willingness to share (high-resolution) socioeconomic and climate data impedes the effective operation of M&E systems in many countries.
- A lack of capacity (ICT skills, expertise and experience, time) and coordination (e.g. among participating ministries and institutions) to undertake proper M&E leads to unreliable findings and missed opportunities to learn.

- M&E findings are often not disclosed to the public, which impedes learning. In addition, limited support for and ownership of M&E after a project's lifetime result in a failure to assess long-term adaptation outcomes, including adaptive capacity built.
- Many existing M&E systems try to apply a one-size-fits-all solution, leading to vague tools and assessments that are sparse on detail and do not adequately consider the individual adaptation context.
- Measuring output and outcome variables for adaptation interventions (causes and effects) remains a challenge, particularly in view of strong interlinkages between adaptation and development, the time lag between an intervention and its outcomes, complex and dynamic settings in which adaptation occurs, and different world views and risk preferences that lead to different evaluations of effectiveness.
- Lack of comprehensiveness in evaluating adaptation results in a failure to account for the negative side effects that an intervention might have in another location or time (maladaptation).

Priorities for further action and support

- Enhancing collective efforts to apply and learn from M&E systems at different levels.
- Allocating financial, technological and capacity-building support from national and international sources for the establishment and maintenance of M&E systems at different levels in the long-term.
- Providing relevant data and adopting innovative approaches for the integration of adaptation-related M&E systems with those of other global agendas to avoid duplication of work and save resources.

I. Means of implementation

59. The Paris Agreement calls for continuous and enhanced international support to be provided to developing country Parties for the implementation of paragraphs 7, 9, 10, and 11 of Article 7, in accordance with the provisions of Articles 9 (finance), 10 (technology development and transfer) and 11 (capacity-building) (Art. 7, para. 12 of the Paris Agreement).

60. Boxes 10, 11 and 12 summarize lessons learned and good practices, challenges and gaps, and priorities for further action and support in relation to the provision of finance, technology development and transfer as well as capacity-building for adaptation.

61. The information on finance for adaptation is based on the following AC activities and products:

(a) In 2015, holding a workshop on means of implementation for enhanced adaptation action (with a focus on finance), including the development of a synthesis paper as input for the workshop and a final workshop report;⁶²

(b) In 2016, developing an information paper on methodologies for taking the necessary steps to facilitate the mobilization of support for adaptation in developing countries in the context of limiting the global average temperature increase referred to in Article 2 of the Agreement,⁶³ based on a desk review in the context of the mandate for the AC and the LEG, in collaboration with the SCF and other relevant institutions, to develop such methodologies, as issued in decision 1/CP.21, paragraph 45(a);

⁶² See

https://unfccc.int/files/adaptation/cancun_adaptation_framework/adaptation_committee/application/pdf/ac_moi.pdf and [https://unfccc.int/files/adaptation/cancun_adaptation_framework/adaptation_committee/application/pdf/moi_wksp_2j_un15_\(ver01.0\).pdf](https://unfccc.int/files/adaptation/cancun_adaptation_framework/adaptation_committee/application/pdf/moi_wksp_2j_un15_(ver01.0).pdf).

⁶³ See annex II to the information paper, available at

https://unfccc.int/files/adaptation/groups_committees/adaptation_committee/application/pdf/ac-leg2_mandates.pdf.

(c) In 2017, developing an information paper on experiences of countries in accessing the readiness programme of the GCF to finance adaptation activities on the basis of surveys and interviews with countries and relevant delivery partners;⁶⁴

(d) In 2018, holding a workshop on accessing the readiness and preparatory support programme of the GCF for adaptation,⁶⁵ with representatives from the AC, the LEG, the GCF, countries and accredited entities, summarized in a final report;⁶⁶

(e) In 2019, developing a revised information note on capacity gaps in accessing adaptation funding, based on submissions from Parties on their experience, successes and remaining challenges;⁶⁷

(f) In 2019, holding a TEM on opportunities and options for adaptation finance, including the private sector, as part of TEP-A⁶⁸ (see also section A above), which is summarized in a final publication.⁶⁹

Box 10

Experiences and priorities in relation to finance for adaptation

Lessons learned and good practices

- A better understanding of and a more comprehensive overview of global adaptation finance, including of its effectiveness, is only possible if various actors along the tracking path provide regular, consistent and accurate information on their provision and use of adaptation finance. These actors include the public and private sectors providing the funds; governments, financial institutions, United Nations and other organizations and funds acting as the intermediaries/channels; and governments, NGOs and other implementing agencies acting as the recipients and representatives of the beneficiaries.
- Adequate, predictable and long-term financing is needed to bring about transformative change conducive to developing climate resilience. Scaled-up adaptation finance will need to draw from a variety of sources, including the public sector, especially for the most vulnerable countries (e.g. LDCs), and the private sector, for which the right incentives need to be provided. It is important that public finance does not crowd out private finance wherever private investment and financing is possible without interference from the public sector.
- Mobilizing additional adaptation finance requires policies and measures that “push” the provision of support towards adaptation action, and policies and measures that “pull” support provided by developed to developing countries.

The “push” measures and policies include:

- Establishing dedicated adaptation funds, under and outside the Convention;
- Launching regional initiatives such as insurance funds;
- Rolling out dedicated bilateral and South-South support programmes;
- Establishing the Technology Mechanism to stimulate technology cooperation and finance;
- Implementing specific capacity-building programmes as part of adaptation funds or processes that support countries in establishing enabling environments.

⁶⁴ Available at https://unfccc.int/sites/default/files/ac12_8ai_readiness.pdf.

⁶⁵ See <https://unfccc.int/event/workshop-on-accessing-the-readiness-and-preparatory-support-programme-of-the-green-climate-fund-for>.

⁶⁶ Available at <https://unfccc.int/sites/default/files/resource/SB48.AC.1.pdf>.

⁶⁷ Available at https://unfccc.int/sites/default/files/resource/ac20_7a_capacity_gaps.pdf.

⁶⁸ Further information on the TEP-A is available at <http://tep-a.org/#:~:text=The%20technical%20examination%20process%20on%20adaptation%20%28TEP-A%29%20was,2020%20in%20the%20decision%20adopting%20the%20Paris%20Agreement>.

⁶⁹ UNFCCC. 2019. *Opportunities and options for adaptation finance, including the private sector*. Technical paper by the secretariat. Available at http://tep-a.org/wp-content/uploads/2020/07/TEPA2019_TP_OpportunitiesandOptionsforAdaptationFinance.pdf.

The “pull” measures and policies (= enabling environments) include:

- Providing the national data and information required to conduct and support effective adaptation activities;
 - Developing coherent national adaptation policies, strategies and plans (e.g. NAPs), based on thorough needs assessments (for finance, technology (e.g. through technology needs assessments) and capacity-building), and financial, technological and capacity-building strategies/plans (e.g. technology road maps) – ideally coordinated with other national policies and plans to demonstrate the effective use of resources and with highest political support;
 - Establishing predictable legal and regulatory frameworks (e.g. incorporating adaptation considerations into building standards and codes, zoning rules, critical infrastructure development);
 - Developing sound programmes and projects to implement the strategies and plans mentioned above, with more comprehensive and longer-term programmes attracting larger scales of adaptation support. Focusing on outcomes in any project design can assist in ensuring that finance delivers adaptation results that can be tracked and reported. The design of programmes and projects with co-benefits in other areas, such as mitigation, or other global agendas like the SDGs can increase the likelihood of mobilizing support;
 - Entrusting appropriate institutions with coordinating adaptation activities and developing institutional and human (technical and administrative) capacity across different levels of governance, including for meeting high social and environmental standards and safeguards;
 - Demonstrating the effectiveness of the provided support through thorough monitoring and reporting as part of overall transparency;
 - Establishing national adaptation funds or budget allocations for adaptation activities and mainstreaming adaptation considerations into other sectoral work and budgets.
-
- Establishing enabling environments in developing countries is generally regarded as the key to mobilizing adaptation support from both the public and the private sectors. Developing countries require adequate support in this regard, the provision of which can be considered as a good practice.
 - Transparency of both the provision and the effective deployment of adaptation support enhances mutual trust of donor and recipient countries, thus contributing to further resource mobilization.
 - Public budgets have so far been a reliable, transparent and growing source of international climate (including adaptation) finance, despite financial and political pressures, and public institutions such as bilateral agencies, bilateral development financial institutions and multilateral development banks play an indispensable role in channelling and mobilizing financial resources, since they are particularly well placed to leverage capital from markets. Still, there is a need to diversify methodologies to mobilize increasingly vital adaptation finance as public budgets might face increasing fiscal and other constraints.
 - Aspects that contribute to adaptation finance effectiveness include its cost-effectiveness (achieving climate impacts at the lowest reasonable cost), its predictability (contributing to effective long-term planning by public and private actors) and its potential for transformation (ensuring demonstration effects).
 - Directing more finance to local-level actors such as civil society organizations helps to increase the transparency of adaptation finance, build trust among local beneficiaries and leverage limited finances to meet the needs of the most vulnerable.
 - Harnessing the capacity-building benefits of multilateral climate funds is a good way for countries to enhance their climate finance readiness. It has been shown that the capacity which accredited entities have gained by going through the accreditation process and implementing initial projects will greatly

assist them in implementing effective adaptation projects and programmes in the future. This includes long-term institutional capacity in terms of unlocking domestic and international resources, increased ownership through the involvement of national stakeholders and the alignment of adaptation with development priorities and increased transparency throughout the implementation of the project or programme.

- Given these benefits, capacity-building initiatives for accessing international climate funds should be opened up to all institutions and entities involved in channelling or distributing financial resources. This would enhance the uptake and effectiveness of adaptation finance flows.
- Facilitating enhanced access to finance through fast-tracking and direct access and through capacity-building that is coordinated among donors, international funds and national stakeholders enables countries to learn how to access and manage adaptation finance in the long term.
- Enhancing coordination among different providers of financial support is required to ensure that adaptation finance is efficient, coherent and complementary.

Challenges and gaps

- The availability of funding for adaptation still falls far short of what is needed.
- A lack of consistent and complete reporting on adaptation finance, by both the providers and the recipients, impedes its accurate tracking and thus hampers efforts to establish a comprehensive overview of global adaptation finance flows. The two main reasons for this are the lack of a consistent definition of adaptation and the often supplementary nature of adaptation finance as part of larger (development) investments.
- Identifying how much “new and additional” adaptation finance needs to be mobilized vis-à-vis the temperature goals is difficult owing to the challenge of determining adaptation finance needs as separate from other development finance requirements.
- Factors that constrain the mobilization of additional adaptation finance include competing national priorities in both developed and developing countries, in cases of overall fiscal and budgetary limitations; lack of enabling environments in developing countries; high transaction costs for small-scale projects; and difficulties in meeting co-financing requirements.
- Challenges experienced by countries in accessing adaptation funds relate to the length and complexity of the application processes and frequent changes in templates and funding criteria. Countries also encounter difficulties in providing evidence for adaptation additionality, particularly where adaptation is mainstreamed into development planning. In addition, countries must make trade-offs between meeting fund-level criteria and protecting national-level priorities when drafting funding proposals.
- In general, gaps in capacity for accessing funding relate to skill sets, human resources and institutions and are often exacerbated by a lack of access to data and information and other political, financial, economic or governance factors. These gaps lead to:
 - A lack of awareness of climate change impacts and the importance of an enabling environment to attract adaptation finance;
 - Insufficient enabling environments for adaptation finance;
 - An inability to make the case for adaptation in terms of determining the required funding level, proving a return on investment and preparing fundable projects and proposals;
 - Challenges in navigating different funding opportunities, mechanisms and instruments; and
 - A lack of appropriate skills to directly access funds and manage them in line with existing policies and regulations.
- The listed challenges are similar across countries, sectors, the different levels of government and the types of fund being accessed.

Priorities for further action and support

- Identifying ways/methods of enabling and encouraging more rigorous tracking of adaptation funding flows – in terms of their origin, the intermediaries, the ultimate recipients and beneficiaries, the form in which they are disbursed and what they are used for – in order to enhance the understanding and global estimation of adaptation finance, assist countries in identifying finance needs and learn about the effectiveness of different finance instruments.
- Enhancing availability of and access to adaptation finance, for example through long-term capacity-building and a coordinated effort among donors, international funds and national stakeholders (“push factors”).
- Enhancing enabling environments to attract and effectively manage adaptation finance (“pull factors”).
- Ensuring access to adaptation finance, including where adaptation is mainstreamed into development.
- Creating a shared, global understanding of the costing of different adaptation needs and plans across geographic and temporal scales.
- Providing resources for Parties to evolve from addressing short-term to medium-term, long-term and systemic adaptation measures.
- Providing specific information on sources, amounts and suitability of funding available for both the formulation and implementation stages of NAPs.
- Assessing the adequacy and effectiveness of adaptation finance.

62. The information on technology development and transfer for adaptation is based on the following AC activities and products:

(a) In 2014, contributing to the workshop on technologies for adaptation organized by the Technology Executive Committee, which was informed by a background paper and is summarized in a workshop report;⁷⁰

(b) In 2016, holding two TEMs under the overarching topic opportunities and options for enhancing adaptation actions and supporting their implementation: reducing vulnerability and mainstreaming adaptation, as part of TEP-A⁷¹ (see also section A above), which is summarized in a final publication;⁷²

(c) In 2016, developing an information paper on methodologies for taking the necessary steps to facilitate the mobilization of support for adaptation in developing countries in the context of limiting the global average temperature increase referred to in Article 2 of the Agreement,⁷³ based on a desk review in the context of the mandate for the AC and the LEG, in collaboration with the SCF and other relevant institutions, to develop such methodologies, as issued in decision 1/CP.21, paragraph 45(a). The information paper contains a section on methodologies to facilitate the mobilization of technological support;

(d) In 2019, holding a TEM on opportunities and options for adaptation finance, including the private sector, as part of TEP-A⁷⁴ (see also paragraph 62 above), which is

⁷⁰ See

https://unfccc.int/ttclear/misc/StaticFiles/gnwoerk_static/events_workshops_adaptationtechs/f1b531ab99084107950d65c2c2de1d6d/d02425f42d614aa99c40fe39758b3ded.pdf and https://unfccc.int/ttclear/misc/StaticFiles/gnwoerk_static/events_workshops_adaptationtechs/f1b531ab99084107950d65c2c2de1d6d/b9555759eeeb4b9d972f8e01c000323c.pdf

⁷¹ Further information on the TEP-A is available at <http://tep->

[a.org/#:~:text=The%20technical%20examination%20process%20on%20adaptation%20%28TEP-A%29%20was,2020%20in%20the%20decision%20adopting%20the%20Paris%20Agreement.](http://tep-a.org/#:~:text=The%20technical%20examination%20process%20on%20adaptation%20%28TEP-A%29%20was,2020%20in%20the%20decision%20adopting%20the%20Paris%20Agreement.)

⁷² UNFCCC. 2016. *Opportunities and options for enhancing adaptation actions and supporting their implementation: reducing vulnerability and mainstreaming adaptation*. Technical paper by the Adaptation Committee. Available at

https://unfccc.int/files/adaptation/groups_committees/adaptation_committee/application/pdf/tp_adaptation_2016.pdf.

⁷³ See annex II to the information paper, available at

https://unfccc.int/files/adaptation/groups_committees/adaptation_committee/application/pdf/ac-leg2_mandates.pdf.

⁷⁴ Further information on the TEP-A is available at <http://tep->

[a.org/#:~:text=The%20technical%20examination%20process%20on%20adaptation%20%28TEP-A%29%20was,2020%20in%20the%20decision%20adopting%20the%20Paris%20Agreement.](http://tep-a.org/#:~:text=The%20technical%20examination%20process%20on%20adaptation%20%28TEP-A%29%20was,2020%20in%20the%20decision%20adopting%20the%20Paris%20Agreement.)

summarized in a final publication that includes a section on commercializing adaptation technologies;⁷⁵

(e) In 2021–2022, developing a draft technical paper on priorities and needs: technologies for adaptation in agriculture, water resources and coastal zones, including experiences in stakeholder engagement and regulatory issues pertaining to the development, transfer and uptake of technologies in those sectors.⁷⁶

Box 11

Experiences and priorities in relation to the development and transfer of technology for adaptation

Lessons learned and good practices

- Ensuring that technology needs assessments and technology action plans are complete and up to date is an important precondition for the development and transfer and commercialization of technologies.
- Other important steps include:
 - Developing conducive policy and legal and regulatory frameworks;
 - Preparatory work in the form of market and sectoral assessments and the application of comprehensive knowledge management by key stakeholders involved;
 - Awareness-raising and new financing mechanisms to incentivize private sector investment, for example through partnerships with industry associations;
 - Encouraging the use of new technologies by end users through contextually sensitive marketing approaches.
- Considering the significant synergies, trade-offs and co-benefits with mitigation can help in commercializing adaptation technologies and making them attractive to private investors.
- Encouraging bottom-up and participatory approaches to enable the replication of local innovations, and to ensure sustainability and suitability to local contexts.

Challenges and gaps

- Barriers that often impede the transitioning of adaptation technologies from the development to the commercialization phase include:
 - A lack of awareness and inadequate information on the potential of technological solutions to address climate change risks;
 - A poor understanding of adaptation markets and a poor market infrastructure;
 - Weak policy and legal frameworks;
 - Lack of or inadequate access to financial resources and few suitable financial mechanisms that are able to effectively blend public and private finance, reduce investment risk and shorten the time needed for a return on investment;
 - Traditions and habits that hinder openness for the use of new technologies;
 - Weak connectivity between actors favouring the new technology;
 - Lack of institutional capacity and skilled personnel for the installation and operation of climate technologies;
 - Technical system constraints.
- Lack of attention to individual contexts for adaptation technology solutions, alongside poor planning, can lead to an overemphasis of short-term outcomes and a failure to account for adaptation limits, resulting in maladaptation.

⁷⁵ UNFCCC. 2019. *Opportunities and options for adaptation finance, including the private sector*. Technical paper by the secretariat. Available at http://tep-a.org/wp-content/uploads/2020/07/TEPA2019_TP_OpportunitiesandOptionsforAdaptationFinance.pdf.

⁷⁶ Available at https://unfccc.int/sites/default/files/resource/ac20_7b_technologies.pdf.

Priorities for further action and support

- Assessing the adequacy and effectiveness of adaptation technologies.
- Establishing and providing support for an enabling environment that enhances technology transfer and uptake.

63. The information on capacity-building for adaptation is based on the following AC activities and products:

(a) In 2016, holding two TEMs under the overarching topic opportunities and options for enhancing adaptation actions and supporting their implementation: reducing vulnerability and mainstreaming adaptation, as part of TEP-A⁷⁷ (see also section A above), which is summarized a final publication;⁷⁸

(b) In 2019, developing a revised information note on capacity gaps in accessing adaptation funding, based on submissions from Parties on their experience, successes and remaining challenges.⁷⁹

Box 12**Experiences and priorities in relation to capacity-building for adaptation****Lessons learned and good practices**

- Capacity-building of both individuals and institutions is an important enabler of many facets of adaptation planning and implementation, including the provision of other means of implementation (finance and technology development and transfer), of which it is therefore often part. However, instead of being tailored to enable a certain activity in the short term, capacity-building efforts must be designed to allow country-owned adaptation planning and implementation in the long term. This requires linking them to long-term adaptation and development planning strategies so that knowledge and skills can be adequately developed.
- Creating a coordinated strategy among the different levels of government at international, national, subnational and local level, and across different sectors, in line with short- and long-term political and economic priorities, can effectively develop a critical mass of capacity of all relevant stakeholders. An effective flow of communication can thereby help to capture good practices and lessons.
- Promoting regional and South-South capacity-building is a good practice for supporting information exchange, mutual learning and the establishment of regional networks to facilitate cooperation, coordination and mutual support.
- Engaging academia and research organizations is a good practice for strengthening scientific knowledge in the policy formulation process.

Challenges and gaps

- Capacity-building interventions are often based on one-off, project-based, foreign consultancy-led workshops, which do not contribute to sustainable capacity-building and do not result in a capacity-building system in the recipient countries.
- The predominant focus of capacity-building activities on generating a specific output, for example facilitating access to a particular climate fund, inhibits a broader view of the capacities required in the respective country, to plan and manage adaptation finance more broadly.

⁷⁷ Further information on the TEP-A is available at <http://tep-a.org/#:~:text=The%20technical%20examination%20process%20on%20adaptation%20%28TEP-A%29%20was,2020%20in%20the%20decision%20adopting%20the%20Paris%20Agreement.>

⁷⁸ Available at

https://unfccc.int/files/adaptation/groups_committees/adaptation_committee/application/pdf/tp_adaptation_2016.pdf.

⁷⁹ Available at https://unfccc.int/sites/default/files/resource/ac20_7a_capacity_gaps.pdf.

Priorities for further action and support

- Enhancing both individual and institutional capacity-building for all aspects of adaptation planning and implementation.
- Fostering sustainable, long-term capacities.
- Facilitating South-South exchange and learning.

IV. Reviewing the adequacy and effectiveness of adaptation and support and the overall progress towards the global goal on adaptation

64. As part of the overall objective of the GST, which is “to take stock of the implementation of the Paris Agreement to assess the collective progress towards achieving the purpose of the Agreement and its long-term goals” (Art. 14, para. 1 of the Paris Agreement), Article 7, paragraph 14(c) and (d) of the Paris Agreement, lays out that the GST shall “review the adequacy and effectiveness of adaptation and support provided for adaptation” and “review the overall progress made in achieving the global goal on adaptation”.

65. In decision 1/CP.21, paragraph 45(b), the COP requested the AC and the LEG, in collaboration with the SCF and other relevant institutions, to develop methodologies and make recommendations for reviewing the adequacy and effectiveness of adaptation and support. In decision 1/CMA.2, paragraph 14, the CMA requested the AC to consider approaches to reviewing the overall progress made in achieving the global goal on adaptation.

66. The AC, where relevant in collaboration with other constituted bodies, has undertaken considerable technical work in response to both mandates. It has collected and reviewed existing approaches and methodologies relevant to undertaking both types of review and invited submissions to hear Parties’ and other stakeholders’ views on possible approaches. It has also shared and discussed its preliminary findings with Parties and other stakeholders through webinars and side events and synthesized them into a technical and a draft information paper.⁸⁰ In addition, it has made recommendations to the COP.

67. For both types of review, the AC found that a considerable number of possible approaches and methods exists that could assist in undertaking the reviews, but that conducting the reviews at the collective level still posed significant conceptual, technical and political challenges and that no clear direction of how to undertake the respective assessments could yet be identified.

68. Some of the more detailed findings of the AC’s technical work in relation to both types of review include the following:

(a) With regard to methodologies to review the adequacy and effectiveness of adaptation and support provided for adaptation, the AC and LEG, in collaboration with the SCF, found that:

(i) There are clear limits on how, and to what effect, the adequacy and effectiveness of adaptation and support can be reviewed and there is no one-size-fits-all approach or methodology to conduct such a review, primarily owing to the context-specificity of adaptation, the long timescales of possible outcomes and the close interlinkages between adaptation and development;

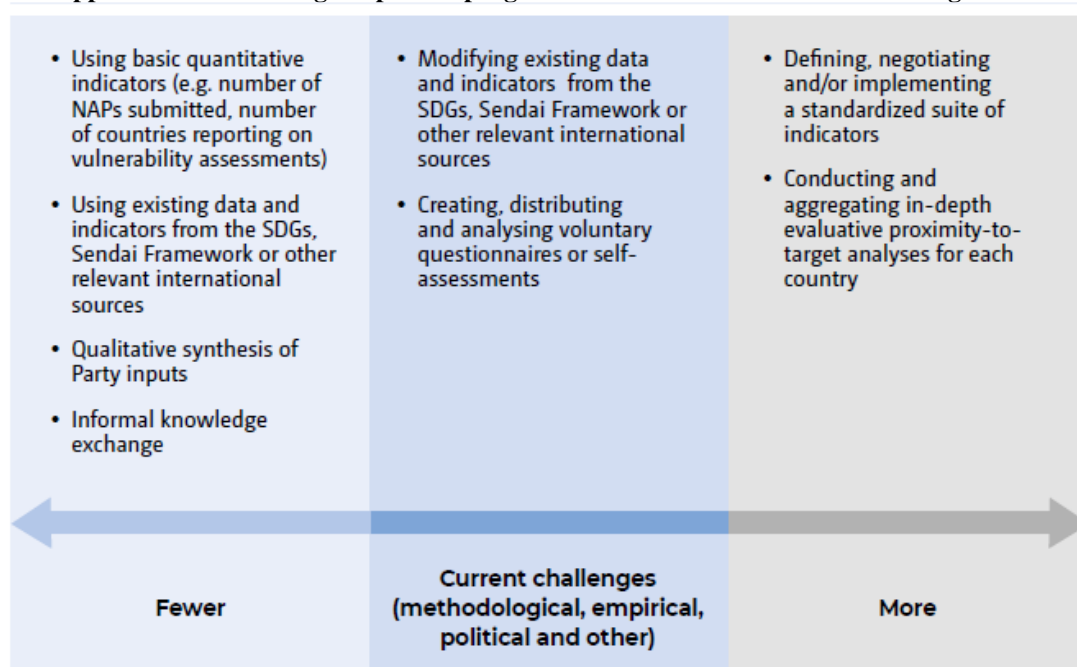
(ii) It is not possible to add up information on the adequacy and effectiveness of adaptation action around the globe to a single figure or to represent it through a globally applicable metric in a scientifically sound manner, as is being done in the case of mitigation, in particular because a comprehensive understanding of adequacy and effectiveness requires qualitative data;

⁸⁰ The technical paper on approaches to review the overall progress made in achieving the global goal on adaptation is available at https://unfccc.int/sites/default/files/resource/AC_TP_GlobalGoalOnAdaptation.pdf. The draft information paper on reviewing the adequacy and effectiveness of adaptation and support is available at <https://unfccc.int/documents/302837>.

- (iii) A global review of the adequacy and effectiveness of adaptation and support will need to derive information from various individual assessments at different scales, applying a broad range of methodologies;
- (iv) Iteratively applying such methodologies and reporting on the results as part of consecutive GSTs provides the following long-term opportunities:
- It enhances mutual learning at all levels on what works, what does not work and what could be innovative approaches for the future regarding the reduction of vulnerability and the enhancement of resilience;
 - Such information can lead to a shared understanding of the “state of the art” of adaptation planning, actions and support at the global level and the identification of gaps in adaptation action or support in specific thematic or geographical areas which could be addressed through enhanced national action or international cooperation;
 - The iterative application of the methodologies could assist in defining, over time, consistent types of information relevant for the review of the adequacy and effectiveness of adaptation and support, which could subsequently help to guide and streamline reporting requirements;
 - Experience in applying the methodologies and reporting thereon under the GSTs could enable their continuous development and improvement, possibly supported by innovative ways of collecting data and reporting.
- (b) In relation to approaches to reviewing the overall progress made in achieving the global goal on adaptation, the AC found that:
- Methodological, empirical, conceptual and political challenges persist with regard to possible approaches (figure 6 shows a simplified spectrum of approaches, from those with fewer to those with more challenges);

Figure 6

Spectrum of approaches to assessing adaptation progress and number of associated challenges



- Further understanding of the existing methodologies, conceptual and data gaps and trade-offs is needed to enable an overall review of progress towards achieving the global goal on adaptation;
- There is a need to manage trade-offs between key criteria for assessing adaptation progress, such as between aggregability and sensitivity to national context; between aggregability and coherence; and between feasibility of reviewing overall

progress on adaptation and aggregability and the ability to conduct longitudinal assessments;

(iv) The approach to reviewing overall progress in achieving the global goal on adaptation must also satisfy the dual mandate of the GST to assess collective progress on adaptation and inform the update and enhancement of national-level adaptation actions;

(v) Functioning M&E systems at the subnational and/or national level are required, and Parties must be encouraged to use existing M&E tools suited to their national context in order to measure progress;

(vi) Adaptation action undertaken must be adequately reported, including reports and communications to the secretariat, in order to understand progress on adaptation;

(vii) Combining approaches can generate a more holistic picture of adaptation progress and help to balance the strengths and weaknesses of the different approaches.

69. The AC established a joint working group comprising members of the AC, the LEG and the SCF that will continue to identify possible methodologies for reviewing the adequacy and effectiveness of adaptation and support, including with inputs from external experts.⁸¹

70. For further work on identifying approaches to reviewing the overall progress towards the global goal on adaptation, the CMA, at its third session, established the two-year Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation.⁸² The work programme will be carried out jointly by the SBSTA and the SBI with contributions from the current and incoming COP Presidencies, the AC, and relevant constituted bodies and experts, including the Working Group II of the IPCC, as appropriate.

71. The consecutive GSTs provide a unique opportunity for Parties to develop, apply and refine approaches and methodologies to undertake both types of reviews over time as experience grows and new approaches become available.

72. The synthesis report of the secretariat on the state of adaptation efforts, experiences and priorities as an input for the GST further elaborates on the global goal on adaptation. It also provides information from national reports and other reports relevant to reviewing the adequacy and effectiveness of adaptation and support, including an assessment of adaptation support needs of developing countries. [To be further refined]

V. Potential opportunities for enhanced action and support as well as for international cooperation on adaptation

73. According to Article 14, paragraph 3, of the Paris Agreement “the outcome of the global stocktake shall inform Parties in updating and enhancing, in a nationally determined manner, their actions and support [...], as well as in enhancing international cooperation for climate action.”

74. This chapter outlines potential opportunities for enhanced action and support and for international cooperation based on the findings presented in previous sections as well as on concrete proposals shared by Parties and stakeholders in different sets of submissions.⁸³

75. The opportunities are presented under three overall thematic clusters, namely information and transparency; engagement and participation; and integration and coherence. Issues under each of these clusters are perceived as recurring needs and priorities of Parties across the technical areas outlined in chapters II and III. Enhanced action and support and enhanced international cooperation on these issues appear to have the potential to

⁸¹ Further information on the first meeting of the joint working is available at <https://unfccc.int/documents/306909>.

⁸² Decision 7/CMA.3.

⁸³ Submissions provided in the context of the review of the work of the adaptation-related institutional arrangements under the Convention conducted by the AC in 2017 (see also section II. C. of this report) and in the context of the review of the AC mandated through decision 5/CP.22 (see also section II. B. of this report).

significantly increase ambition and yield greater progress across all facets of adaptation planning and implementation.

76. The opportunities under these overall clusters are listed at an aggregated level and should be considered jointly with the good practices and priorities of countries outlined for each of the technical areas described in previous sections.

77. The provision of means of implementation, in the form of finance, technology development and transfer, as well as capacity-building thus forms an essential part of enhanced action and international cooperation under each of the clusters and is not always explicitly mentioned.

A. Information and transparency

78. The need for more and better data, including climate and socio-economic data, as well as for customized information for all stakeholders and at all levels have been recurring themes across almost all technical areas of the adaptation process. Generating and collecting data and providing customized assistance for their translation into decision-relevant information, for example through climate services, are fundamental not only to facilitate more effective planning and implementation of adaptation action, but also reporting thereon. Together, data and climate services help to establish the scientific basis and transparency of the adaptation process, both of whose importance has grown unprecedentedly with the Paris Agreement, given their crucial role in enhancing ambition in both action and support.

79. Enhanced action and support and enhanced international cooperation to advance information and transparency could lead to (i) greater awareness of the need for and benefits of adaptation, including among political leaders; (ii) more effective risk, vulnerability and cost assessments and planning and monitoring, including the due consideration of gender aspects and vulnerable groups; (iii) progress in dealing with uncertainty in climate projections; (iv) progress in tracking adaptation finance and reviewing the adequacy and effectiveness of adaptation and support; (v) advances in reviewing progress towards the global goal on adaptation; and (vi) enhanced attraction of targeted support in the form of finance, technology development and transfer and capacity-building.

80. The following opportunities have been identified on the basis of the needs and priorities of Parties:

- (a) Opportunities for enhanced action and support:
 - (i) Extending and maintaining climate and socioeconomic data collection processes, M&E systems and adaptation finance tracking systems;
 - (ii) Co-producing data and information across disciplines and scales, including under the global agendas of climate change, disaster risk reduction and sustainable development;
 - (iii) Promoting and using climate services and establishing country-specific boundary organizations as the interface of science, policy and practice;
 - (iv) Establishing targeted two-way communication systems to channel information and knowledge on adaptation to and from all types of stakeholders and in appropriate forms to enable continuous learning;
 - (v) Ensuring rigorous monitoring at all levels and reporting on adaptation action and support by Parties;
 - (vi) Providing support for data generation and monitoring and tracking systems as well as for reporting.
- (b) Opportunities for international cooperation:
 - (i) Harmonizing nomenclature on key terms in the adaptation domain (e.g. climate risk, hazards and adaptation in general), for example by an authoritative body such as the IPCC, to facilitate communication on risks and their comparability

across geographical and temporal scales, as well as on finance and other types of support needed and provided;

- (ii) Bridging existing data gaps by facilitating open access to existing data, increasing investment in in-situ observational systems and exploiting the potential of big data and future-oriented technologies;
- (iii) Enhancing the downscaling of data from global climate models and regionalizing projections;
- (iv) Further developing and facilitating access to frontier technologies and innovative approaches/methodologies to facilitate data collection, finance tracking and reporting;
- (v) Enhancing and providing climate services and providing finance for the set-up of boundary organizations at national and/or regional levels;
- (vi) Using the GSTs as a means of sharing data and information and enhancing learning, awareness-raising and transparency.

B. Engagement and participation

81. The engagement and participation of all relevant stakeholders from all sections of society and at all levels are recognized as prerequisites for effective and sustainable adaptation. They are essential during all elements of the adaptation process so as to use all available knowledge, to enhance awareness, transparency, ownership and trust and to ensure that nobody is left behind. Ultimately, they are key for the continuity of adaptation action and support in the long term.

82. The following opportunities have been identified on the basis of the needs and priorities of Parties:

- (a) Opportunities for enhanced action and support:
 - (i) Establishing or enhancing institutional set-ups at national, subnational and regional levels that facilitate horizontal and vertical collaboration, for example through the process for formulating and implementing NAPs, supported by multiannual financial arrangements;
 - (ii) Enhancing awareness-raising, education, training and capacity-building to improve individual and institutional understanding, knowledge and skills in the long term;
 - (iii) Involving all relevant stakeholders, including national and local governments, universities, civil society organizations, intergovernmental organizations and the private sector, as well as vulnerable groups such as women, indigenous peoples and youth, and providing tangible evidence of the advantages of their integration, for example through cost-benefit analysis and the measurement of positive change via indicators and milestones;
 - (iv) Providing financial and capacity-building support for setting up effective institutional arrangements and for maintaining engagement and participation efforts.
- (b) Opportunities for international cooperation:
 - (i) Facilitating exchanges of information, knowledge and experience, for example through the work of the AC, including holding meetings and events such as the Adaptation Forum, engaging observers, experts and stakeholders in specific activities and products, and broadly disseminating information, including in association with the NWP and in collaboration with the newly invited adaptation contact points;⁸⁴

⁸⁴ Decision 2/CP.26.

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- (ii) Enhancing use of forums such as the technical examination process on adaptation to exchange knowledge, lessons and ideas among multiple stakeholders, to co-create products and to identify adaptation gaps and needs that can in turn be addressed through international cooperation;
 - (iii) Promoting South-South exchanges among experts and other stakeholders.

C. Integration and coherence

83. In the light of the close interlinkages of adaptation with other developmental challenges and the sharp increase in adaptation action and stakeholders, integration and coherence are pivotal aspects of implementing the global adaptation agenda. Both issues have the potential to increase effectiveness and sustainability of adaptation action and support while enhancing the efficient use of scarce resources.

84. The following opportunities have been identified on the basis of the needs and priorities of Parties:

- (a) Opportunities for enhanced action and support:
 - (i) Mainstreaming adaptation into all relevant sectors and integrating adaptation with other global agendas such as the SDGs, the Sendai Framework, and reducing poverty;
 - (ii) Using the wider pool of financial resources established for different global agendas to access funding for integrated approaches;
 - (iii) Identifying synergies and co-benefits with mitigation;
 - (iv) Using the process to formulate and implement NAPs for longer-term planning, guided by a vision that integrates adaptation, risk management and sustainable development.
- (b) Opportunities for international cooperation:
 - (i) Enhancing coherence and complementarity among adaptation-related institutional arrangements under the Convention, for example through a clearer definition of their roles and functions and regular reviews by the AC of their effectiveness in the light of the evolving needs of Parties;
 - (ii) Enhancing the role of the AC in promoting coherence, for example by shifting coherence efforts from generic to more targeted approaches, leading to specific results that strengthen the role of the UNFCCC in providing guidance and incentives to regional, national and local-level adaptation efforts and in identifying adaptation gaps and needs and ways to address them;
 - (iii) Fostering the practice of the COP to issue joint mandates on adaptation to constituted bodies, possibly involving the GCF or other operating entities of the Financial Mechanism to help to facilitate the implementation of adaptation and/or integrated action;
 - (iv) Fostering transboundary views on hazards and country groupings, for example towards regionalization and ecosystem or eco-region-based groupings when identifying vulnerabilities and tailoring support instead of groupings based on geographical criteria;
 - (v) Enhancing coherence and complementarity among providers of support for adaptation and other global agendas and providing information to countries on how funding opportunities complement each other in supporting the objectives of all global agendas;
 - (vi) Exploring innovative funding mechanisms, both internationally and nationally, including leveraging private finance flows, to support adaptation and integrated approaches.

VI. Concluding remarks

85. The information presented in this report sheds light on the state of adaptation actions, support, experiences and priorities on the basis of findings from the work of the AC in its areas of expertise. The report also offers potential opportunities for enhanced action and support as well as enhanced international cooperation on adaptation in various areas. It is hoped that this report, in conjunction with the other synthesis reports prepared as inputs for the first GST, provides a sound basis for the technical assessment as well as for assessing progress in future GSTs. It is also hoped that the reports will facilitate learning among Parties and assist them in enhancing the collective ambition of action and support towards achieving the purpose and long-term goals of the Paris Agreement.

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