

**Methodologies for reviewing the adequacy and effectiveness  
of adaptation and support**

**Recommended action by the Adaptation Committee and  
the Least Developed Countries Expert Group**

Building on past decisions of the AC and LEG to advance work on this mandate through a joint working group, the AC and the LEG may wish to each endorse the following actions:

The AC and the LEG, through their joint working group, in collaboration with the SCF, to consider this note and its annex, including the suggested next steps, and discuss the way forward on the mandate in decision 11/CMA.1, para. 36 on reviewing the adequacy and effectiveness of adaptation and support as referred to in Article 7, paragraph 14 (c), of the Paris Agreement.

Clear the annex to this note for publication as an AC-LEG knowledge product, taking into account final revisions that may be incorporated in response to recommendations from the joint working group, and to continue compiling existing methodologies on reviewing the adequacy and effectiveness of adaptation and support as part of the Adaptation Knowledge Platform.

Consider establishing a thematic expert group to support the work of the joint working group, taking into account views from the first meeting of the joint working group.

## **1. Introduction**

1. The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA), at its first session, invited the Adaptation Committee (AC) and the Least Developed Countries Expert Group (LEG), in collaboration with the Standing Committee on Finance (SCF), and relevant experts to contribute to the technical work of developing methodologies and to make recommendations on reviewing the adequacy and effectiveness of adaptation and support referred to in Article 7, paragraph 14 (c), of the Paris Agreement, by continuing to compile existing methodologies.
2. The AC and the LEG have compiled further methodologies as contained in the annex based on submissions received in response to decision 11/CMA.1, para. 36<sup>1</sup> as well as on other technical reports and documentation.
3. This summary note offers considerations on the way the technical work of the AC and the LEG could be taken forward so as to contribute towards reviewing the adequacy and effectiveness of adaptation and support under the global stocktake (GST).

## **2. Observations from the submissions and other relevant documents on methodologies**

4. The set of methodologies contained in the annex has been applied at different scales, in different contexts and according to their individual objectives. The lessons learned from their application as well as

---

<sup>1</sup> Submissions have been received from two Parties/Party groups (Indonesia, European Union), one bilateral agency (Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH) and one other organization (Local Climate Adaptive Living (LoCAL) facility of the UN Capital Development Fund)

experienced gaps and challenges point to the following observations that may be drawn and used in developing, selecting and applying methodologies for the global stocktake:

- a) 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 do it;
  - b) 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;
  - c) 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. To this end, the methodologies described in the annex, variations thereof and others that will be deemed suitable, may provide a useful basis.
5. Iteratively applying these methodologies at various levels and for various purposes provides the following long-term opportunities:
- a) First, it enhances **learning** at all levels. Participatory reviews at the project, programme, portfolio or global level provide valuable information for all stakeholders for future adaptation planning and support. At the global level, the information that Parties and non-Party stakeholders (international organizations, academia, international cooperation) make available on diverse implemented adaptation actions, the support provided and received and the respective outcomes as well as lessons learned, good practices, gaps and needs facilitate mutual learning 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.
  - b) Second, the provision of such information can lead to a **shared understanding** of the “state of the art” of adaptation planning, actions and support at the international level and the progress made in reducing vulnerability and building resilience to climate change. Viewed in conjunction with IPCC reports and information from the Essential Climate Variables (ECVs) on the state of the climate system, the information shared by Parties through their country reporting (e.g. under the Enhanced Transparency Framework as well as through adaptation communications, NDCs and NAPs) and by constituted bodies, operating entities of the financial mechanism, UN agencies and other international organizations provides opportunities to inform the global stocktake. Outcomes of the GST could subsequently guide Parties in increasing adaptation actions and efforts as well as the provision of support in geographical and thematic areas, where gaps have been identified, through both domestic and international cooperation. This, in turn, can ultimately inform progress towards the global goal on adaptation.
  - c) Third, the iterative application of these tools, methodologies and frameworks and related knowledge generation and exchange with other global efforts e.g. under the Sustainable Development Goals process and the Sendai Framework,<sup>2</sup> 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 guide reporting requirements as well as their streamlining. The annex lists several review approaches which have, over time, defined common criteria to assess the effectiveness of adaptation support. These include the core indicators and other common indicators used by climate funds, the performance indicators to measure the effectiveness of the implementation of the technology transfer framework, and key factors that contribute to effective climate change capacity-building identified through the reviews of the capacity-building framework. Other initiatives are underway that work on increasing the consistency of the information collected for assessing adaptation projects and their outputs and outcomes. Examples include the Least Developed Countries Expert Group’s work on tracking progress annually on national adaptation plans through the application of generic process metrics

---

<sup>2</sup> For an overview of methodologies and indicators used by these frameworks, see the AC technical paper on Approaches to reviewing the overall progress made in achieving the global goal on adaptation (AC19/SUM-INFO/6A).

of the PEG M&E tool,<sup>3</sup> the Inter-Sectoral Impact Model Intercomparison Project (ISIMIP),<sup>4</sup> the Multilateral Development Banks' (MDBs) Framework and Principles for Climate Resilience Metrics in Financing Operations<sup>5</sup>, the ISO 14090 standard "Adaptation to climate change" developed by the International Organization for Standardization<sup>6</sup>, efforts by the Task Force on Climate-related Financial Disclosures (TCFD)<sup>7</sup> and various other research projects.<sup>8</sup>

6. In terms of data and information collection and sharing for the assessments, **innovative sources of information and data**, such as big data, satellite observation and mobile technology, as well as **innovative reporting systems**, could be beneficial in further refining and populating existing or new tools and methodologies and in reducing reporting burden. These allow for higher frequencies and lower costs of data collection and sharing and provide important alternatives or additions to more traditional methods based on household surveys, national statistics, and paper-based reports.

7. Experiences in the applications of the tools, methodologies and frameworks mentioned above are still somewhat limited and new tools and methodologies will **continuously be developed and improved over time**, at best in close collaboration with the scientific community. In this regard, countries should be encouraged to use the formulation and implementation of NAPs, the communication of adaptation communications, NDCs, national communications and reporting under the enhanced transparency framework (ETF) and on support provided and received to regularly apply the methodologies to review the adequacy and effectiveness of adaptation and support and thereby collaborate with all those stakeholders that have already gained experience in this regard. This would enable the global community to collectively improve the applied methodologies, including in light of new values and trends. In this context, the GST is seen as one important venue to both learn from existing knowledge and experiences, as well as to inform the further refinement of such applications as well as on geographical and thematic areas not yet covered by them.

### 3. Considerations on the way forward

8. Based on the observations and in view of contributing to the review of the adequacy and effectiveness of adaptation and support as part of the GST, the AC and the LEG, in collaboration with the SCF, may wish to consider the following when taking their technical work forward:

- a) Desirable and feasible scope and outputs of reviewing the adequacy and effectiveness of adaptation and support under the first GST (e.g. a global overview of the adequacy and effectiveness of adaptation and support at different scales and levels using available methodologies; patterns of effective adaptation and its support as well as lessons learned, good practices, gaps and further needs) and how those relate to the GST modalities (synthesis reports, workshops during the technical dialogue etc.);
- b) How the GST could trigger a process that would increase and improve, over time, the information available and the methodologies applied for reviewing the adequacy and effectiveness of adaptation and support.

---

<sup>3</sup> The latest report to the SBI on this work is available at [https://unfccc.int/sites/default/files/resource/sbi2020\\_inf13.pdf](https://unfccc.int/sites/default/files/resource/sbi2020_inf13.pdf). Further information on the PEG M&E tool is available in section 4.4 of the annex.

<sup>4</sup> <https://www.isimip.org>

<sup>5</sup> [https://publications.iadb.org/publications/english/document/A\\_Framework\\_and\\_Principles\\_for\\_Climate\\_Resilience\\_Metrics\\_in\\_Financing\\_Operations\\_en.pdf](https://publications.iadb.org/publications/english/document/A_Framework_and_Principles_for_Climate_Resilience_Metrics_in_Financing_Operations_en.pdf).

<sup>6</sup> [www.iso.org/news/ref2405.html](http://www.iso.org/news/ref2405.html)

<sup>7</sup> <https://www.fsb-tcf.org>

<sup>8</sup> Owen, G. 2020. What makes climate change adaptation effective? A systematic review of the literature. *Global Environmental Change* 62 (2020) 102071; United Nations Environment Programme. 2021. *Adaptation Gap Report 2020*. Nairobi; Global Center on Adaptation. 2021. *State and Trends in Adaptation Report 2020*. Rotterdam; Tompkins, E. L., Vincent, K., Nicholls, R. J., & Suckall, N. (2018). Documenting the state of adaptation for the global stocktake of the Paris Agreement. *Wiley Interdisciplinary Reviews: Climate Change*, [e545]; Learning & working papers and other publications by the Independent Evaluation Unit of the Green Climate Fund.

#### **4. Next steps for the AC and the LEG**

9. Taking into account the above considerations, the AC and the LEG, in collaboration with the SCF, may wish to consider the following next steps as part of their upcoming respective meetings in August and September 2021, and bilateral exchanges between them as necessary:

- a) Initiate/continue discussions on the way forward in contributing to the technical work of developing methodologies and in making recommendations on reviewing the adequacy and effectiveness of adaptation and support referred to in Article 7, para. 14 (c), of the Paris Agreement, through the AC-LEG joint working group, in collaboration with the SCF;
- b) Continue compiling existing methodologies on reviewing the adequacy and effectiveness of adaptation and support as part of the Adaptation Knowledge Platform to complement the information basis, including through the AC-LEG joint working group, in collaboration with the SCF;
- c) The AC and the LEG to consider, while taking into account views from the joint AC-LEG joint working group, establishing a thematic expert group that would support the work of the joint working group and contribute additional insights and ideas on reviewing the adequacy and effectiveness of adaptation and support in the context of Article 7, para 14(c). Such a group would be established using usual considerations in balance of representation, gender and accountability to the parent groups (AC and LEG) on its programme of action, etc.;
- d) The AC-LEG joint working group to organize a meeting of the thematic expert group in the second half of 2021;
- e) To publish the annex to this note as an AC-LEG knowledge product, taking into account final revisions that may be incorporated in response to recommendations from the joint working group.

## **Annex: Methodologies for reviewing the adequacy and effectiveness of adaptation and support**

### **TABLE OF CONTENTS**

1.	Introduction and background	6
2.	Context and purpose	6
2.1.	Purpose and principles	7
2.2.	Linkages with other mandates of the AC and the LEG	8
3.	Reviewing the adequacy and effectiveness of adaptation and support – general considerations	9
3.1.	Defining adequacy and effectiveness in the context of adaptation and its support	9
3.2.	Scope, purpose and requirements of a process to review the adequacy and effectiveness of adaptation and support	10
4.	Methodologies to review the adequacy and effectiveness of adaptation	11
4.1.	Monitoring climate risk/vulnerability over time	11
4.2.	Applying a theory of change to illustrate and assess the adaptation process	12
4.3.	Asking beneficiaries	12
4.4.	Applying country-specific adaptation M&E systems	13
4.5.	Lessons learned	15
4.6.	Gaps and challenges	16
5.	Methodologies to review the adequacy and effectiveness of adaptation support (finance, technology, capacity-building)	17
5.1.	Reviewing the effectiveness of adaptation support	17
5.2.	Reviewing the adequacy of adaptation support	27
5.3.	Findings and lessons learned	32
5.4.	Gaps and challenges	33

## 1. Introduction and background

10. The Conference of the Parties (COP) at its twenty-first session requested the Adaptation Committee (AC) and the Least Developed Countries Expert Group (LEG) to undertake three tasks in order to assist in the implementation of the Paris Agreement, with outputs to be considered by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) at its first session.<sup>1</sup> One of the requests was to, jointly with the Standing Committee on Finance (SCF) and other relevant institutions, develop methodologies and make recommendations on reviewing the adequacy and effectiveness of adaptation and support referred to in Article 7, paragraph 14 (c), of the Paris Agreement.

11. In order to address this mandate, the AC and LEG collected information through a desk review, submissions from Parties and other stakeholders, including from the SCF, and events organized on the margins of United Nations climate change conferences.<sup>2</sup> Based on the information the AC and the LEG provided recommendations to the CMA through their respective reports.<sup>3</sup>

12. The CMA, at its first session, considered the recommendations, noted that the current state of knowledge was not sufficient to address the mandate and invited Parties, academia and other stakeholders to undertake further technical work, building on the existing work of the AC, LEG and SCF. It further invited the AC and the LEG, in collaboration with the SCF, and relevant experts to contribute to the technical work by continuing to compile existing methodologies. It also invited Parties, United Nations entities and other relevant organizations, as well as bilateral and multilateral agencies, to submit information on gaps, challenges, opportunities and options associated with methodologies for reviewing the adequacy and effectiveness of adaptation and support, including in the areas of adaptation needs, plans and strategies; enabling environments and policy frameworks; frameworks used for assessing the effectiveness of adaptation efforts; efforts and systems to monitor and evaluate the effectiveness of adaptation efforts; support through all instruments and channels, including domestic, international, public and private sources and progress towards the implementation and achievement of adaptation goals, plans and strategies.<sup>4</sup>

13. This paper presents existing approaches for reviewing the adequacy and effectiveness of adaptation and support which may inform the development of methodologies to undertake such a review under the global stocktake. The paper builds on previous and ongoing work of the AC and the LEG in the context of this mandate, subsequent decisions by the CMA and the information contained in the submissions received in response to decision 11/CMA.1, para. 36.<sup>5</sup> The methodologies described for reviewing the adequacy and effectiveness of adaptation are based mostly on the information provided through the submissions. The methodologies for reviewing the adequacy and effectiveness of support are mainly drawn from other technical reports and documentation on existing approaches, since information on them in the submissions was limited. Given the postponement of the 2020 COP/CMA and SB sessions, further submissions might be forthcoming and if so, will be considered in any iterations of this paper.

## 2. Context and purpose

14. The development of methodologies for reviewing the adequacy and effectiveness of adaptation and support, including finance, technology and capacity-building, requires the consideration of the envisioned purpose of the review as well as other related mandates and ongoing activities under the Paris Agreement in order to achieve best possible coherence and avoid duplication of efforts by Parties.

---

<sup>1</sup> Decision 1/CP.21, paragraphs 41, 45 (a) and 45 (b).

<sup>2</sup> Further information on this work is available at <https://unfccc.int/topics/adaptation-and-resilience/groups-committees/adaptation-committee/joint-ac-and-leg-mandates-in-support-of-the-paris-agreement>.

<sup>3</sup> FCCC/SB/2017/2, FCCC/SBI/2017/14 and FCCC/SB/2017/2/Add.1– FCCC/SBI/2017/14/Add.1.

<sup>4</sup> Decision 11/CMA.1, paragraphs 34 – 36.

<sup>5</sup> As of 20 October 2020, submissions were received from: Parties: European Union, Indonesia; other organization: Local Climate Adaptive Living (LoCAL) facility of the UN Capital Development Fund; and bilateral agency: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH; in response to the call for submissions referred to in paragraph 3 of this paper. The paper also takes into account information from Parties and other stakeholders submitted in 2017 in response to an earlier call for submissions in the context of this mandate.

## 2.1. Purpose and principles

15. As the review of the adequacy and effectiveness of adaptation and support provided for adaptation will contribute information to the global stocktake (GST) as defined in Article 14 of the Paris Agreement and elaborated in decision 19/CMA.1, it should assist the GST in:

- a) Reviewing the collective progress towards achieving goals enshrined in Article 2, paragraph 1 (b), and Article 7 of the Paris Agreement, as they relate to adaptation and support provided for adaptation;
- b) Informing Parties in updating and enhancing, in a nationally determined manner, their adaptation actions and support as well as in enhancing international cooperation for adaptation action, also taking into account the outcomes from the other adaptation components and the support component of the GST.

16. Considering the principles outlined for the GST, these may also guide the development of methodologies for reviewing the adequacy and effectiveness of adaptation and support. The methodologies should therefore enable the review to:

- a) Be comprehensive and facilitative;
- b) Avoid the duplication of efforts and take into account the results of relevant work conducted under the Paris Agreement, the Convention and the Kyoto Protocol; and
- c) Facilitate a summary of the opportunities and challenges for enhancing action and support in the light of equity and the best available science, as well as lessons learned and good practices.<sup>6</sup>

17. Based on the deliberations previously held by the AC, the LEG and relevant stakeholders under this mandate,<sup>7</sup> the methodologies should further:

- a) Apply to all Parties;
- b) Enable separate assessments of the adequacy and effectiveness as well as the consideration of their relationship;
- c) Evolve over time
- d) Use quantitative and qualitative information/data/metrics;
- e) Give a voice to intended beneficiaries;
- f) Inform on and enhance the understanding of progress and facilitate learning and knowledge-sharing; and
- g) Build on existing processes and frameworks such as the enhanced transparency framework of the Paris Agreement, the review of the Financial Mechanism under the Convention, the Sustainable Development Goals, the Sendai Framework, and the aid effectiveness agenda, to the extent possible.

18. Taking due account of the purpose and principles of the review will enhance coherence and synergies of the components of the GST and ensure that useful information is being provided to undertake the various assessments which will ultimately enable mutual learning and further progress towards achieving the goals of the Paris Agreement.

### **Box 1. The Enhanced Transparency Framework established by the Paris Agreement**

The Paris Agreement established an Enhanced Transparency Framework (ETF) designed to build trust and confidence that all countries are contributing their share to the global effort and to promote effective implementation. Through the provisions contained in Article 13 of the Paris Agreement and subsequent decisions, a basis has been established for enhancing the transparency of action taken and support

<sup>6</sup> Decision 19/CMA.1, paragraph 13.

<sup>7</sup> See <https://unfccc.int/topics/adaptation-and-resilience/groups-committees/adaptation-committee/joint-ac-and-leg-mandates-in-support-of-the-paris-agreement>.

provided and received by Parties to meet their national climate targets and actions defined in their nationally determined contributions (NDCs).

Through these provisions, each Party is requested to submit a biennial transparency report (BTR) on actions taken and support provided and received with flexibility provided to those developing countries that need it in light of their capacities. The BTRs may contain a non-mandatory component on climate change impacts and adaptation. Some of the submitted information in the BTRs will undergo a technical expert review and subsequently be subject to a facilitative multilateral consideration of progress.

A detailed set of modalities, procedure and guidelines (MPGs) that make the framework operational has been adopted by decision 18/CMA.1 which also fleshes out the information that could be submitted as part of the adaptation component of the BTR.

In addition to scientific research and findings by the Intergovernmental Panel on Climate Change (IPCC), information reported in BTRs will be considered at a collective level as an important input into the global stocktake.

## 2.2. Linkages with other mandates of the AC and the LEG

19. The development of methodologies for the review needs to take into account the agreed modalities for the GST,<sup>8</sup> the thematic areas and related types of information that the GST will consider,<sup>9</sup> and the sources of input that have been decided to deliver such information.<sup>10</sup> The AC and the LEG have been contributing to the design and the modalities of several of the adaptation-related components of the GST and associated sources of input through work under individual or joint mandates.

20. Examples of this work include the AC and the LEG's development of modalities to recognize the adaptation efforts of developing country Parties<sup>11</sup> and, in collaboration with the Standing Committee on Finance, the development of methodologies on taking the necessary steps to facilitate the mobilization of support for adaptation in developing countries in the context of the limit to global average temperature increase referred to in Article 2 of the Agreement.<sup>12</sup> In addition, the AC, in collaboration with the LEG, partner organizations of the Nairobi work programme, users and developers of relevant methodologies, is in the process of developing and regularly updating an inventory of relevant methodologies for assessing adaptation needs with a view to assisting developing countries in identifying such needs.<sup>13</sup>

21. With regard to the sources of input for the GST the AC is developing draft supplementary guidance for voluntary use by Parties in communicating information in accordance with the elements contained in the annex to decision 9/CMA.1 (*Adaptation Communications*).<sup>14</sup> In addition, the AC has been tasked to consider approaches to reviewing the overall progress made in achieving the global goal on adaptation which will form another important component under the GST.<sup>15</sup> Work under both mandates is closely related to the work on developing methodologies for the review of adequacy and effectiveness of adaptation and support.

22. Additionally, the LEG monitors the progress made by the developing countries on the process to formulate and implement NAPs and the support provided to them on an ongoing basis. The information is published in the annual progress reports,<sup>16</sup> with a view to assisting the SBI in assessing progress in the process to formulate and implement NAPs.

<sup>8</sup> Decision 19/CMA.1, part I. For a short overview of the modalities see the AC Draft technical paper on approaches to reviewing the overall progress made in achieving the global goal on adaptation (AC/2020/3), box 1.

<sup>9</sup> Decision 19/CMA.1, part II.

<sup>10</sup> Decision 19/CMA.1, paragraph 37.

<sup>11</sup> Decision 11/CMA.1, section II.

<sup>12</sup> Decision 11/CMA.1, section IV.

<sup>13</sup> Decision 11/CMA.1, paragraph 15.

<sup>14</sup> Decision 9/CMA.1, paragraph 15.

<sup>15</sup> Decision 1/CMA.2, paragraph 14.

<sup>16</sup> Available at <https://unfccc.int/node/747>.



### **3. Reviewing the adequacy and effectiveness of adaptation and support – general considerations**

#### **3.1. Defining adequacy and effectiveness in the context of adaptation and its support**

23. The review of the effectiveness of adaptation requires the assessment of whether the adaptation action is successful in addressing identified adaptation needs, in other words, assessing “what works in delivering long-term resilience”.<sup>17</sup> The focus of such a review lies on identifying whether the measures that are being implemented achieve, over time, the intended outcomes and do not lead to unintended and negative side effects (i.e. maladaptation), e.g. on certain social groups or geographical regions. Thereby, the review may assess the more immediate outputs, such as the number of beneficiaries; the outcomes, such as the increase in institutional capacity or the availability and use of climate data or the impacts of adaptation efforts in terms of e.g. an increase in societal wellbeing or the maintenance thereof despite the effects of climate change. It might as well review a combination or all of these aspects and thereby focus either on the adaptation process (policies, institutions, capacities, plans) or its ultimate outcomes on development or on both.<sup>18</sup>

24. Reviewing the effectiveness of adaptation support requires the assessment of an additional dimension which relates to, the pre-conditions for and the process of the delivery and receipt of support. This may include on the one hand aspects related to the delivery of support in accordance with the guidance provided by the COP to the operating entities of the financial mechanism (e.g. request to the GCF to expedite support to the developing countries for NAPs – decision 1/CP.21, para. 46), constituted bodies and other entities; and on the other hand, aspects such as country ownership, alignment, harmonization, results and mutual accountability, which are covered by the Paris Declaration on Aid Effectiveness<sup>19</sup>. It may also include features of the support process such as enabling environments, transparency, reaching the most vulnerable and an intervention’s ability to leverage finance or to be scaled-up and sustainable.<sup>20</sup>

25. The aim of reviewing the adequacy of adaptation and its support is to determine whether enough has been done.<sup>21</sup> Assessing the adequacy of adaptation thus requires the determination of whether the implemented measures are sufficient or proportional vis-à-vis the identified needs. This assessment may on the one hand assist in identifying whether the measures are sufficient in terms of e.g. covering all aspects of required adaptation at all geographical dimensions. On the other hand, it may also allow for identifying thresholds at which adaptation efforts are enough so as to also save resources to achieve other national priorities.<sup>22</sup>

26. Assessing the adequacy of adaptation support adds the dimension of evaluating its scope and accessibility. It may include, for example, the determination, in quantitative or qualitative terms, of whether provided support meets globally agreed goals (e.g. significant share of the 100bn USD to adaptation over time<sup>23</sup>) and other COP provisions or whether it meets individually or globally identified support areas and needs. It may also assess whether access to support is granted to all those in need for it. Similar to the review of the adequacy of adaptation, the assessment of the adequacy of support may also include the identification of thresholds at which support is indeed sufficient and, in some cases, may even provide

---

<sup>17</sup>LDC Climate Change. 2019. Delivering Out Climate-Resilient Future: Lessons from a Global Evidence Review. LDC Initiative for Effective Adaptation and Resilience (LIFE-AR). Available at [http://www.ldc-climate.org/wp-content/uploads/2019/09/web\\_LDCevidencereview.pdf](http://www.ldc-climate.org/wp-content/uploads/2019/09/web_LDCevidencereview.pdf).

<sup>18</sup> Craft, B and Fisher, S. 2016. Measuring effective and adequate adaptation. IIED, London. Available at <https://pubs.iied.org/pdfs/10171IIED.pdf>.

<sup>19</sup> <http://www.oecd.org/dac/effectiveness/45827300.pdf>.

<sup>20</sup> Ellis, J., Caruso, R. and S. Ockenden. 2013. Exploring Climate Finance Effectiveness. OECD. Climate Change Expert Group. Paper No. 2013 (4). Available at <https://www.oecd.org/dac/evaluation/climatechange.htm>.

<sup>21</sup> Ibid.

<sup>22</sup> Ibid.

<sup>23</sup> Decision 1/CP.18, paragraphs 64-66.

information on whether outcomes of a particular adaptation action could be achieved with fewer resources in the future or in other geographical regions.

27. Adequacy and effectiveness are related insofar as adaptation and its support need to be both, adequate and effective, in order to achieve intended adaptation outcomes. In some cases, adequacy is even considered as a criterion of effectiveness, as adaptation measures cannot effectively lead to intended outcomes if they or their support are not sufficient. Their relationship becomes even more apparent when asking whether more support could have led to better results in an adaptation situation since this raises the question whether available support had been used effectively in the first place.

28. Ultimately, the definitions of adequacy and effectiveness and the criteria to review them depend on the perspective and objectives of the respective stakeholders and may also change over time which the various methodologies presented in this paper will illustrate. Thereby, the methodologies used to evaluate them also depend on the scope and purpose of the intended review.

### **3.2. Scope, purpose and requirements of existing approaches to review the adequacy and effectiveness of adaptation and support<sup>24</sup>**

29. The paper describes a variety of existing approaches that help in reviewing the adequacy and effectiveness of adaptation and support at different levels. These approaches vary with respect to their scope, purpose and requirements.

#### **3.2.1. Scope**

30. The review of adequacy and effectiveness is usually part of wider evaluations of adaptation processes or outcomes, which also take into account aspects like “relevance”, “coherence”, “efficiency”, “impact” and “sustainability” of the activities in question. The paper describes only those aspects of the overall evaluation approaches that relate to adequacy and effectiveness.

31. The overall evaluations, or the monitoring and evaluation (M&E) systems behind them, may focus on the project or programme level, the national level, transboundary or portfolio level or the global level. Activities and their support at each of these levels have different objectives and, while consisting of similar components, the evaluation process and the methodologies applied need to be adapted accordingly.

#### **3.2.2. Purpose**

32. The purpose of reviewing or evaluating adaptation and its support may be to inform the management and implementation of the adaptation action (e.g. comparing milestones with actual progress of an adaptation project or plan), facilitate learning (e.g. whether and why or why not vulnerabilities have been reduced or resilience increased as a result of the adaptation activity undertaken or the type of support provided) or demonstrate accountability (e.g. reporting on results of a project or portfolio of adaptation actions towards e.g. the donor, the beneficiaries or the international community).

33. Consequently, the methodology applied for the evaluation will differ according to the respective purpose. For instance, quantitative methods might be sufficient for accountability purposes while qualitative approaches are required to facilitate learning. Today, most of the evaluations of development, including adaptation interventions, combine several or all the purposes and therefore use a combination of methods.

#### **3.2.3. Requirements**

34. The scope and purpose of the review define which resources in terms of data and information, know-how, time and finance are required in order to undertake the assessments and to meet the needs or requests of the intended target audience. On the other hand, the degree of availability of these resources may also influence the definition of the scope and purpose.

---

<sup>24</sup> A review is defined by the OECD DAC as “an assessment of the performance of an intervention, periodically or on an ad hoc basis”. It notes that while the terms evaluation and review are sometimes used as synonyms, “evaluation” usually refers to a more comprehensive/in-depth assessment and reviews tend to emphasize operational aspects. This paper uses both terms interchangeably according to the respective context.

35. As the monitoring of and reporting on the implementation of adaptation activities is the primary source of data and information for their review, monitoring, reporting and evaluation systems are often set up in conjunction and are jointly referred to as “M&E systems.” The quantity and quality of monitoring and reporting greatly influences the quality of a review. In order to reduce monitoring and reporting burdens of countries, the set-up of a new M&E system requires the consideration of potential synergies and linkages with existing systems.

## 4. Methodologies to review the adequacy and effectiveness of adaptation

36. As the concepts of adequacy and effectiveness pertain primarily to the results or outcomes of an action, those M&E approaches which focus on outcomes instead of processes may be the most appropriate to inform the review of the adequacy and effectiveness of adaptation.<sup>25</sup>

37. The purpose of outcome-based approaches is primarily learning but can also assist in demonstrating accountability. Their scope can range from project or programme level to the national level or assess the collective results of a portfolio of adaptation actions, e.g. understanding the collective impact of a climate fund in several countries. Insights from these approaches can thus inform on the adequacy and effectiveness of adaptation. Many of the approaches resemble those that are discussed by the Adaptation Committee in its work on considering approaches to reviewing the overall progress made in achieving the global goal on adaptation or otherwise may contribute to this work.<sup>26</sup>

### 4.1. Monitoring climate risk/vulnerability over time

38. Monitoring the level of climate risks/vulnerabilities over time through repeated assessments and analysing whether any changes can be linked to the adaptation measure is one way of assessing effectiveness of adaptation. This approach can be applied at any level if the following conditions are fulfilled: (i) the method used for the initial climate risk/vulnerability assessment is exactly replicated over time using the same data and assessment procedures; (ii) the climate risk/vulnerability assessment includes variables that are relevant and directly related to the adaptation measure and can be sufficiently isolated from other related variables; and (iii) a sufficient period of time lies between the assessments as some adaptation measures require time to unfold their benefits. Particular attention by such assessments may be paid to the poorest and most vulnerable communities of a country or region as a litmus test for assessing overall adequacy and effectiveness of the adaptation measure.

39. The GIZ Vulnerability Sourcebook and its Risk Supplement provide a conceptual framework and a step-by-step guideline for standardized vulnerability assessments, covering a broad range of sectors and topics as well as various spatial levels and time horizons.<sup>27</sup> The PROVIA Guidance on assessing vulnerability, impacts and adaptation to climate change updates and improves existing guidance for assessing climate change vulnerability, impacts and adaptation, covering the range of available approaches, methods and tools.<sup>28</sup> The “Impact and Vulnerability Analysis of Vital Infrastructures and built-up Areas” (IVAVIA) methodology is another guideline to conduct vulnerability assessment, particularly of urban areas and their infrastructure. It was developed in the framework of the European project “Climate Resilient Cities and

---

<sup>25</sup> The GIZ has developed an M&E Navigator which outlines a list of specific adaptation M&E purposes and matches them to relevant M&E approaches at the project, portfolio or national level, including a classification of whether these focus on processes or outcomes. The M&E Navigator as well as detailed descriptions of the M&E approaches and further guidance material are available at <https://www.adaptationcommunity.net/monitoring-evaluation/multi-level-adaptation-me/>

<sup>26</sup> Decision 1/CMA.2, paragraph 14. A draft technical paper has been prepared for AC 17. A revised version of the paper is currently under preparation (AC/2020/3).

<sup>27</sup> GIZ & Adelphi (2014a). *The vulnerability sourcebook: concept and guidelines for standardised vulnerability assessments*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. Available at: <https://www.adaptationcommunity.net/vulnerability-assessment/vulnerability-sourcebook/>.

<sup>28</sup> PROVIA. 2013. *Guidance on assessing vulnerability, impacts and adaptation to climate change*. Summary. United Nations Environment Programme, Nairobi.

Infrastructures” (RESIN) and helps users to map, analyse and communicate the impact of climate trends and weather events on key elements of the city’s physical, social and economic fabric.<sup>29</sup>

40. Practical examples of monitoring risk at the national level include those from Canada and New Zealand. In 2018, an expert panel convened by the Council of Canadian Academies was tasked to identify the top climate change risks facing both Canada and the federal government, their relative significance and those that have the most potential to be minimized by adaptation measures. The panel identified 12 major areas of risk facing Canada over the next 20 years and confirmed that structured, well-resourced, inclusive, and regularly repeated national (and regional) climate change risk assessments could allow greater precision in the estimation of the risks’ potential consequences and likelihoods.<sup>30</sup>

41. In 2019, New Zealand conducted its first National Climate Change Risk Assessment (NCCRA) and identified 43 priority risk, of which 10 are most significant. It also conducted consequence and urgency ratings and revealed research priorities associated with these risks. The findings of the assessment will be used to develop a national adaptation plan (NAP) that will respond to the most significant risks, opportunities and knowledge gaps. The Climate Change Response (Zero Carbon) Amendment Act 2019 commits New Zealand to identify future risks and opportunities by producing an NCCRA every six years. In response to each NCCRA, the Minister for Climate Change must prepare a national adaptation plan.<sup>31</sup>

42. All of the described risk/vulnerability assessments need to be accompanied by an analysis of the way the adaptation measures have caused or contributed to the reduction or stabilisation of climate risk/vulnerability, which can be undertaken using a theory of change. This approach is explained in the next section.

## 4.2. Applying a theory of change to illustrate and assess the adaptation process

40. A theory of change explains how adaptation is assumed to take place and can help to identify suitable adaptation measures. Comparing the theory of change and its underlying assumptions to the actual situation can then inform the effectiveness of adaptation. The design of the theory of change as well as the assessment of adaptation effectiveness typically require a participatory approach including the intended beneficiaries of the adaptation measure to ensure that social risk factors are included and the assumptions about people’s behaviour are correct. Theories of change are well suited to dynamic change processes and can be adjusted over time, if participatory monitoring indicates that assumptions have been incorrect. This method contributes to a shared understanding of adaptation actions and their intended benefits among stakeholders and may also be accompanied by using indicators for various stages of the change process, once such joint understanding has been achieved.<sup>32</sup> This method lends itself to assess outcomes of adaptation efforts ranging from improved institutional capacity to increased societal wellbeing.

## 4.3. Asking beneficiaries

41. Given the local contextualization of climate impacts, adaptation and the assessment of its effectiveness lend themselves well for local stakeholder consultation and other participatory processes. Asking beneficiaries about whether implemented actions have enabled them to better deal with climate impacts provides reliable information about adaptation effectiveness and at the same time can enhance ownership

<sup>29</sup> [http://www.resin-cities.eu/fileadmin/user\\_upload/IVAVIA\\_Guideline\\_v3\\_final\\_web.compressed.pdf](http://www.resin-cities.eu/fileadmin/user_upload/IVAVIA_Guideline_v3_final_web.compressed.pdf).

<sup>30</sup> Council of Canadian Academies. 2019. *Canada’s Top Climate Change Risks*. Ottawa, Canada: Expert Panel on Climate Change Risks and Adaptation Potential, Council of Canadian Academies. Available at <https://cca-reports.ca/reports/prioritizing-climate-change-risks/>.

<sup>31</sup> New Zealand Ministry for the Environment. 2020. *National Climate Change Risk Assessment for New Zealand*. Wellington, New Zealand: Ministry for the Environment. Available at <https://www.mfe.govt.nz/publications/climate-change/national-climate-change-risk-assessment-new-zealand-main-report>.

<sup>32</sup> Further information and guidance on the design and application of theories of change can be found in GIZ’s guidebook “Adaptation made to measure” for the development of project-specific adaptation M&E systems (GIZ (2013b). *Adaptation made to measure: a guidebook to the design and results-based monitoring of climate change adaptation projects* (second edition). Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. <https://www.adaptationcommunity.net/monitoring-evaluation/project-level-adaptation-me>).

of the actions. Furthermore, these subjective measurements reveal insights beyond what traditional indicator-based approaches are able to deliver.<sup>33</sup> For example, they enable a direct understanding of the wider adaptation environment, including barriers and enablers, from the perspective of the beneficiaries which includes factors and relationships that are not foreseeable by outsiders.<sup>34</sup> They also reduce the burden of choosing various proxy indicators. In order to overcome their limitations regarding comparability across groups, personality traits and cognitive biases, they need to be carefully designed. The BRACED programme, funded by the Department for International Development (DFID), has developed a how-to-guide that illustrates how subjective evaluations can be collected in a robust way, using the Subjectively Evaluated Resilience Score (SERS) approach.<sup>35</sup> Such evaluations are often designed around resilience, as suggested by GIZ and UNU<sup>36</sup>, and the questions that beneficiaries are asked can be tailored to the intended M&E purpose.

42. Conducting surveys via mobile phones provides the opportunity to generate real-time and high-frequency monitoring results as opposed to information obtained through traditional household surveys which are time-consuming and expensive and therefore conducted on much lower frequencies. As mobile phones are widespread in most countries, this method is able to reach a large number of beneficiaries. A how-to-guide on mobile phone surveys in situations of post-disaster recovery has been developed by von Engelhardt & Jones.<sup>37</sup>

#### 4.4. Applying country-specific adaptation M&E systems

43. As an increasing number of countries is developing national adaptation policies and plans, it is relevant for them to understand the degree of implementation and effectiveness of these plans as well as the overall national preparedness to the expected impacts of climate change. The initial guidelines for the formulation of national adaptation plans under the UNFCCC therefore request Parties under element D “Reporting, monitoring and review” “to monitor and review the efforts undertaken, and provide information in their national communications on the progress made and the effectiveness of the national adaptation plan process.”<sup>38</sup> So far, more than 50 countries have begun developing country-specific M&E systems, which vary according to national context, governance system, M&E purpose, scope and data used due to the different adaptation contexts and climate vulnerabilities (see table 1 for an overview of the development stages of national adaptation M&E systems in different countries).<sup>39</sup>

---

<sup>33</sup> Jones, L. (2019a). Resilience isn't the same for all: Comparing subjective and objective approaches to resilience measurement. *Wiley Interdisciplinary Reviews Climate Change*, 10(1), 1-19. Open access:

<https://www.onlinelibrary.wiley.com/doi/10.1002/wcc.552>; Clare, A., Graber, R., Conway, D., & Jones, L. (2017). Subjective measures of climate resilience: What is the added value for policy and programming? *Global Environmental Change*, 46, 17-22.

<sup>34</sup> Jones, L., Samman, E., Vinck, P. (2018). Subjective measures of household resilience to climate variability and change: insights from a nationally representative survey of Tanzania. *Ecology and Society*, 23(1). Open access: <https://www.ecologyandsociety.org/issues/article.php/9840>.

<sup>35</sup> Jones, L. (2019b). *A how-to guide for subjective evaluations of resilience*. BRACED Resilience Intel. <https://www.braced.org/resources/i/A-how-to%20guide-for-subjective-evaluations-of-resilience/>.

<sup>36</sup> GIZ & UNU (2014). *Assessing and Monitoring Climate Resilience from Theoretical Considerations to Practically Applicable Tools – A Discussion Paper*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. Available at: [https://www.adaptationcommunity.net/?wpfb\\_dl=233](https://www.adaptationcommunity.net/?wpfb_dl=233).

<sup>37</sup> Von Engelhardt, J., & Jones, L. (2020). *Using mobile phone surveys to track resilience and post-disaster recovery: a how-to guide*. BRACED. <https://www.braced.org/resources/i/using-mobile-phone-surveys-to-track-resilience>.

<sup>38</sup> Decision 5/CP.17, annex.

<sup>39</sup> GIZ & IISD (2014a). *Monitoring and evaluating adaptation at aggregated levels: a comparative analysis of ten systems*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. Available at:

<https://www.adaptationcommunity.net/monitoring-evaluation/national-level-adaptation/>;  
<https://www.adaptationcommunity.net/monitoring-evaluation/national-level-adaptation/examples-of-national-me-systems/>.

**Table 1. Development stages of adaptation M&E systems with country examples**

Beginning		Fully operational		
	Monitoring			Evaluation
Development stage of the M&E system	Initial steps	Advanced stage, but not completely operational yet	Fully operational and regularly reporting	Explicit evaluations of national adaptation progress
Examples	Argentina, Australia, Albania, Brazil, Cameroon, Costa Rica, Grenada, Lithuania, Mozambique, Slovakia, Sri Lanka, Thailand, Togo	Burkina Faso, Cambodia, Colombia, Kenya, Moldova, Netherlands, Philippines, South Africa, Uganda	Austria, Belgium, Finland, France, Germany, Morocco (sub-national level), Spain, Switzerland, United Kingdom	Chile, Finland, Switzerland, United Kingdom

Source: UNEP 2017. The Adaptation Gap Report 2017. United Nations Environment Programme (UNEP), Nairobi, Kenya.

Note: The table is based on available literature but may not be exhaustive. Some countries may be missing, in particular those recently working on adaptation M&E as part of their NAP process and those that have not yet reached the stage of submitting their NAP to the UNFCCC.

44. In 2015, the LEG published the PEG M&E tool for monitoring and assessing progress, effectiveness and gaps under the process to formulate and implement National Adaptation Plans.<sup>40</sup> The tool, in its current version, provides a set of generic metrics to monitor and identify gaps in the NAP process, but future extensions are planned to guide the assessment of adaptation outcomes.

45. In general, national adaptation M&E systems are more diverse and complex than methods used for project M&E since their purposes range from monitoring vulnerability over time to tracking the collective performance of a portfolio of adaptation projects. A guidebook on national adaptation M&E systems has been developed by GIZ and the International Institute for Sustainable Development (IISD) in cooperation with the Adaptation Committee and the LEG that outlines four building blocks of such systems: (i) Context (mandate for the M&E system, national climate policy landscape, climate risks (including transboundary)); (ii) Content (Purpose of the M&E, M&E approach, indicators (if any)); (iii) Institutional arrangements (how the M&E system is operated and by whom) and (iv) Communication (how M&E findings are being communicated).<sup>41</sup>

46. The International Institute for Environment and Development (IIED) has developed the tool “Tracking adaptation and measuring development (TAMD)” which aims to help countries assess the expected and actual returns of their adaptation investments and whether adaptation is keeping development on track and adaptation costs as well as benefits are distributed equitably. It can be applied at national, sub-national or even at transboundary levels and uses vulnerability and development indicators to assess whether development outcomes bring better local climate resilience, and whether that aggregates at larger scales to contribute to climate-resilient development. Scorecards are used to tailor indicators to the respective context.<sup>42</sup>

<sup>40</sup> LEG (2015). Monitoring and assessing progress, effectiveness and gaps under the process to formulate and implement National Adaptation Plans: The PEG M&E tool. Available at [https://unfccc.int/files/adaptation/application/pdf/50301\\_04\\_unfccc\\_monitoring\\_tool.pdf](https://unfccc.int/files/adaptation/application/pdf/50301_04_unfccc_monitoring_tool.pdf).

<sup>41</sup> GIZ & IISD (2015). *Developing national adaptation monitoring and evaluation systems: a guidebook*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. Available at: <https://www.adaptationcommunity.net/monitoring-evaluation/national-level-adaptation/>.

<sup>42</sup> IIED (2014). *Tracking Adaptation and Measuring Development: a step-by-step guide*. International Institute for Environment and Development (IIED). <https://pubs.iied.org/10100IIED/>; IIED (2019). *Framing and tracking 21st century climate adaptation Monitoring, evaluation and learning for Paris, the SDGs and beyond*. International Institute for Environment and Development (IIED). <https://pubs.iied.org/10202IIED/>.

47. Information from these national M&E systems can help countries in domestic planning and decision-making as well as in reporting under the Paris Agreement.<sup>43</sup> However, such systems need to be carefully designed and need to enjoy ownership among relevant agencies in order to be useful. As their development requires a large number of stakeholders to agree on purpose, methods and institutional arrangements including for data collection, it is a time- and resource-intensive endeavour.

#### 4.5. Lessons learned

48. Lessons learned from applying outcome-based M&E methodologies and using them to gain insights into the adequacy and effectiveness of adaptation include:

- a) Adequacy and effectiveness of adaptation are very context-specific and can therefore not be measured by a generic set of indicators. Instead, the assessment method must be carefully fitted to the assessment purpose;
- b) Assessments of effectiveness require a plausible cause-and-effect relationship between an adaptation action and its measured results which can be established by e.g. a theory of change approach, but not through indicators alone;
- c) Input metrics, such as amount of adaptation finance, are not suitable as indicators for the effectiveness of adaptation since they do not provide information on the actual use and effect of the resources invested;
- d) Distributional aspects need to be accounted for when assessing adequacy and effectiveness in order to determine whether a measure has had any negative (maladaptive) side effects on any group or society, including the consideration of global connections between countries in terms of transboundary ecosystems, global trade or value chains.

49. With regard to using indicators as a way of measuring effectiveness of adaptation, the following specific lessons have been learned:

- a) A comprehensive understanding of adequacy and effectiveness of adaptation cannot be based on indicators alone since they do not explain why and how change has occurred which are essential aspects of learning from specific measures;
- b) If using indicators, the following aspects need to be taken into account:
  - i. Before designing any indicators, a joint understanding of the specific adaptation context and the intended outcome of any measure by all stakeholders needs to be established;
  - ii. A variety of different adaptation indicators can be used for different purposes and their application should be balanced for any particular adaptation context while being manageable in total number;
  - iii. The indicators need to be tailored to the specific M&E purpose and context and they must be scrutinized for their ability to demonstrate the adequacy and effectiveness of the adaptation measure instead of demonstrating adaptation (given that the adequacy and effectiveness might be different in different contexts or for different social groups) or other influencing factors;<sup>44</sup>
  - iv. The indicators must be designed so as to inform on outcomes (= what has changed) instead of on outputs (= what has been done);

---

<sup>43</sup> Leiter, T., et al. (2017). Country-specific assessments of adaptation progress. In: UNEP: *The Adaptation Gap Report 2017: Towards Global Assessment* (pp. 23-33). United Nations Environment Programme (UNEP), Nairobi, Kenya.

<sup>44</sup> A repository of adaptation indicators is contained in GIZ & IISD (2014b). *Repository of Adaptation Indicators: real case examples from national Monitoring and Evaluation Systems*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. Available at: <https://www.adaptationcommunity.net/monitoring-evaluation/national-level-adaptation/> which is part of the GIZ Adaptation M&E Toolbox available at <https://www.adaptationcommunity.net/monitoring-evaluation/>.

- v. They need be drawn from strong, sound data sources and provide data that can easily be converted into information and knowledge that suits the assessment's use.
- c) The practice of designing indices by combining multiple indicators into a single number, e.g. vulnerability indices to rank countries according to their level of vulnerability, makes the interpretation of the resulting figure for the purpose of assessing effectiveness or the appropriate level of funding very difficult and therefore does not seem to be a suitable approach in this regard;
- d) In general, indicators provide a data and information base for evaluations, but it is the interpretation and critical analysis of that data, at best through participatory approaches like the exchange with beneficiaries on why the values of indicators have changed over time, that results in information, knowledge and learning which can ultimately provide feedback for policy-making.<sup>45</sup>

50. The described outcome-based approaches offer suitable ways of determining adequacy and effectiveness of adaptation, either applied separately or in combination, at various levels. A more widespread application of these approaches by all actors that promote, implement and fund adaptation could lead to a better understanding of how adaptation works which could in turn inform and improve the practice of future adaptation actions.

#### 4.6. Gaps and challenges

51. As highlighted in the submissions, assessing the adequacy and effectiveness of adaptation poses methodological challenges given that:

- a) There are close interlinkages and overlap between adaptation actions and actions taken to achieve sustainable development, making it difficult to exactly define the climate adaptation component;
- b) Adaptation happens in complex and dynamic settings in which many other factors may contribute to adaptive socio-economic behaviour, making it difficult to identify the share that an adaptation measure has had of any specific outcome;
- c) Different assumptions may be made regarding the counterfactual (hypothetical scenario on what would have happened without the adaptive measure) leading to different evaluations of effectiveness;
- d) The adequacy and effectiveness of a measure need to be calibrated against the actual level of climate risk, which might change during the lifetime of the measure or after its completion due to unpredictable socio-economic developments and uncertain future hazards;
- e) Different societies or groups of people have diverse risk preferences and therefore evaluate the effectiveness of a measure differently;
- f) The same measure might be effective in one location (e.g. extracting more water from a river upstream), but have negative impacts on another (e.g. communities downstream or even in locations across national borders) either in the short-term or even after years;
- g) Adaptation actions may take different forms and have different effects subject to the geographical level at which they are taken;
- h) Some adaptation measures take a long time to unfold their full benefits.<sup>46</sup>

<sup>45</sup> The community of practice Earth-Eval has developed the "Good Practice Study on Principles for Indicator Development, Selection, and Use in Climate Change Adaptation Monitoring and Evaluation" which documents good practices and related principles for the development, selection, and use of indicators used in M&E of adaptation interventions. The study also presents a good overview on commonly used frameworks and approaches to M&E of adaptation. It is available at <https://eartheval.org/sites/ceval/files/studies/Good-Practice-Study.pdf>.

<sup>46</sup> A more detailed discussion of the methodological challenges of assessing the adequacy and effectiveness of adaptation is available in GIZ & WRI (2011). *Making Adaptation Count. Concepts and Options for Monitoring and Evaluation of Climate Change Adaptation*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.



52. In addition to methodological challenges, the following practical challenges aggravate the assessment of adequacy and effectiveness of adaptation:

- a) Lack of a widespread application of M&E approaches and methods to all adaptation activities across levels;
- b) Lack of (high-resolution) socio-economic and climate data availability, consistency, completeness, accuracy or willingness to share;
- c) Limited support for and ownership of monitoring and evaluation (M&E) after a project's lifetime leaving the long-term adaptation outcomes, including adaptive capacity built, unassessed;
- d) Lack of capacity (skills, expertise and experience, time) and coordination (e.g. among participating ministries and institutions) to undertake proper M&E leading to unreliable findings and missed chances to learn;
- e) Lack of disclosure of M&E findings to the public and cessation of project websites impeding learning.

## 5. Methodologies to review the adequacy and effectiveness of adaptation support (finance, technology, capacity-building)

53. Methodologies for reviewing adequacy and effectiveness of support have primarily been applied at the global level in the form of reviews of support mechanisms or frameworks under the Convention as well as at the fund or portfolio level by individual providers of support. Some approaches have been suggested by individual organizations.

54. Given the multidimensional definitions of the three types of support for adaptation and the fact that finance is involved in any of the three types, they are deeply entangled and, as this paper will allude to, are often an explicit component of the respective other support mechanisms. In consequence, and particularly regarding effectiveness, the review of any of the three types of support cannot be strictly separated from the respective others, but often automatically falls under the scrutiny of their review mechanisms.

### 5.1. Reviewing the effectiveness of adaptation support

55. Experience regarding the review of the effectiveness of adaptation support primarily stems from reviews under the Convention as well as from international funds and programmes. Some of these reviews, particularly those under the Convention, take a holistic approach and cover support provided for mitigation. However, the paper attempts to describe particularly those aspects that are relevant for evaluating the effectiveness of adaptation support.

#### 5.1.1. Effectiveness of financial support

56. This section introduces various mechanisms, funds and programmes that undertake reviews of the effectiveness of financial support for adaptation. It describes their overall objectives and the methodologies applied for the respective review including the overall approach, areas of focus, criteria/indicators used, stakeholders involved, and the sources and types of data and information included.

---

Available at: <https://star-www.giz.de/dokumente/bib-2011/giz2011-0219en-monitoring-evaluation-climate-change.pdf>; Bours, D., McGinn, C., and Pringle, P. (2014a). Guidance note 1: twelve reasons why climate change adaptation M&E is challenging. SEA Change CoP and UKCIP, available at: <https://www.ukcip.org.uk/wp-content/PDFs/MandE-Guidance-Note1.pdf>; Dinshaw, A., Fisher, S., McGray, H., Rai, N., & Schaar, J. (2014). *Monitoring and Evaluation of Climate Change Adaptation: Methodological Approaches*. OECD Environment Working Papers, No. 74, OECD. Available at: [https://www.oecd-ilibrary.org/environment/monitoring-and-evaluation-of-climate-change-adaptation\\_5jxrclr0ntjd-en](https://www.oecd-ilibrary.org/environment/monitoring-and-evaluation-of-climate-change-adaptation_5jxrclr0ntjd-en); Ford, J., & Berrang-Ford, L. (2016). The 4Cs of adaptation tracking: consistency, comparability, comprehensiveness, coherency. *Mitigation and Adaptation Strategies for Global Change*, 21, 839–859. Open access: <https://link.springer.com/content/pdf/10.1007%2Fs11027-014-9627-7.pdf>.

### 5.1.1.1. Financial Mechanism of the Convention

57. The objective of the Financial Mechanism (FM) of the Convention is to “provide financial resources on a grant or concessional basis, including for the transfer of technology, [...]”<sup>47</sup> with the ultimate aim of enabling developing countries to implement the provisions of the Convention.

58. The FM is subject to a review every four years. The review is undertaken according to agreed guidelines which have been amended over the years to take into account new developments, such as the establishment of the Green Climate Fund (GCF) as an additional operating entity, as well as new focus areas and criteria. The guidelines include provisions for the review of the effectiveness of the FM which relate to the following areas: (i) the conformity of the activities funded under the FM with Article 11 of the Convention and relevant policies, programme priorities and eligibility criteria established by the COP,<sup>48</sup> (ii) the provision of resources to developing country Parties under Article 4.3 of the Convention;<sup>49</sup> (iii) the consistency in financing activities and the complementarity of the FM with other sources of investment and financial flows<sup>50</sup> as well as between the operating entities<sup>51</sup> and (iv) access modalities for developing countries to the FM.<sup>52</sup>

59. Based on these objectives the guidelines contain certain criteria to review the effectiveness of the FM which relate to the effectiveness of the way financing is provided (e.g. the organizational effectiveness of the operating entities and their responsiveness to COP guidance) as well as to the effectiveness of the actual outcomes of the supported activities in terms of their contribution to the objectives of the Convention. It is interesting to note that the adequacy, predictability and timely disbursement of funds for activities in developing country Parties is regarded as a component of the FM’s effectiveness. The way adequacy is evaluated under the review is described in section 5.2.1.1. below.

60. The review of the FM draws on a variety of different sources. These include primarily the reports from Parties, including national communications, technology needs assessments, national adaptation programmes of action, and biennial reports as well as on reports and documents from the operating entities and other relevant organizations, and from the constituted bodies under the Convention.

61. While the Subsidiary Body for Implementation assisted the COP in undertaking the first four reviews, subsequent and future reviews were and will be undertaken based on expert input provided by the Standing Committee on Finance (SCF). In addition, the secretariat can be requested to prepare technical papers and reports regarding particular areas of interest. The SCF, in providing its expert input, submits quantitative as well as qualitative data and thereby draws on information from the following additional sources: (i) information from the secretariats of the operating entities of the FM; (ii) information from other constituted bodies of the Convention, including their submissions; and (iii) information from an appropriate sample of recipient countries to complement aspects where information is not fully available through sources and literature listed in the guidelines.<sup>53</sup>

62. As such, the SCF, while undertaking research in preparing its expert input to the review of the FM, assesses the entire spectrum of sources and channels of climate finance including evaluations that these sources and channels conduct themselves or mandate to independent reviewers, as described in the following sections.

### 5.1.1.2. Least Developed Countries Fund (LDCF) and Special Climate Change Fund (SCCF) of the Global Environment Facility (GEF)

63. The Global Environment Facility (GEF) is one of the operating entities of the financial mechanism of the Convention and operates, among others, two funds that have been particularly established to support

---

<sup>47</sup> Article 11, paragraph 1 of the Convention.

<sup>48</sup> Article 11, paragraph 3 (a) of the Convention.

<sup>49</sup> Guidelines for the review of the financial mechanism contained in the annex of decision 3/CP.4.

<sup>50</sup> Decision 6/CP.13, annex.

<sup>51</sup> Decision 12/CP.22, annex.

<sup>52</sup> *Ibid.*

<sup>53</sup> SCF/TP/2017/1.

adaptation. The Least Developed Countries Fund (LDCF) has the mandate to provide support to Least Developed Countries' climate change adaptation efforts, including the preparation and implementation of national adaptation programs of action (NAPAs), and the preparation of the national adaptation plan (NAP) process. The Special Climate Change Fund (SCCF)'s objective is to finance climate change activities that are complementary to other existing funds in the areas of adaptation and transfer of technologies, among others. This fund is particularly directed at developing countries that are not least developed countries. Both funds are managed according to their joint programming strategy and the related results framework.<sup>54</sup>

64. In order to evaluate the effectiveness of the activities supported by the LDCF and the SCCF the GEF applies a multidimensional approach consisting of evaluations at various levels and time intervals (see figure 1). For all these evaluations it defines effectiveness as "the extent to which the intervention achieved, or expects to achieve, results (outputs, outcomes and impacts, including global environmental benefits) taking into account the key factors influencing the results."<sup>55</sup>

65. At the project or programme level, full-sized projects and programmes are expected to deliver **midterm reviews and terminal evaluations** based on the LDCF/SCCF results-based management (RBM) framework. Through these evaluations, GEF agencies are expected to report on pre-defined indicators relating to outputs and outcomes of the activities. These include core indicators, which have been reported on over a long period of time to the LDCF/SCCF Council and thus enable continuity in reporting and important insights into the delivery of the adaptation programme as a whole. In addition, they include outcome indicators that reflect the latest LDCF/SCCF adaptation programming strategy. Apart from reporting on the indicators, these reviews are expected to deliver qualitative information such as on the impact of climate risk mainstreaming into policies and plans and on the catalytic impact of LDCF/SCCF support in leveraging finance for scale-up and replication.<sup>56</sup> This information is expected to be more meaningful in providing lessons learned,

66. At the portfolio level, the GEF secretariat prepares and submits to the LDCF/SCCF Council the **Annual Monitoring Review (AMR)**<sup>57</sup> of the LDCF and the SCCF. This is the principal tool for capturing, analysing and reporting on portfolio-level performance, actual results and lessons learned and is based on the information received from the GEF agencies on individual projects and programmes. It describes in quantitative and qualitative terms (i) the performance and results of, as well as lessons learned from, the portfolio of projects and programmes financed under the LDCF and the SCCF for the respective fiscal year, and (ii) information on management effectiveness and efficiency as it relates to the two funds.

---

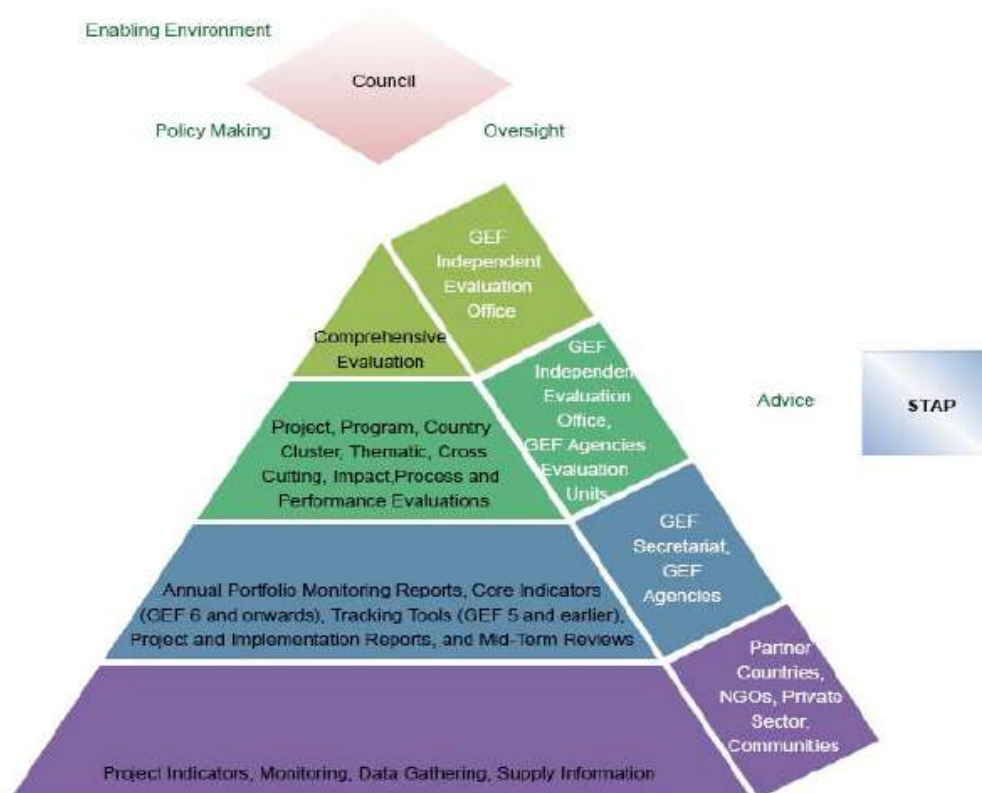
<sup>54</sup> Available at

[https://www.thegef.org/sites/default/files/documents/EN\\_GEF.LDCF\\_SCCF\\_24.03\\_Programming\\_Strategy\\_and\\_Operational\\_Policy\\_2.pdf](https://www.thegef.org/sites/default/files/documents/EN_GEF.LDCF_SCCF_24.03_Programming_Strategy_and_Operational_Policy_2.pdf).

<sup>55</sup> GEF Independent Evaluation Office. 2019. The GEF Evaluation Policy. Available at [https://www.gefio.org/sites/default/files/ieo/evaluations/files/gef-me-policy-2019\\_2.pdf](https://www.gefio.org/sites/default/files/ieo/evaluations/files/gef-me-policy-2019_2.pdf).

<sup>56</sup> For further details refer to GEF/LDCF.SCCF.25/Inf.05.

<sup>57</sup> GEF/LDCF.SCCF.26/04.

**Figure 1. Monitoring and Evaluation levels and responsible agencies in the GEF**

Source: GEF Independent Evaluation Office. 2019. The GEF Evaluation Policy. Available at [https://www.gefio.org/sites/default/files/ieo/evaluations/files/gef-me-policy-2019\\_2.pdf](https://www.gefio.org/sites/default/files/ieo/evaluations/files/gef-me-policy-2019_2.pdf).

67. In addition to these regular reviews, the Independent Evaluation Office (IEO) of the GEF<sup>58</sup> undertakes periodic (every few years) **Program Evaluations** of both the LDCF and the SCCF with the objective of providing evaluative evidence on the progress towards their objectives (including GEF Strategic Objectives and Pillars), major achievements (e.g. in reducing vulnerability and integrating adaptation into policies and processes) and lessons learned since the Funds' establishment. In undertaking the evaluations, the IEO develops a theory of change for the respective fund based on which it develops evaluative questions, methods and portfolio analysis protocols. It considers both quantitative and qualitative information from relevant project and portfolio documents as well as information from field visits and interviews with key stakeholders. Besides the effectiveness of the funds the evaluation also includes a review of the relevance, the efficiency and the sustainability of the funded activities.<sup>59</sup>

68. Besides these direct evaluations of individual adaptation projects and the LDCF/SCCF programmes, conclusions and evaluative evidence on adaptation is also generated through other evaluation streams conducted by the IEO or other GEF stakeholders, each having their specific perspective and focus. These

<sup>58</sup> The IEO is directly accountable to the GEF Council and has the mandate to report on the performance and effectiveness of GEF projects and programmes.

<sup>59</sup> See, for example, GEF/LDCF.SCCF.22/ME/02; GEF. Independent Evaluation Office. 2016. Program Evaluation of the Least Developed Countries Fund. Available at <https://www.gefio.org/sites/default/files/ieo/evaluations/files/ldcf-2016.pdf> and GEF. Independent Evaluation Office. 2020. Update of the Program Evaluation of the Least Developed Countries Fund. (forthcoming). Available at <https://www.gefio.org/evaluations/2020-update-program-evaluation-least-developed-countries-fund-ldcf>.

include *country level evaluations, performance evaluations, thematic evaluations or Overall Performance Studies of the GEF*.<sup>60</sup>

69. Through these various forms of evaluations, the effectiveness of adaptation support provided by the GEF is looked at from different angles, including not only the actual adaptation outcomes and impacts of the funded projects and programmes but also the performance of the GEF regarding its adaptation strategies, programming principles and procedures as steered by COP guidance, including with regard to the enhancement of country ownership, specific country and/or thematic allocations, gender equality or the complementarity of SCCF/LDCF funds with other funds inside and outside the GEF, among others.

### 5.1.1.3. Adaptation Fund

70. The Adaptation Fund (AF) has been established to finance concrete adaptation projects and programmes in developing country Parties to the Kyoto Protocol that are particularly vulnerable to the adverse effects of climate change. The evaluation of effectiveness under the AF refers to the question whether or not actual project outcomes are commensurate with the original or modified project objectives and whether or not this is a result of adaptive management.

71. The process to review the effectiveness of support provided through the AF is similar to that of the GEF LDCF/SCCF.

72. At the project/programme level implementing entities (IEs) of the AF are required to submit to the Adaptation Fund Board (AFB) an **annual project/programme performance report (PPR)** and a **final project completion report**. As part of these reports they submit quantitative as well as qualitative information on outputs and outcomes which are aligned with the Fund's Strategic Results Framework.<sup>61</sup> Similar to the approach of the GEF LDCF/SCCF they are required to report on core indicators, outcome indicators and qualitative information, for example, with regard to the effects of taking into account gender issues or the way effective resilience measures could be scaled up.

73. In addition to these progress reports, IEs are required to submit a **mid-term evaluation** (for projects with more than four years of implementation) and a **final evaluation**, both conducted by an independent team of consultants that the IE selects. The final evaluations provide a comprehensive and systematic description of the performance of a completed project or programme by evaluating, among others, the achievement of its intended outcomes and objectives according to the criteria "relevance", "effectiveness" and "efficiency" and providing respective ratings. The methodology applied should involve the generation of qualitative information obtained through field visits and interviews putting particular emphasis on assessing the perspectives of the various relevant stakeholders and beneficiaries.

74. Based on the information provided by IEs on individual projects/programmes the AF secretariat publishes an **Annual Performance Report**. This report presents the Fund's core indicators aggregated for the portfolio and by region. It also illustrates advances in the four areas of the Adaptation Fund Level Effectiveness and Efficiency Results Framework which relate to the management of the fund.<sup>62</sup> In addition, it reports both quantitative and qualitative information on activities and achievements under the cross-cutting themes of the respective medium-term strategy (MTS). Advances under these themes also shed light on the effectiveness of the Fund to reach its objectives.

75. Since 2012 the AF applies an additional approach to collect insights and lessons learned from the activities it funds in various countries. This approach is called **Portfolio Monitoring Missions (PMMs)** and consists of learning missions to various project sites in different countries with the aim of collecting tangible results and experience. These are then systemized to serve as valuable lessons for the Fund's Knowledge Management Strategy, partners and beneficiaries as well as practical guidance for implementing entities to enhance their project effectiveness. Collecting such lessons and best practices forms part of the "Learning and Sharing" pillar which is one of the strategic priorities of the AF's Mid Term Strategy.

---

<sup>60</sup> [https://www.gefio.org/sites/default/files/ieo/evaluations/files/gef-me-policy-2019\\_2.pdf](https://www.gefio.org/sites/default/files/ieo/evaluations/files/gef-me-policy-2019_2.pdf).

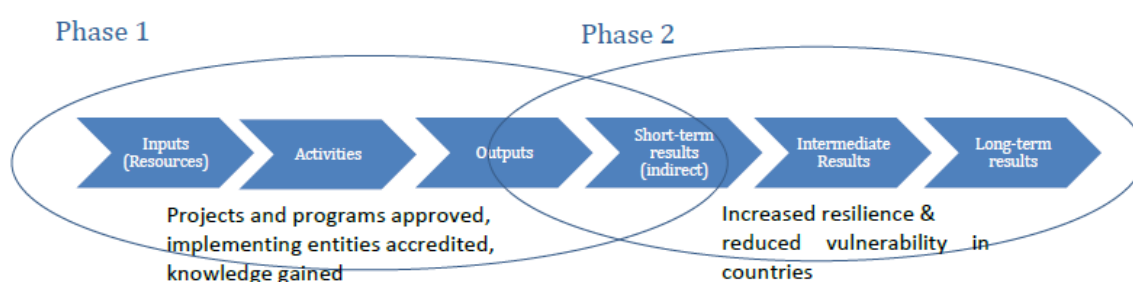
<sup>61</sup> Review of the Strategic Results Framework and the Adaptation Fund Level Effectiveness and Efficiency Results Framework. AFB/EFC.24/4/Rev.1.

<sup>62</sup> See annex I and for further details on the framework refer to document AFB/EFC.24/4/Rev.1.

76. Finally, one **overall evaluation** has been conducted by an independent group of consultants in order to evaluate the overall Adaptation Fund's performance. The evaluation was split into two phases due to the immaturity of the fund at the beginning of the evaluation. The first phase focused on the AF's operational performance against the Fund's design and implicit logic (institutional design and processes)<sup>63</sup> and the second on the long-term outcomes and impacts of the AF's interventions (see figure 2).<sup>64</sup> Both applied the OECD-DAC evaluation criteria<sup>65</sup> of relevance, efficiency, effectiveness and sustainability and developed a theory of change to arrive at their evaluation matrix.

77. Both evaluations applied a mixed-method approach to collect data for their assessments including a structured literature review of internal and external documents (e.g. project performance reports, evaluation reports), stakeholder interviews and focus group discussions as well as evaluation missions or field studies. The phase I evaluation also conducted a survey.

**Figure 2. Phase I and Phase II of the Overall Evaluation of the Adaptation Fund.**



Source: Adaptation Fund. 2015. Evaluation of the Fund (Stage I). AFB/EFC.17/3. Available at <https://www.adaptation-fund.org/wp-content/uploads/2015/09/AFB.EFC.17.3-Evaluation-of-the-Fund-stage-I1.pdf>.

#### 5.1.1.4. Pilot Programme for Climate Resilience<sup>66</sup>

78. The Pilot Programme for Climate Resilience (PPCR) is one of the programmes of the Climate Investment Fund (CIF). It supports developing countries and regions in building resilience to the impacts of climate change through the development and implementation of a country-wide Strategic Programme for Climate Resilience (SPCR) composed of several individual projects or programmes.<sup>67</sup> The CIF tracks the performance of the PPCR with a focus on learning as much as on tracking programme results. It also uses a multi-level approach.

79. Based on the PPCR results framework, every PPCR country that implements a Strategic Programme for Climate Resilience is required to report annually on five core indicators which are meant to reflect the expected transformation process taking place in PPCR countries. The core indicators reflect national-level results but may be aggregated from project-level results for some indicators. They range from the number of beneficiaries, over the degree of mainstreaming and use of PPCR-supported tools to evidence of strengthened government capacity.

<sup>63</sup> Available at <https://www.adaptation-fund.org/wp-content/uploads/2015/09/AFB.EFC.17.3-Evaluation-of-the-Fund-stage-I1.pdf>.

<sup>64</sup> Available at <https://www.adaptation-fund.org/wp-content/uploads/2018/03/AFB.EFC.22.9-Evaluation-of-the-Fund-Phase-II.pdf>.

<sup>65</sup> OECD. 2002. Glossary of Key Terms in Evaluation and Results Based Management, Paris: OECD Publishing. Available at <http://www.oecd.org/dac/evaluation/2754804.pdf>

<sup>66</sup> Information in this section is based on the following sources: CIF. 2018. PPCR Monitoring and Reporting Toolkit. Available at: [https://www.climateinvestmentfunds.org/cif\\_enc/sites/cif\\_enc/files/knowledge-documents/ppcr\\_en\\_monitoringreporting\\_toolkit.pdf](https://www.climateinvestmentfunds.org/cif_enc/sites/cif_enc/files/knowledge-documents/ppcr_en_monitoringreporting_toolkit.pdf) and the website of the CIF's Evaluation & Learning Initiative ([https://www.climateinvestmentfunds.org/cif\\_enc/evaluation-and-learning](https://www.climateinvestmentfunds.org/cif_enc/evaluation-and-learning)).

<sup>67</sup> <https://www.climateinvestmentfunds.org/topics/climate-resilience>

80. Subject to whether the indicator is qualitative or quantitative in nature, data is collected by using either scorecards or tables, respectively. Annual scoring workshops are conducted by the PPCR country to assess SPCR progress against the five core indicators with the participation of representatives from all levels of government, the private sector and civil society. These stakeholders assist in establishing country-specific scoring criteria and subsequently in evaluating SPCR performance based on information and data provided by the PPCR country focal point and individual project managers. As each country agrees on its own individual scoring criteria, the monitoring and reporting (M&R) system respects differences in the way countries aim to reach their target outcomes. Results of the scoring workshop on all five indicators, complemented by narrative descriptions, are then submitted as an **annual country results report** to the CIF Administrative Unit.

81. This stream of annual data collection and reporting is complemented by another which is undertaken by the Multilateral Development Bank (MDB) supporting the respective PPCR process. MDBs are required to provide annual, more granular project-level results and data collected and reported using its own implementation status or equivalent reports. This complementary reporting is intended to provide a more comprehensive picture of PPCR performance throughout the programme cycle.<sup>68</sup>

82. Country reporting from all PPCR countries is aggregated by the CIF Administrative Unit and, together with the MDB reporting, included in the synthesis **PPCR annual operation and results report** submitted to the PPCR Sub-Committee. Besides the cumulative achievements of the PPCR portfolio, including how it addressed the most vulnerable and the poor, these reports include information on PPCR management effectiveness.

83. Through the scoring workshops, this M&R process ensures country-ownership and promotes participation, capacity-building, and information sharing. It further encourages the use of mixed methods by combining quantitative and qualitative methods to collect and analyse data.

84. Results and lessons from the PPCR programme regularly feed into or are included in activities and studies under the CIF's Evaluation & Learning Initiative which aims at providing strategic and demand-driven information for the CIF and the wider climate finance sector. These evaluations are conducted by independent reviewers and include document analysis, interviews, surveys and field visits.

### **5.1.2. Effectiveness of support provided in the form of technology development and transfer**

85. Adaptation technologies are defined by the UNFCCC as “the application of technology in order to reduce the vulnerability, or enhance the resilience, of a natural or human system to the impacts of climate change.”<sup>69</sup> Further to this overall definition, it has become common to distinguish adaptation technologies into the following three categories: (i) hardware (capital goods and equipment), software (capacity and processes involved in the use of technology such as knowledge, training and awareness-raising) and orgware (ownership and institutional arrangements).<sup>70</sup>

86. Given this broad definition, it is apparent that the review of effectiveness of adaptation support provided in the form of technology development and transfer cannot be strictly separated from the reviews of the two other means of implementation and is often covered by them. However, two types of reviews under the Convention focus specifically on the effectiveness of technology support, including for adaptation.

#### **5.1.2.1. Activities in relation to Article 4, paragraph 5 of the Convention**

87. Article 4, paragraph 5, of the Convention calls on developed country Parties and other developed Parties included in Annex II to “take all practical steps to promote, facilitate and finance, as appropriate, the

---

<sup>68</sup> Apart from the required annual country and MDB reports, countries and MDBs develop their own results frameworks for each individual project and/or the PPCR process as a whole using their pre-existing M&E systems.

<sup>69</sup> UNFCCC (2010). Report of the Conference of the Parties on its Sixteenth Session, held at Cancun from 29 November to 10 December 2010, Addendum, Part Two: Action taken by the Conference of the Parties.

<sup>70</sup> UNEP. 2014. The Adaptation Gap Report. A Preliminary Assessment Report. Available at <https://www.unenvironment.org/resources/adaptation-gap-report>

transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention. [...].”

88. To give further effect to this article, Parties to the UNFCCC established the framework for meaningful and effective actions to enhance the implementation of Article 4, paragraph 5, of the Convention (the technology transfer framework).<sup>71</sup> The framework covers the following key themes: (i) technology needs and needs assessments; (ii) technology information; (iii) enabling environments; (iv) capacity-building; and (v) mechanisms for technology transfer. At a later stage, the framework was enhanced through an additional set of actions.<sup>72</sup>

89. In 2010 the secretariat undertook a review and assessment of the effectiveness of the implementation of Article 4, paragraph 5, based on the following two inputs:

- a) Draft terms of reference for the review and assessment of the effectiveness of the implementation of Article 4, paragraph 5, prepared by the Chair of the SBI in 2008 which covered, among others, the following topics: (i) the extent to which the actions and activities under Article 4, paragraph 5 and the technology transfer framework had been implemented, including the adequacy and timeliness of financial support provided; (ii) lessons learned from, and good practices in, the implementation of that Article and decisions regarding the framework; and (iii) the challenges faced and the remaining gaps identified in their implementation;
- b) A set of 40, primarily quantitative, performance indicators, developed by the then Expert Group on Technology Transfer (EGTT), which covered both the component themes of the technology transfer framework as well as the financial flows provided for technology transfer.<sup>73</sup>

90. As part of the review, the secretariat was tasked to undertake the following activities:

- a) Review the extent to which actions have promoted and supported institutional systems and regulatory and legislative frameworks needed to scale up development and transfer of technologies;
- b) Review the range of practical actions taken and identify possible actions to promote innovative public and/or private partnerships and cooperation with the private sector, and consider steps that governments, the business sector and academia can take to facilitate effective participation by the private sector;
- c) Review the mechanisms and processes developed to enhance cooperation with relevant intergovernmental processes;
- d) Review efforts to promote collaborative research on, and development and deployment of, technologies for mitigation and adaptation;
- e) Review the adequacy and timeliness of the financial support provided, within the context of Article 4, paragraphs 1(c) and 5, for the purposes of development and transfer of technologies, the related activities and their results.

91. The secretariat assessed the practical steps taken by Parties and relevant organizations in the process of the development and transfer of technologies in these areas and identified lessons learned, good practices, challenges faced and remaining gaps. It based its assessment on an analysis of various information sources, partly guided by the performance indicators, and an online survey as well as a written questionnaire.<sup>74</sup>

---

<sup>71</sup> Decision 4/CP.7.

<sup>72</sup> Decisions 3 and 4/CP.13.

<sup>73</sup> The full report is available in FCCC/SB/2009/4. The report on the indicators also included an overview on the selection and testing process, a description of the data required for each indicator and valuable lessons learned and recommendations.

<sup>74</sup> The report of the review is contained in document FCCC/SBI/2010/INF.4.



92. The efforts undertaken to review the implementation of Article 4, paragraph 5 and the technology transfer framework also informed negotiations under the AWG-LCA which, at the end of its work in 2010/2011, established the new Technology Mechanism composed of the Technology Executive Committee (TEC) and the Climate Technology Centre and Network (CTCN), both of which succeeded previous institutional arrangements related to the implementation of Article 4, paragraph 5 and the technology transfer framework under the Convention.

### **5.1.2.2. Technology Mechanism**

93. With the creation of the Technology Mechanism, new forms of reporting and review have been established. For example, both the TEC and the CTCN are requested to submit a joint annual report to the COP, based on which the COP, through the SBI regularly assesses progress made towards their set targets.<sup>75</sup>

94. In addition, the terms of reference for the CTCN include a request to the secretariat, to periodically commission an independent review of the effective implementation of the CTCN.<sup>76</sup> The first independent review of the CTCN was undertaken in 2017 and included a quantitative and qualitative assessment of the effectiveness of the implementation of its core services relating to knowledge management, peer learning, capacity-building, technical assistance and networking. The review of effectiveness was based on a series of sub-questions and on a literature review as well as stakeholder interviews and surveys with national designated entities, network members and beneficiaries. However, given the recent establishment of the CTCN, the review focused on outputs (e.g. extent to which requests for technical assistance related to both mitigation and adaptation technologies were responded to in due time) and not yet on outcomes or impacts of its work.<sup>77</sup>

95. By decision 1/CP.21, paragraph 69, the COP decided “to undertake a periodic assessment of the effectiveness and adequacy of the support provided to the Technology Mechanism in supporting the implementation of the Paris Agreement on matters relating to technology development and transfer”. The SBI, in elaborating the scope of and modalities for the assessment, took into account the review of the CTCN, the modalities for the global stocktake, the work on the transparency of action and support as referred to in Article 13 and the elaboration of the technology framework established under Article 10, paragraph 4, of the Paris Agreement. The CMA adopted the scope and modalities for the periodic assessment at its first session<sup>78</sup> and decided that its outcomes should serve as an input to the global stocktake.<sup>79</sup> According to this decision, the scope of the assessment will cover the effectiveness of the Technology Mechanism and the adequacy of support provided to it as two separate elements. The assessment of the effectiveness will cover the impact, outputs and outcomes of the TM.

### **5.1.3. Effectiveness of capacity-building support**

96. Similar to the review of support in the form of technology development and transfer, capacity-building support is frequently provided and thus reviewed in conjunction with the two other means of implementation. However, the Convention has established one specific review mechanism that focuses on the effectiveness of capacity-building support. The following section summarizes the mechanism.

#### **5.1.3.1. Framework for capacity-building in developing countries**

97. The framework for capacity-building in developing countries (CB framework) has been established by Parties to the UNFCCC to guide capacity-building activities related to the implementation of the Convention and effective participation in the Kyoto Protocol process.<sup>80</sup> The scope of capacity-building needs and areas that are to be addressed under the framework includes several that relate to the implementation of adaptation activities, ranging from institutional capacity building and reporting to more concrete capacities

---

<sup>75</sup> Decision 1/CP.16, paragraph 117.

<sup>76</sup> Decision 2/CP.17, annex VII, paragraph 20.

<sup>77</sup> The sub-questions as well as indicators and data sources for the review of effectiveness are contained in annex IV of document FCCC/CP/2017/3.

<sup>78</sup> Decision 16/CMA.1, annex.

<sup>79</sup> Decision 16/CMA.1, paragraph 4.

<sup>80</sup> Decision 2/CP.7. Note that decision 3/CP.7 established a capacity-building framework particularly for countries with economies in transition. However, this framework will not be addressed in this paper as the aspects focusing on adaptation are similar.

regarding vulnerability and adaptation assessments and adaptation implementation. In addition, it includes specific areas for capacity-building in least developed countries, of which several also relate to adaptation.

98. The implementation of the framework is to be driven by contributions of both developing and developed country Parties. Developing country Parties are asked to identify and clearly communicate their needs, promote South-South cooperation and stakeholder participation, including from the private sector, and promote the sustainability of the activities undertaken. Developed country Parties are requested to provide additional financial and technical resources and to respond to the communicated needs, with particular attention to least developed countries and small island developing States. The operating entities of the financial mechanism as well as other organizations and the private sector are requested to support the implementation of the framework, including through the provision of financial resources.

99. The COP, through the SBI, regularly (every 5 years) monitors and reviews the progress in the implementation of the framework and the effectiveness of the capacity-building activities,<sup>81</sup>

100. Based on successional decisions regarding the monitoring and evaluation of the CB framework and lessons from previous reviews, the scope of sources that it takes into account has been gradually expanded and includes information from Parties, including from NAPAs and NAPs, synthesis reports on the implementation of the framework prepared by the secretariat, reports from the operating entities of the FM and other organizations, reports from CB meetings and workshops and findings of previous reviews.<sup>82</sup> It also takes into account information generated through interviews, surveys and focussed discussions with relevant national focal points.

101. Based on these sources the secretariat prepares comprehensive reports as input to the reviews providing primarily qualitative information. This includes lessons learned, successes and challenges, on, for instance, factors that generally influence the effectiveness of CB activities as well as on capacity-building activities that specifically target adaptation.

102. Over time, the COP/SBI, in undertaking the reviews, enhanced its understanding of the key factors that contribute to effective CB and subsequently used these factors as indicators for effective CB in subsequent reviews. In addition, after the first comprehensive review, it initiated a process to develop a monitoring and evaluation framework for capacity-building. The process was based on CB indicators developed by UNDP/GEF<sup>83</sup> and subsequently involved a series of papers, submissions, workshops and expert meetings to discuss the use of and experience with performance indicators for the M&E of capacity-building at various levels, including regarding capacity-building for adaptation.<sup>84</sup> However, so far, the SBI/COP has not been in a position to conclude on general performance indicators but rather noted that the M&E needs to be context-specific.

103. In 2011 the Durban Forum was established to provide an additional input to the reviews of the implementation of the CB framework.<sup>85</sup> It is an annual in-session event aiming at further enhancing the monitoring and review of the effectiveness of capacity-building and bringing together a large spectrum of stakeholders that discusses and shares experiences. So far, several of the Durban Forum's themes have implicitly or explicitly covered capacity-building for adaptation, including, for example, "Building capacity to mitigate and adapt to climate change - success stories and innovative approaches" and "Enhancing capacities for adaptation in the context of National Adaptation Plans (NAPs) and Nationally Determined Contributions (NDCs)".

104. In 2015, the COP established the Paris Committee on Capacity-building whose aim will be to address gaps and needs, both current and emerging, in implementing capacity-building in developing country Parties and to further enhance capacity-building efforts, including with regard to coherence and

---

<sup>81</sup> Decision 2/CP.7.

<sup>82</sup> For a full list of sources refer to annex III.

<sup>83</sup> United Nations Development Programme/Global Environment Facility. Capacity Development Indicators. UNDP/GEF Resource Kit (No. 4). November 2003 and summarized in document FCCC/SBI/2009/5.

<sup>84</sup> A synthesis of the information generated through these events is contained in document FCCC/SBI/2009/5.

<sup>85</sup> Decision 2/CP.17, paragraph 144.

coordination in capacity-building activities under the Convention.<sup>86</sup> The COP also requested the Committee to annually focus on an area or theme related to enhanced technical exchange on capacity-building, with the purpose of maintaining up-to-date knowledge on the successes and challenges in building capacity effectively in a particular area.<sup>87</sup> Outcomes of the comprehensive reviews of the implementation of the capacity-building framework will, among others, provide input to the work of the Committee which will prepare annual technical progress reports on its work, including on its annual focus area.<sup>88</sup>

## 5.2. Reviewing the adequacy of adaptation support

105. Several approaches exist to assess the adequacy of adaptation support which compare needs with the availability of support. By nature, these differ in substance and scope subject to whether support is provided in the form of finance, technology development and transfer, or capacity-building.

### 5.2.1. Adequacy of financial support

106. Existing approaches to review the adequacy of financial support for adaptation include the following:

#### 5.2.1.1. Financial Mechanism of the Convention

107. In the early years of the financial mechanism the adequacy of funding required by developing countries to implement the provisions of the Convention was determined by the COP by comparing funding needs (based on information from national communications and country programming on mitigation and adaptation) with the funding available via the operating entities. Ever since methodologies to determine climate, including adaptation, finance needs and actual finance flows to allow for an evaluation of the adequacy of financial support have gradually been refined.

108. In terms of determining **climate finance needs**, for example, in preparation of the third and fourth review of the financial mechanism (FM), the secretariat was requested by the COP to prepare a report and a technical paper, respectively, on experiences of international funds and multilateral financial institutions relevant to the current and future investment needs of developing countries in meeting their commitments under the Convention, including on financial flows from private sector sources.<sup>89</sup> In addition, as part of its consideration of the fourth review, the SBI requested the secretariat “to provide, upon request, information to non-Annex I Parties on the assessment of financing needs to implement mitigation and adaptation measures.”<sup>90</sup> In response, the secretariat developed the National Economic, Environment and Development Study (NEEDS) for Climate Change Project to identify key sectors for mitigation and adaptation measures, corresponding finance needed and received as well as appropriate financial and regulatory instruments to support these measures in eleven participating countries.<sup>91</sup> The methodology used was based on the objective to promote country ownership and included extensive consultations with national-level and sector-level stakeholders and experts.

109. As part of negotiations on long-term finance, in 2017, the secretariat was requested, “in collaboration with the operating entities of the Financial Mechanism, United Nations agencies and bilateral, regional and other multilateral channels, to explore ways and means to assist developing country Parties in assessing their needs and priorities, in a country-driven manner, including technological and capacity-building needs, and in translating climate finance needs into action.”<sup>92</sup> In response, the secretariat launched the Needs-based Finance (NBF) project with the objective of facilitating access and mobilization of climate finance for the implementation of priority mitigation and adaptation projects to address the needs identified by developing countries which was subsequently implemented as regional and national projects in over 100 countries.<sup>93</sup> The methodology applied to identify climate finance needs and priorities included a review of

<sup>86</sup> Decision 1/CP.21, paragraph 71.

<sup>87</sup> Decision 1/CP.21, paragraph 74.

<sup>88</sup> Decision 1/CP. 21, paragraph 79 and

<sup>89</sup> FCCC/SBI/2005/INF.7 and FCCC/TP/2007/4.

<sup>90</sup> FCCC/SBI/2008/8.

<sup>91</sup> For further information on the NEEDS project, refer to <https://unfccc.int/topics/climate-finance/workstreams/determination-of-the-needs-of-developing-country-parties-related-to-implementing-the-convention-and-national-economic-environment-and-development-study-needs-for-climate-change-project>.

<sup>92</sup> Decision 6/CP.23, paragraph 10.

<sup>93</sup> For further information on the NBF project, refer to [https://unfccc.int/NBF\\_Project](https://unfccc.int/NBF_Project).

official national reports and other relevant documents (e.g. Biennial Update Reports, NAPs, NAPAs, National Communications, NDCs, TNAs, country programmes of climate funds and MDBs, climate strategies), as well as relevant national and regional documents and the engagement with representatives from national climate/environment and finance ministries, as well as regional climate finance institutions, relevant stakeholders and experts for consultation and validation.

110. In 2018, the SCF was requested by the COP to prepare, every four years, a report on the determination of the needs, including but not limited to financial needs, of developing country Parties related to implementing the Convention and the Paris Agreement, for consideration by the COP and the CMA, starting in 2020, and in collaboration, as appropriate, with the operating entities of the FM, the subsidiary and constituted bodies, multilateral and bilateral channels, and observer organizations.<sup>94</sup> The SCF has developed a workplan for the finalization of the first report which includes desk reviews, the involvement of a wide range of stakeholders that are expected to provide data, information and experience and specific outreach events such as webinars, technical expert meetings and a call for evidence to gather inputs from stakeholders that have undertaken work on the determination of needs, covering data availability and gaps, and information on methodologies and approaches.<sup>95</sup>

111. Also in 2018, “the AC, in collaboration with the LEG, partner organizations of the Nairobi work programme, users and developers of relevant methodologies, including academia and the private sector, was requested by the CMA to develop by June 2020 and to regularly update an inventory of relevant methodologies for assessing adaptation needs, including needs related to action, finance, capacity-building and technological support in the context of national adaptation planning and implementation, and to make the information available on the adaptation knowledge portal.<sup>96</sup> Although not directly mandated in the context of the review of the FM, the work under this mandate will contribute to the identification of adaptation finance needs of developing countries and may therefore assist in reviewing the adequacy of adaptation support. A pilot inventory is available on the Adaptation Knowledge Portal<sup>97</sup> which is currently being finalized and will be updated regularly.

112. In terms of determining the **availability of climate finance**, the Biennial Assessment and Overview of Climate Finance Flows (BA), which has been prepared every two years by the SCF since 2014, now represents the most comprehensive assessment under the Convention. The COP had initially requested the SCF to prepare the report based on available sources of information, and including information on the geographical and thematic balance of flows.<sup>98</sup> Subsequently, the mandate was expanded to also consider relevant work by other bodies and entities of the measurement, reporting and verification (MRV) of support and the tracking of climate finance,<sup>99</sup> ways of strengthening methodologies for the reporting,<sup>100</sup> and ongoing technical work on operational definitions of climate finance, including private finance mobilized by public interventions, to assess how adaptation and mitigation needs can most effectively be met by climate finance.<sup>101</sup> In response, the SCF now bases the preparation of the BA report not only on an extensive review of climate finance data sources, but also organizes technical meetings and other forms of consultation with experts in the field in order to assess and support the constant efforts of improving reporting and tracking methods as well as approaches to identify the full scope of finance that supports mitigation and adaptation efforts and to harmonize existing data sets.<sup>102</sup>

---

<sup>94</sup> Decision 4/CP.24, paragraph 13 and 14.

<sup>95</sup> [https://unfccc.int/sites/default/files/resource/Workplan\\_2020NeedsReport.pdf](https://unfccc.int/sites/default/files/resource/Workplan_2020NeedsReport.pdf).

<sup>96</sup> Decision 11/CMA.1, paragraph 15.

<sup>97</sup> <https://www4.unfccc.int/sites/NWPStaging/Pages/SearchAsses.aspx>

<sup>98</sup> Decision 2/CP.17, paragraph 121 (f).

<sup>99</sup> Decision 1/CP.18, paragraph 71.

<sup>100</sup> Decision 5/CP.18, paragraph 11.

<sup>101</sup> Decision 3/CP.19, paragraph 11.

<sup>102</sup> UNFCCC Standing Committee on Finance. 2018. Biennial Assessment and Overview of Climate Finance Flows.

Technical Report. Available at

<https://unfccc.int/sites/default/files/resource/2018%20BA%20Technical%20Report%20Final%20Feb%202019.pdf>.

Information on the work of the SCF on MRV of support beyond the BAs is available at

113. The Biennial Assessment report now includes information on global total climate finance flows, including private and public, international and domestic, and South-South cooperation on climate finance as well as flows from developed to developing countries, including multilateral and bilateral. For the former, sources include e.g. the Global Landscape of Climate Finance by the Climate Policy Initiative and for the latter, sources include primarily the reports from the operating entities of the FM, the common tabular format (CTF) tables of the biennial reports, and Annex I National Communications, complemented by reports from MDBs and other multilateral climate funds attributable to Annex II Parties, such as the Adaptation Fund, data from the OECD-DAC Creditor Reporting System, and the International Development Finance Club (IDFC) as well as information on mobilized private finance flows in developing countries from MDBs, IDFC and OECD.<sup>103</sup>

#### 5.2.1.2. UNEP Adaptation Finance Gap Report<sup>104</sup>

114. The 2016 UNEP Adaptation Finance Gap Report explores the costs of meeting adaptation needs in developing countries and assesses the funding that is available for doing so in order to identify a potential gap between the two and thus the adequacy or inadequacy of financial support. It bases its methodology on the conceptual framework developed for the 2014 Adaptation Gap Report,<sup>105</sup> which assumed that an adaptation goal can be established for each area of interest (finance, technology, knowledge) and subsequently identified whether there exist a gap between the adaptation levels that would be consistent with the goal at a given point in time and the actual levels achieved through the implementation of adaptation measures. In case of adaptation finance, the framework sets out to assess the costs of reaching a societally set adaptation target or goal and the amount of finance available. Thereby, the target or goal would reflect nationally determined needs related to climate change impacts, as well as resource limitations and competing priorities.<sup>106</sup>

115. With regard to estimating the **costs to meet adaptation needs** in developing countries, the report is based on existing literature. It reviews global-level model estimates (top-down estimates), which calculate costs by relating total impacts with impact damages, at the global level and on the basis of a sectoral breakdown of cost elements,<sup>107</sup> and national-level estimates (bottom-up studies) which calculate costs by adding up the costs of each of the measures in a specific, pre-determined portfolio of adaptation actions. Thereby, particular attention is paid to the bottom-up estimates, since the global, top-down studies arrive at very different estimates due to a lack of empirical evidence on the relationship between greenhouse-gas emissions, impacts and the effectiveness of adaptation as well as a lack of experience in determining the values of the model parameters. The bottom-up estimates are based on a number of multi-country initiatives on adaptation needs and related costs<sup>108</sup> and a growing number of individual country or sector studies, including information from several nationally determined contributions (NDCs).

116. The determination of **available adaptation finance** focuses on public financial flows, primarily from developed to developing countries, committed through the following providers: (i) development finance institutions (multi-lateral, bilateral, national and sub-national development banks); (ii) governments and

---

<https://unfccc.int/process/bodies/constituted-bodies/standing-committee-on-finance-scf/activities-of-the-scf/work-by-the-standing-committee-on-finance-on-measurement-reporting-and-verification-of-support>.

<sup>103</sup>. An overview of relevant sources is available at <https://unfccc.int/topics/climate-finance/resources/biennial-assessment-of-climate-finance>.

<sup>104</sup> UNEP 2016. The Adaptation Finance Gap Report 2016. United Nations Environment Programme (UNEP), Nairobi, Kenya. Available at <https://unepdtu.org/publications/the-adaptation-finance-gap-report/>.

<sup>105</sup> UNEP 2014. The Adaptation Gap Report 2014. United Nations Environment Programme (UNEP), Nairobi. Available at <https://www.unenvironment.org/resources/adaptation-gap-report-2014>.

<sup>106</sup> UNEP (2015). The adaptation finance gap update: with insights from the INDCs. United Nations Environment Programme (UNEP). Nairobi, Kenya. Available at

[http://web.unep.org/sites/default/files/gapreport/UNEP\\_Adaptation\\_Finance\\_Gap\\_Update.pdf](http://web.unep.org/sites/default/files/gapreport/UNEP_Adaptation_Finance_Gap_Update.pdf)

<sup>107</sup> An example for this approach is the global scenario-based aggregated sectoral impact assessment approach applied by the World Bank in the following study: World Bank. 2010. The economics of adaptation to climate change: A Synthesis Report. The World Bank Group. Washington, DC., United States.

<sup>108</sup> These include, for example, the NEEDS project mentioned in section 5.2.1.1, the “Economics of adaptation to climate change – country studies” (see footnote 103) and the 2011 “Assessment of investment and financial flows to address climate change – country summaries” by UNDP (Available at: <http://www.undpcc.org/en/financial-analysis/results>).

their bilateral aid agencies, as recorded in the creditor reporting system, administered by the OECD's Development Assistance Committee (DAC) and dedicated climate change funds.<sup>109</sup> The report draws on the estimates presented in the Climate Policy Initiative's Global Landscape of Climate Finance<sup>110</sup> and on OECD databases. Neither public sector budgets for domestic adaptation action nor domestic or international private sector financing are included in the global quantitative estimates in this report since no systematic tracking on such flows had been available. However, the report states that particularly private adaptation finance will be and potentially already is essential to meeting the costs of adaptation needs and describes some evidence about private sector financing for adaptation in developing countries as well as financial and non-financial tools that can be used to mobilize private sector financing for adaptation in such countries.

117. Based on the estimation of adaptation costs and the determination of available international public adaptation finance, the report estimates the adaptation finance gap for three different points in time: now, 2030 and 2050. For now, the report assesses how the estimated adaptation costs compare to the actual levels of international public adaptation finance. For 2030 and 2050, it assesses how the estimated adaptation costs compare to the commitment by developed country Parties of mobilizing US\$100 billion per year for mitigation and adaptation from 2020, assuming the intended equal split between the two and an increase in this commitment from 2025 onwards.<sup>111</sup>

## **5.2.2. Adequacy of support provided in the form of technology development and transfer**

### **5.2.2.1. Reviews under the Convention**

118. The adequacy of technology support, including for adaptation, was assessed in 2008/2009 via the review of existing and potential new financing resources in supporting the development, deployment, diffusion and transfer of environmentally sound technologies in developing countries. The Expert Group on Technology Transfer was tasked to identify and analyse such resources and relevant vehicles and to assess gaps and barriers to the use of and access to these resources in order to provide information to Parties to consider their adequacy and predictability.<sup>112</sup> For this assessment it was requested to take into account the following criteria:

- a) The implementation of TNAs;
- b) Joint research and development programmes and activities in the development of new technologies;
- c) Demonstration projects;
- d) Enabling environments for technology transfer;
- e) Incentives for the private sector;
- f) North-South and South-South cooperation;
- g) Endogenous capacities and technologies;
- h) Issues associated with meeting the agreed full incremental costs;

<sup>109</sup> These include the Pilot Programme for Climate Resilience (PPCR), the Least Developed Countries Fund (LDCF), the Adaptation Fund (AF), the Adaptation for Smallholder Agriculture Programme (ASAP), the Special Climate Change Fund (SCCF) and the MDG Achievement Fund.

<sup>110</sup> Buchner B. et al. 2015. Global Landscape of Climate Finance 2015: A CPI Report. Climate Policy Initiative. Venice, Italy. Available at: <http://climatepolicyinitiative.org/publication/globallandscape-of-climate-finance-2015/>. The methodology used in this report relies on the tracking standards and reporting approaches used by the members of the OECD's DAC, the group of multi-lateral banks that report jointly on climate change finance volumes, the members of the International Development Finance Club, and the various funds dedicated to climate change.

<sup>111</sup> Through decision 1/CP.21, paragraph 53 Parties have decided that, in accordance with Article 9, paragraph 3, of the Agreement, developed countries intend to continue their existing collective mobilization goal through 2025 [...]; and that prior to 2025 the CMA shall set a new collective quantified goal from a floor of USD 100 billion per year [...].

<sup>112</sup> Decision 3/CP.13, annex II, paragraphs (f) (i) and (ii).

- i) Licences to support the access to and transfer of low-carbon technologies and know-how;
- j) A window for, inter alia, a venture capital fund related to or possibly located in a multilateral financial institution.

119. Further, systematic reviews have not been undertaken under the Convention so far, although sources to identify technology needs and respective support provided are available in the form of, for instance, technology needs assessments, national adaptation plans, and nationally determined contributions as well as biennial reports.

120. However, as mentioned in paragraph 95 above, the COP has decided “to undertake a periodic assessment of the effectiveness and adequacy of the support provided to the Technology Mechanism in supporting the implementation of the Paris Agreement on matters relating to technology development and transfer”.<sup>113</sup> The adequacy of the support provided to the TM will be reviewed based on the assessment of (i) the recipients of the support provided (TEC and CTCN, including the national designated entities) (ii) the sources of support provided; (iii) the types of support provided; (iv) how the support provided was used, taking into account actions at the different stages of the technology cycle (mitigation actions; adaptation actions, cross-cutting actions) (v) the level of support provided and whether it has changed over time; (vi) the extent to which the support has met the budgets and plans of the Technology Mechanism.<sup>114</sup>

### 5.2.2.2. UNEP Adaptation Gap Report

121. As mentioned in section 5.2.1.2, for its Adaptation Gap Report 2014,<sup>115</sup> UNEP has developed a conceptual framework which assumes that an adaptation goal can be established for each area of interest (finance, technology, knowledge) and subsequently identified whether there exist a gap between the adaptation levels that would be consistent with the goal at a given point in time and the actual levels achieved through the implementation of adaptation measures. In case of technology development and transfer the goal would be a societally set target for implementation of technologies for adaptation which would be assessed against the adaptation technologies actually implemented. However, from the outset, the report admits that a clear definition of technology targets, based on needs, and those implemented, which would allow for a measurement or quantification of the technology gap, is not possible due to the multidimensional definition of technologies for adaptation and their frequent overlaps with overall adaptation activities. Measuring the transfer, diffusion and deployment of technologies via financial flows would only be one (limited) proxy for the comparison over time, but other measurements or quantifications at an aggregate level are impossible.

122. Instead, it proposes that the gap could be described as perceived by the countries based on an analysis of their technology needs assessments (TNAs), and requests to technology support mechanisms such as the Climate Technology Centre and Network (CTCN). For that, it uses analyses of TNAs, National Adaptation Programmes of Action (NAPAs) and various support requests in order to derive the following aspects of perceived gaps:

- a) The distribution of priority technology components (hardware, software or orgware) in different sectors (e.g. agriculture, water, coastal zones, disaster risk management);
- b) The type of gaps in terms of transfer, diffusion or innovation implicitly derived from the nature of the identified technology needs (e.g. whether a country as a whole needs a specific type of technology (=transfer) or only a certain region which had not yet have access (=diffusion));
- c) Level of maturity (traditional, modern, high, or future) of prioritized technologies by sector and a comparison of the size of the gaps identified under each level of maturity over time (e.g. there seems to be a shift in demand from traditional towards more modern technologies); and

---

<sup>113</sup> Decision 1/CP.21, paragraph 69.

<sup>114</sup> Decision 16/CMA.1, annex.

<sup>115</sup> UNEP. 2014. The Adaptation Gap Report. A Preliminary Assessment Report. Available at <https://www.unenvironment.org/resources/adaptation-gap-report>

- d) Categories of different barriers to technology development and transfer and their respective weight (e.g. challenges often relate to the local adoption and diffusion of technologies rather than to their availability);

123. Based on this rather qualitative description of gaps in or inadequacy of technology development and transfer, the report describes how targets in this regard could be defined, for instance, by identifying cases in which international transfer of technologies is critical and those where the focus should lie on accelerating the diffusion and uptake of existing technologies instead of their transfer.

### 5.2.3. Adequacy of capacity-building support

124. The adequacy of capacity-building support is regularly assessed as part of the comprehensive reviews of the capacity-building framework under the Convention.

125. Similar to the review of the adequacy of technology support, a quantification of the adequacy of capacity-building support is not possible due to its multidimensional definition and overlaps with other adaptation activities and their support. However, the assessment of possible gaps between the provisions of decision 2/CP.7 regarding the scope and areas of the capacity-building framework (see section 5.1.3.1 above) and the implementation of capacity-building activities is an explicit objective of the comprehensive reviews of the CB framework and is undertaken in qualitative terms by considering, for example, the following aspects:

- a) Degree to which the areas of the CB framework align with current CB needs identified by developing countries in their national communications, NAPAs, national capacity self-assessment (NCSA) reports, national poverty reduction strategy papers (PRSPs) and national sustainable development strategies;
- b) Degree to which Annex II Parties and other providers of support have covered the priority issues identified in the CB framework and by individual countries;
- c) Distribution of support provided for the three levels of CB – systemic (enabling environments such as economic and regulatory policies), institutional, and individual;
- d) Key remaining needs under different areas of the CB framework.

126. Outcomes of these reviews are requested to feed into the work of the Paris Committee on Capacity-building whose workplan for the period 2016-2020 includes the identification of capacity gaps and needs and the recommendation of ways to address them.<sup>116</sup>

## 5.3. Findings and lessons learned

127. The following general and specific findings and lessons can be drawn from the methodologies to review the adequacy and effectiveness of adaptation support:

- a) Given the fact that adaptation support, just like adaptation itself, is multidimensional and cross-cutting in nature, the review of its adequacy and effectiveness requires:
  - i) Evaluations at different geographical and temporal scales to capture outcomes that have cross-boundary effects and/or evolve over time;
  - ii) Well-functioning monitoring and reporting systems which supply required data and information;
  - iii) A mixed method approach and the triangulation of data, including both quantitative and qualitative, from a wide variety of sources to adequately understand, evaluate and explain outcomes and to make up for potential data gaps in standard sources;
  - iv) The participation of all relevant stakeholders, including the providers of support, the beneficiaries as well as independent reviewers in order to capture all relevant perspectives;

<sup>116</sup> Decision 1/CP.21, paragraph 73 (b).



- v) Both continuity and flexibility in successive reviews with continuity referring to a repetitive assessment of the same aspects in order to capture developments over time and flexibility referring to the need to take into account new developments, trends and values when establishing assessment criteria since these influence the way adequacy and effectiveness are evaluated (e.g. the role of gender, private sector involvement, country ownership, or complementarity of international funds which successively have been added to the catalogue of criteria to assess effectiveness of adaptation support);
- b) Although adequacy and effectiveness require different methodologies to be assessed, both concepts are closely linked and sometimes being seen as components of each other and as such need to be considered jointly, and, where relevant, in conjunction with other aspects such as relevance, coherence, efficiency, impact and sustainability, in order to ultimately evaluate outcomes of adaptation and its support;
- c) Even if there are no apparent global standards or indicators to review the adequacy and effectiveness of adaptation support due to its context-specific nature, common assessment criteria can potentially be developed over time through the collection of experience and findings from successive reviews that incorporate a broad range of information sources (e.g. as in the case of the key factors influencing effectiveness of capacity-building identified through consecutive reviews of the capacity-building framework);
- d) In the case of effectiveness, while there are different views on what exactly counts towards it subject to the individual objective of the support provided, the ultimate indicator should be whether a supported intervention actually increases resilience on the ground and for this to assess, the evaluation needs to be sufficiently complex;
- e) The review of the effectiveness of adaptation support requires both the assessment of the final outcome of the supported adaptation activity as well as the assessment of the way the support was provided (e.g. organizational or management effectiveness);
- f) Periodic and standard performance evaluations can be complemented by thematic evaluations in order to review effectiveness, such as in the case of the CIF's Evaluation & Learning Initiative that focuses on learning about effectiveness through thematic studies instead of annual programme performance evaluations;
- g) The evaluation of the adequacy of support may be based on several components, including (i) the assessment of the present ratio of support needed and provided (reflecting the present adaptation gap or deficit), (ii) an estimation of future needs and potential support, e.g. up to a certain point in time, and (iii) the effectiveness of support provided and received ;
- h) In order to avoid double counting of the three types of support needs assessments and reports on support should include a sufficient amount of qualitative information;
- i) Increased and improved reporting is essential for the future review of adequacy and effectiveness of adaptation support and developing countries need to be supported in this regard through the streamlining of reporting requirements as well as through financial and technical assistance as well as through awareness-raising on the value of M&E and reporting in order to increase demand and ownership and thus sustainability of the respective systems;
- j) A range of review systems and methodologies to assess the adequacy and effectiveness of adaptation support at all levels exists, including under the Convention, that the methodologies to be developed for the global stocktake can build on and link to, while considering differences in their respective purposes and objectives.

#### **5.4. Gaps and challenges**

128. The following gaps and challenges have been identified with regard to methodologies to review the adequacy and effectiveness of adaptation support:

- 
- a) Gaps in the definitions of adaptation finance, technology and capacity-building as well as their close interlinkages impede a clear distinction of their respective contributions to resilience building and hence an evaluation of their adequacy and effectiveness;
  - b) Evaluating to what extent better adaptation results can be achieved through more support compared to other influencing factors, such as enabling environments, is often challenging;
  - c) Moving from the prevailing focus on short-term and quantifiable outputs and outcomes of adaptation support to the long-term, non-quantifiable impacts in order to assess the adequacy and effectiveness of adaptation support is also challenging;
  - d) Uncertainties associated with data sources persist that are due to different approaches of collecting and reporting data and information, limiting the scope of comparability;
  - e) Gaps in data coverage and reporting lead to underestimations of support needed and provided;
  - f) Lack of institutional capacity, decreasing scope for capacity-building for monitoring and reporting and inefficient reporting processes in developing countries lead to a gap in the continuous and consistent collection and reporting of data and information;
  - g) There are specific challenges which hamper the assessment of the adequacy of financial support since they stand in the way of obtaining a full picture of adaptation finance needs and flows. These relate to:
    - i) A general lack of an agreed assessment of the financing needs of developing countries at the level of the Convention although improvements have been achieved by the efforts described in section 5.2.1.1;
    - ii) A widespread approach of basing the estimation of adaptation costs on planned public adaptation and the estimation of available finance on public international finance, omitting autonomous and private adaptation costs as well as public domestic and private finance, which are more difficult to track but could increase estimates of costs and available finance significantly;
    - iii) Close interlinkages between adaptation and development finance which impedes a clear identification and classification of investments; and related to that
    - iv) A likely underestimation of international public finance flows for adaptation due to a lack of a methodology available to capture financing for activities that do not have adaptation as their primary goal but do lead to adaptation co-benefits, such as mitigation, disaster risk reduction or ecosystem-based services projects.

---

### Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
01.0	28 August 2021	AC20 The AC and the LEG are invited to agree on the next steps of this document AC-LEG/INFO/3.

---

01.1	July 2021	Post AC19/LEG39 This version (AC-LEG/INFO/2) reflected minor revisions in the annex and served as basis for further discussion prior to AC20, as agreed at AC19.
01.0	8 March 2021	AC19/LEG39 This information note ( <a href="#">AC-LEG/INFO/2</a> ) is for consideration by the AC and the LEG and to agree on the next steps.
n/a	7 November 2020	AC18/LEG38 This document ( <a href="#">AC-LEG/INFO/1</a> , version 01.0) was prepared for consideration and further guidance by the AC and the LEG.
Draft	7 August 2020	Post AC17/LEG37 The AC and the LEG agreed to continue the work on this issue for later consideration.
n/a	13 September 2017	Post AC11/LEG31 The AC and the LEG, in collaboration with the SCF, considered the draft recommendations presented on <a href="#">AC-LEG/2017/3</a> section 5 (page 10) and forwarded them to the CMA1 for endorsement.
n/a	3 March 2017	AC11/LEG31 The AC and the LEG, in collaboration with the SCF, considered draft options to address decision 1/CP.21, para. 45(b) presented on <a href="#">AC-LEG/2017/1</a> section 5 (page 20) and decided to continue refining them.
n/a	5 October 2016	AC10/LEG30 The AC and the LEG, in collaboration with the SCF, considered the desk review presented on <a href="#">AC-LEG/2016/2</a> and decided to prepare a synthesis of submissions in a desk review.

---

Keywords: Paris outcome, Adaptation, Resilience, LEG, Adaptation Committee

---