

**Seventeenth meeting of the Adaptation Committee  
Bonn, Germany, 24 to 27 March 2020**

**Draft technical paper on approaches to reviewing the overall progress made in  
achieving the global goal on adaptation**

**Recommended action by the Adaptation Committee**

The Adaptation Committee (AC), at its 17<sup>th</sup> meeting, will be invited to consider the draft technical paper and reflect on the merits and limitations of the various potential approaches to assessing the global goal on adaptation under the global stocktake.

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## 1. Introduction and background

1. Article 7 of the Paris Agreement established the global goal on adaptation, which has the objective of “enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate response in the context of the temperature goal”<sup>1</sup> of “[h]olding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels.”<sup>2</sup>
2. To assess progress towards the implementation of the Paris Agreement and its long-term goals, Article 14 of the Agreement established the global stocktake. The global stocktake is a cyclical mechanism taking place every five years beginning in 2023.<sup>3</sup> In relation to adaptation, the global stocktake will, among other things, review the overall progress made in achieving the global goal on adaptation.<sup>4</sup> Beyond shedding light on what Parties have achieved, the outcomes of the global stocktake will inform Parties as they update and enhance their actions, support, and international cooperation in line with the Paris Agreement.<sup>5</sup>
3. In 2019, the Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement (CMA) requested the Adaptation Committee (AC) “to consider approaches to reviewing the overall progress made in achieving the global goal on adaptation and to reflect the outcome of this consideration in its 2021 annual report.”<sup>6</sup> This technical paper is an initial step towards fulfilling this request, and is intended to help launch the discussion within the AC on approaches to assessing the global goal on adaptation.
4. Additionally, this technical paper also contributes to an activity in the Adaptation Committee’s 2019-2021 flexible workplan, albeit one year earlier than planned. This activity specifically is preparing a “technical paper on useful information and methodologies for assessing progress in enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change,” which was initially planned for 2021.
5. The paper includes three substantive chapters, starting from an initial analysis of the scientific literature, then exploring national approaches and summarising the spectrum of approaches, as follows below.
6. A burgeoning academic and grey literature explores the potential means of assessing collective adaptation progress in the global stocktake and in general. This literature grapples with the challenges and trade-offs inherent in reviewing progress made in adapting to climate change. While these challenges certainly complicate the search for a path towards reviewing of the global goal on adaptation in the global stocktake, scholars and practitioners have nonetheless proposed possible ways forward. Chapter 2 of this paper reviews this literature and highlights both the general insights it reveals as well as the specific approaches proposed for effectively assessing progress. The review is not exhaustive.
7. Recognizing that national-level initiatives aimed at assessing adaptation progress also offer important lessons that can inform efforts to review progress across borders, Chapter III then looks at examples from existing national-level systems. These examples serve to elucidate what has thus far been feasible and effective at tracking progress, and how that might inform efforts at a broader, international scale.
8. Based on the findings from Chapters II and III, Chapter IV reflects on the spectrum of approaches outlined in the scientific literature or used in practice and how they might be applicable in the context of the global stocktake.

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<sup>1</sup> Article 7, para. 1, of the Paris Agreement.

<sup>2</sup> Article 2, para. 1(a), of the Paris Agreement.

<sup>3</sup> Article 14, para. 2, of the Paris Agreement.

<sup>4</sup> Article 7, para. 14(2), of the Paris Agreement.

<sup>5</sup> Article 14, para. 3, of the Paris Agreement.

<sup>6</sup> Decision 1/CMA.2, para. 14.

## 2. Overview of the relevant scientific literature

9. Adaptation practitioners and scholars have generated a diverse literature in recent years dealing with the question of how to assess adaptation progress and aggregate these assessments across various scales and dimensions. Assessing adaptation progress is critical for understanding whether and how vulnerability is changing over time and across scales and dimensions, and how adaptation interventions (or a lack thereof) are influencing these changes. It helps decision-makers to understand “what works well in which contexts”<sup>7</sup> and to develop their plans and priorities accordingly. In the case of the global goal on adaptation and the global stocktake, assessing progress is also necessary for determining whether Parties to the Paris Agreement are on track to reaching the long-term goals enshrined in the landmark agreement, and therefore on track to building the climate-resilient world envisioned by its provisions. It may also result in various corollary benefits, such as raising the profile of adaptation nationally, improving estimates of the costs of adaptation, and helping to better target adaptation finance to where it is most needed.<sup>8</sup> While the value of assessing adaptation progress is thus clear, the challenges in finding an appropriate, acceptable, an/or feasible method for undertaking such assessments make the task rather difficult.

### 2.1. Challenges of assessing progress towards the global goal on adaptation

10. Assessing adaptation progress at a global level requires navigating a series of significant challenges and trade-offs. Craft and Fisher identify four main challenges that complicate the effort to review progress towards the global goal on adaptation in the global stocktake.<sup>9</sup> This includes: 1) designing a system that can aggregate results across scales and contexts; 2) satisfying the global stocktake’s dual mandate of assessing collective progress and informing the update and enhancement of national level actions; 3) overcoming the methodological challenges inherent in evaluating adaptation, such as the difficulty of attributing results to interventions and the shifting baselines and uncertainties of climate hazards; and 4) navigating divergent views and political sensitives surrounding measurement under the UNFCCC regime. Tompkins et al. also hold that methodological challenges are one key problem area for assessing adaptation under the global stocktake, but argue that empirical challenges (the rarity of adaptation databases) and conceptual challenges (lack of agreement on what counts as adaptation) are two additional core difficulties that must be considered.<sup>10</sup>

11. Dilling et al. also warn of three challenges that stand in the way of assessing adaptation progress when it is framed as assessing the “success” of adaptation measures.<sup>11</sup> First, the authors note, is the absence of a single, common definition of adaptation success or effectiveness. Second, different perceptions of what constitutes successful adaptation may arise from different, and evolving, perceptions of what constitutes a risk and varying risk tolerances. Third is the challenge of existing power asymmetries and how they influence who can define what is measured when assessing adaptation success. Similarly, Leiter and Pringle caution that value judgments necessarily enter into the equation when assessing the success of adaptation action because it is possible that cases arise where, for example, adaptation undertaken by one demographic undermines the capacity of another demographic to adapt.<sup>12</sup>

12. Berrang-Ford et al. highlight six key criteria for indicators or frameworks for assessing adaptation progress that are comparable across the globe—namely, aggregable, transparent, longitudinal, feasible,

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<sup>7</sup> Leiter T. 2015. Linking monitoring and evaluation of adaptation to climate change across scales: avenues and practical approaches. *New Directions for Evaluation*. 147: 117-127.

<sup>8</sup> Tompkins EL, Vincent K, Nicholls RJ, et al. 2018. Documenting the state of adaptation for the global stocktake of the Paris Agreement. *WIREs Climate Change*. 9(5): 1-9.

<sup>9</sup> Craft B and Fisher S. 2018. Measuring the adaptation goal in the global stocktake of the Paris Agreement. *Climate Policy*. 18(9): 1203-1209.

<sup>10</sup> As footnote 9 above.

<sup>11</sup> Dilling L, Prakash A, Zommers Z, et al. 2019. Is adaptation success a flawed concept? *Nature Climate Change* (9): 570-574.

<sup>12</sup> Leiter T and Pringle P. 2018. Pitfalls and potential of measuring climate change adaptation through adaptation metrics. In: L Christiansen, Martinez G, and P Naswa (eds.). *Adaptation metrics: Perspectives on measuring, aggregating and comparing adaptation results*. Copenhagen: UNEP DTU Partnership. pp. 29-48.

coherent, and sensitive to national context—but note that trade-offs between these criteria often arise.<sup>13</sup> For example, the authors find that approaches to assessing progress that focus on the criterion of aggregability often do so at the expense of sensitivity to the national context (including differing political, economic, and socio-cultural priorities and resources) or coherence (the extent to which the measure reflects a meaningful proxy for adaptation). Similarly, if the approach or measure meets the criteria of aggregability or feasibility, it may face trade-offs with the criterion of being longitudinal (having the ability to be tracked over time), as changing priorities or resources may undermine future aggregability and feasibility.

13. Given that the global stocktake represents the first effort under the UNFCCC to assess global progress on adaptation, it is not yet clear how to strike the optimal balance between these trade-offs in a manner that is feasible and delivers the outputs expected of the process. Even beyond work under the UNFCCC, “understanding of the global state of adaptation... is currently partial and fragmented.”<sup>14</sup> As such, “Parties will need to innovate or borrow” their approach to assessing progress towards the global goal on adaptation in the global stocktake.<sup>15</sup>

## 2.2. Approaches proposed for assessing collective progress on adaptation

14. How to fulfil the criteria of aggregation is one of the key questions for assessing progress towards the global goal on adaptation in the global stocktake. The AC considering in 2013 the monitoring and evaluation of adaptation, based on the consideration by convened experts, concluded that adding up indicators from the local level to obtain a national-level aggregate “is neither necessarily possible nor desirable.”<sup>16</sup> Later, in a number of studies this conclusion was further substantiated.

15. Leiter and Pringle argue that an understanding of aggregation as “the collation or bringing together of information across spatial scales and geographical boundaries, whether quantitatively or qualitatively” better serves the goal of assessing global adaptation progress than an understanding of aggregation as “simply adding up numbers.”<sup>17</sup>

16. Leiter (2015) identifies three potential avenues for linking information on adaptation drawn from different scales. The first avenue uses standardized metrics applied consistently at different scales. This approach is used by multilateral climate funds to assess the performance of their overall portfolio, but, as discussed above, often sacrifices context-specificity in its use of “common-denominator indicators” that measure the total number of beneficiaries or tools developed.<sup>18</sup> It is possible to mitigate this challenge while still pursuing this avenue by allowing for jurisdictions to select indicators applicable to their circumstances from a larger set. The second avenue uses context-specific metrics that are not standardized but that relate to common themes, which offers flexibility but limits the extent to which overall results can be quantified and compared. Finally, the third avenue includes informal linkages, such as networking and information exchange among governments. These three avenues can be pursued together so that, overall, the strengths and weaknesses of the various approaches balance one another out. For example, standardized metrics can be combined with flexible use of context-specific metrics. This combination of approaches is one potential way forward for assessing the global goal on adaptation proposed by Craft and Fisher, who suggested that common themes for the context-specific indicators could include climate-resilient ecosystems and

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<sup>13</sup> Berrang-Ford L, Wang FM, Lesnikowski A, et al. 2017. Towards the assessment of adaptation progress at the global level. In: A Olhoff, H Neufeldt, P Naswa et al. (eds). *The Adaptation Gap Report: Towards Global Assessment*. Nairobi: United Nations Environment Programme. pp. 35-48.

<sup>14</sup> Olhoff A, Väänänen E, and Dickson B. 2018. Tracking adaptation progress at the global level: Key issues and priorities. In: Z Zommers and K Alverson (eds.). *Resilience: The Science of Adaptation to Climate Change*. p. 53.

<sup>15</sup> Huang J. 2018. What can the Paris Agreement’s global stocktake learn from the Sustainable Development Goals? *Carbon and Climate Law Review* 12(3): p. 225.

<sup>16</sup> UNFCCC Adaptation Committee. 2014. *Report on the workshop on the monitoring and evaluation of adaptation*. Bonn: UNFCCC. p. 4. Available at [https://unfccc.int/sites/default/files/ac\\_me\\_ws\\_report\\_final.pdf](https://unfccc.int/sites/default/files/ac_me_ws_report_final.pdf)

<sup>17</sup> As footnote 13 above, p. 38.

<sup>18</sup> As footnote 8 above, p. 121-122.

ecosystem management, disaster preparedness and early warning systems, institutional mainstreaming into government institutions, and more.<sup>19</sup>

17. Instead of directly addressing the challenge of how to extract and aggregate information across scales, other authors have suggested that the global stocktake return to first principles and broker agreement on the outstanding contentious or ambiguous elements of the global goal on adaptation. For example, Tompkins, Vincent, Nicholls, and Suckall propose what they call a “stocktaking approach” that includes four steps intended to track observed adaptation action across large scales.<sup>20</sup> The first step involves reaching consensus on the objectives of adaptation action. Second, relevant stakeholders must agree sources of evidence that can feed into the stocktaking approach. Third, they must agree search methods for tracking adaptation. Finally, they must categorize the adaptations. This approach does not focus on evaluating the success of adaptation action, but rather on establishing a baseline of adaptation by documenting the number of people who are adapting to climate change, and where and by whom adaptation action is taking place. On the objectives of adaptation, the authors argue for three specific objectives as a starting point for the stocktaking approach: reducing socioeconomic vulnerability, disaster risk reduction, and supporting socioecological resilience.

18. In a similar vein, Olhoff, Väänänen, and Dickson argue that tracking progress towards the global goal on adaptation requires significant preparatory work and arriving at agreement in key areas.<sup>21</sup> Specifically, the authors hold that it is necessary to agree on what to track (establishing conceptual clarity on the global goal) and on how to track it (identifying appropriate methodologies, metrics, and indicators). A third key action area the authors highlight is addressing challenges related to existing information and data, including that such data is limited, broad, and generally not tailored enough to adaptation. The authors contend, however, that it is “highly unlikely” that the UNFCCC process can address this challenge on its own.<sup>22</sup>

19. Also emphasizing the need for further clarity on the elements of the global goal on adaptation, Ngwadla and El-Bakri nonetheless propose a framework of metrics to track the implementation of the goal. This framework includes three broad categories of metrics: risk metrics that are tied to different temperature scenarios; metrics that assess global readiness to address risk; and metrics that assess support required and available for adaptation. The first category of risk metrics would include, the authors suggest, a composite index of economy-wide risk and an assessment of risk for specific sectors; both would be linked to varying temperature scenarios. Metrics assessing global readiness to address risk, by contrast, would examine three different elements, namely, the global state of adaptation planning readiness, the state of sector-based planning, and whether planning is appropriate in light of risks and vulnerability. Finally, the third category of support-related metrics would serve to assess the investment required to address risks linked to varying temperature scenarios, domestic adaptation investments made (to recognize the efforts of developing country Parties), and support provided for adaptation. This approach thus advocates for assessing progress towards the goal more holistically and beyond the three individual elements, considering progress in light of the Paris Agreement’s temperature goal and the global stocktake’s mandate to also recognize the adaptation efforts of developing country Parties and review the adequacy and effectiveness of adaptation and support provided for adaptation.

20. The 2017 UNEP Adaptation Gap Report, which focused on the topic of global assessment of adaptation, concluded that frameworks for assessing adaptation progress that follow a proximity-to-target approach “have the greatest potential to respect a diversity of national contexts while facilitating global assessment of progress.”<sup>23</sup> Such frameworks generally use a government’s own targets and goals as a benchmark and seek to determine whether these are being reached.<sup>24</sup> They could also accommodate more subjective and normative assessments of the sufficiency or appropriateness of a government’s goals or the instruments being deployed to work towards these goals. Dupuis and Biesbroek contend that such an approach may help solve the “dependent variable problem” complicating the comparison of adaptation policies between and

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<sup>19</sup> As footnote 10 above, p. 1206.

<sup>20</sup> As footnote 9 above.

<sup>21</sup> As footnote 15 above.

<sup>22</sup> As footnote 15 above, p. 57.

<sup>23</sup> UNEP. 2017. *The Adaptation Gap Report 2017: Towards Global Assessment*. Nairobi: United Nations Environment Programme (UNEP). p. xvi.

<sup>24</sup> As footnote 14 above.

within countries, wherein the scope, boundaries, and concept of the phenomenon being assessed are ambiguous.<sup>25</sup> Their suggestion, however, is to develop a proximity-to-target framework wherein the comparison is made to an ideal model of adaptation policy. This, of course, requires agreement on what constitutes an ideal model.

21. Following this overarching proximity-to-target approach, Berrang-Ford et al. propose an overarching conceptual framework for systematically tracking global adaptation efforts that is designed to be both flexible and sensitive to national contexts on the one hand, but also scalable and suitable to diverse contexts on the other hand.<sup>26</sup> The framework combines descriptive assessment of four key elements (vulnerability, adaptation goals/targets, adaptation efforts, and adaptation results) with an evaluative assessment in three areas (sufficiency of goals and targets, sufficiency of adaptation efforts, and attribution and contribution of adaptation efforts). A combination of evaluative and descriptive components is beneficial because while descriptive assessments are better suited to tracking progress objectively over time, evaluative assessments, though more subjective, can potentially capture more meaningful snapshots of adaptation progress (Neufeldt 2017). In this case, the evaluative assessment enables those using the framework to gain insight into how well-aligned the four key descriptive elements are in each context. For example, it prompts an examination of whether goals and targets are aligned with the vulnerability profile and context, whether the government's adaptation efforts are aligned with its own goals and targets, and, in turn, whether there is evidence that vulnerability changed as a result of the government's efforts or whether the results meet the goals and targets specified. Notably, the approach does not introduce new tools or identify a particular group of indicators, but rather presents a set of core concepts and questions in an overarching framework within which relevant tools and indicators can be used. This is what enables the framework to be deployed in different contexts and at different scales, though the type of indicators, data quality, and other factors will therefore be inconsistent depending on the place and level at which it is used. The framework also allows for a deep dive into assessing the alignment of policies in a given context, either horizontally by assessing whether on-the-ground and policy-level goals and details align with high-level ideas, and vertically by assessing policy mechanisms chosen at one level align with the policy goal articulated at that level. For the purpose of assessing the global goal on adaptation in a manner that is consistent with the spirit of the Paris Agreement, descriptive proximity-to-target assessments could be undertaken by governments, while the evaluative portion could be undertaken through participatory, expert review, or country-led mechanisms.<sup>27</sup>

### 2.3. Opportunities and limitations of using metrics and indicators to assess the global goal on adaptation

22. The question of how to assess adaptation progress is closely related to the search for adaptation metrics and indicators.<sup>28</sup> This search has not been straightforward; on the contrary, it has been, and will likely remain, contentious.<sup>29</sup> This is in stark contrast to the realm of mitigation. Mitigation effectiveness is measured in units of a universally applicable metric (tonnes of GHGs) against an objective and quantifiable goal (e.g. limiting temperature rise to well below 2°C or to 1.5°C above preindustrial levels) and presented in a uniform and easily comparable format (GHG emissions inventories). Adaptation, on the other hand, does not easily lend itself to a universal, objective, quantifiable measure of success or effectiveness.

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<sup>25</sup> Dupuis J and Biesbroek R, 2013. Comparing apples and oranges: The dependent variable problem in comparing and evaluating climate change adaptation policies. *Global Environmental Change* 23(6): 1476-1487.

<sup>26</sup> Berrang-Ford L, Biesbroek R, Ford J, et al. 2019. Tracking global climate change adaptation among governments. *Nature Climate Change* 9(6): 440-449.

<sup>27</sup> As footnote 14 above.

<sup>28</sup> The IPCC (2014) distinguished between the terms "metric" and "indicator" by defining a metric as a "group of values (measures) that taken together give a broader indication of the state or the degree of progress" while an indicator "is a sign or estimate of the state of something." Nonetheless, the IPCC notes that this differentiation is not consistent in the literature and, indeed, for the purposes of this paper this distinction is not clear in most of the work reviewed in this section. Therefore, the two closely related terms are used interchangeably in this paper.

<sup>29</sup> IPCC. 2014. Adaptation Needs and Options. In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 833-868. Available at [https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap14\\_FINAL.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap14_FINAL.pdf)

23. Nonetheless, given the need to understand how adaptation interventions are affecting the capacity of people and ecosystems to cope with climate change impacts, the development and use of adaptation indicators by academics, donors, sub-national and national governments have proliferated recently. The IPCC (2014) has identified at least three uses of metrics for assessing adaptation: 1) determining the need for adaptation, 2) measuring the process of implementing adaptation, and 3) measuring the effectiveness of adaptation. Metrics related to the need for adaptation typically try to measure vulnerability, though it is not clear whether they can go beyond identifying people and places that are vulnerable to effectively shed light on the nature of the vulnerability. Metrics that measure the process of implementing adaptation action include assessments of progress in areas such as spending on adaptation action or the number of early warning systems implemented. As compared with the other two uses, selecting appropriate metrics for such measurements tends to be less contentious, though there is doubt about whether such metrics are effective proxies for measuring adaptation as opposed to development. Finally, metrics that strive to measure the effectiveness of adaptation are important for measuring progress but are especially difficult to find due to the long-time horizons of adaptation outcomes and the changing conditions in which they materialize.

24. In the literature on monitoring and evaluating adaptation, another common categorization framework for adaptation metrics and indicators differentiates between input, output, outcome, and impact indicators. Whereas input and output indicators look to capture the potential for adaptation, outcome and impact indicators look to capture the realization of adaptation.<sup>30</sup> Process-oriented input and output indicators have been the most common to date.<sup>31</sup> Relying on these indicators, however, may generate “misleading conclusions” about the extent to which adaptation is actually taking place.<sup>32</sup> Leiter and Pringle note that the IPCC’s latter two categories in combination can paint a picture of adaptation progress. While the second category represents a process-oriented assessment of what is being done to advance adaptation (input and output), the third category represents an outcome-oriented assessment of what is resulting from these efforts.

25. Indicators can be qualitative or quantitative, though Kato and Ellis argue that the portion of the global stocktake that assesses progress towards the global goal on adaptation is likely to be qualitative rather than quantitative due to the challenges such as context-specificity, the flexibility in time and content afforded to countries in reporting on their adaptation-related efforts under the Paris Agreement (i.e. adaptation communications in particular), and varying national practices and capacities in monitoring and evaluating the three elements of the goal.<sup>33</sup> The authors note that this assessment could yield quantitative information that is based on national self-assessments conducted through scorecards or reports to the UNFCCC, or based on third-party assessments such as IPCC reports or region- or country-specific analyses. Others have voiced a similar opinion.<sup>34</sup>

26. While there are existing indices with metrics that track the three elements of the global goal on adaptation (i.e. resilience, vulnerability, and adaptive capacity), the lack of agreement on the relative merits of these indices and the validity of the rankings that they generate renders it unlikely that they can play a prominent role, if any, in the global stocktake.<sup>35</sup> Indeed, efforts thus far have not yielded consensus on how to systematically assess, measure, express and compare countries’ vulnerability to climate change and none of the existing indices has been endorsed by the Conference of the Parties (COP) to the UNFCCC<sup>36</sup> or the CMA. The indices that exist generate significantly different country rankings as a result of the different

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<sup>30</sup> Leiter T, Olhoff A, Al Azar R, et al. 2019. *Adaptation metrics – Current Landscape and Evolving Practices*. Rotterdam and Washington: Global Commission on Adaptation. Available at <https://unepdtu.org/adaptation-metrics-current-landscape-and-evolving-practices/>

<sup>31</sup> As footnote 15 above.

<sup>32</sup> As footnote 13 above, p. 36.

<sup>33</sup> Kato T and Ellis J. 2016. *Communicating Progress in National and Global Adaptation to Climate Change*. Paris: OECD.

<sup>34</sup> E.g. Milkoreit M and Haapala K. 2017. *Designing the Global Stocktake: A Global Governance Innovation*. Arlington: Center for Climate and Energy Solutions (C2ES).

<sup>35</sup> As footnote 15 above.

<sup>36</sup> Moehner A. 2018. The evolution of adaptation metrics under the UNFCCC and its Paris Agreement. . In: L Christiansen, Martinez G, and P Naswa (eds.). *Adaptation metrics: Perspectives on measuring, aggregating and comparing adaptation results*. Copenhagen: UNEP DTU Partnership. pp. 15-28.

indicators and weightings used.<sup>37</sup> Therefore, the question of whether any index can be used to help determine what progress has been made towards the global goal on adaptation inevitably wades into contentious normative and political debates surrounding how to determine the vulnerability of individual countries to climate change.

27. Other than using vulnerability indicators, Michaelowa and Stadelmann highlight two other approaches for assessing the effectiveness of adaptation, namely, cost-benefit and cost-effectiveness analyses.<sup>38</sup> Cost-benefit analyses generate estimates of the economic benefits derived from adaptation efforts, though they do not consider non-monetary benefits (e.g. health-related benefits). By contrast, cost-effectiveness analyses identify the least costly means of reaching a defined goal, though this approach is less well suited to cases where there are multiple goals. Michaelowa and Stadelmann propose the indicators of Saved Wealth and Saved Health as effective ways to shed light onto the monetary and non-monetary outcomes of adaptation efforts.<sup>39</sup> Whereas the Saved Wealth indicator would offer a calculation of assets saved by an adaptation measure, the Saved Health indicator would estimate health benefits using the concept of Disability Adjusted Life Years Saved, which is common in the public health policy space. Similarly, Magnan and Ribera also argue for a specific proxy that they believe can distil some of the most important outcomes of adaptation into simple and clear summaries of adaptation outcomes and progress.<sup>40</sup> Specifically, they propose tracking the global goal for adaptation via the proxy of human security. They offer an interpretation of the global adaptation goal that, they believe, is more precise and therefore easier to track at a global level: “the commitment of the international community to ensure human security in a ‘well below +2°C’ world by the end of the century, meaning first, enhancing adaptation efforts when possible, and second, providing adequate answers for those whose security could not be covered in a well below +2°C world.”<sup>41</sup>

28. Although metrics and indicators have thus received a lot of attention in the literature on monitoring, evaluating, and aggregating information on adaptation, it is important to bear in mind their limitations. As Leiter and Pringle note, while metrics and indicators can help reveal some dimensions of progress on adaptation, they cannot offer explanations for why that progress has (or has not) taken place.<sup>42</sup> This, in turn, limits the extent to which these metrics or indicators can inform subsequent adaptation-related decisions taken on the basis of the assessment. This is an important consideration for assessing progress towards the global goal on adaptation in the global stocktake given that the outcome of the stocktake will inform Parties as they update and enhance their adaptation-related action and support.

29. In light of the challenges tied to indices, Olhoff, Väänänen, and Dickson suggest that sectoral approaches could offer an alternative way forward for the global stocktake.<sup>43</sup> This would align with the sectoral approaches taken in many NDCs, NAPs, and other reporting, monitoring, and evaluation frameworks. Sector-specific literature does offer some insights into potential avenues for measuring progress and/or success in adaptation. The Lancet Commission on health and climate change, for example, has a set of indicators specific to “adaptation, planning, and resilience for health.” As with other efforts to measure and track adaptation, however, the indicators are largely process-based, making it difficult to derive any conclusions about the effectiveness of the processes being tracked. In their 2018 report, the Lancet Commission acknowledged this, noting that “although adaptation activities may have increased, they do not guarantee resilience against future climate change.”<sup>44</sup> Of the Commission’s eight adaptation-related indicators, only one—their newest indicator which measures climate change adaptation to vulnerabilities from mosquito-borne diseases—attempts to measure health outcomes. There are additional sectoral tools

<sup>37</sup> As footnote 13 above.

<sup>38</sup> Michaelowa A and Stadelmann M. Development of universal metrics for adaptation effectiveness. . In: L Christiansen, Martinez G, and P Naswa (eds.). *Adaptation metrics: Perspectives on measuring, aggregating and comparing adaptation results*. Copenhagen: UNEP DTU Partnership. pp. 63-72.

<sup>39</sup> As footnote 39 above.

<sup>40</sup> Magnan A and Ribera T. 2016. Global adaptation after Paris: Climate mitigation and adaptation cannot be uncoupled. *Science* 352(6291): 1280-1282.

<sup>41</sup> As footnote 43 above, p. 1282.

<sup>42</sup> As footnote 13 above.

<sup>43</sup> As footnote 15 above.

<sup>44</sup> Watts N, Amann M, Arnell N et al. 2018. The 2018 report of the *Lancet* Countdown on health and climate change: shaping the health of nations for centuries to come. *The Lancet* 392(10163): 2491.



or frameworks that relate to climate change adaptation, such as the Climate Resilience and Food Security framework from the International Institute for Sustainable Development, the Future Flooding and Coastal Erosion Risk Assessment undertaken in the United Kingdom, or the World Bank's Economic Evaluation of Climate Change Adaptation Projects in the Agricultural Sector.<sup>45</sup> Berrang-Ford et al. argue, however, that by virtue of the goals and focus of such frameworks, they "are not designed—and have negligible potential—to be used for systematic global aggregation or synthesis of nationally-reported data."<sup>46</sup>

## 2.4. Opportunities to use indicators and procedures from existing multilateral review mechanisms

30. Several researchers<sup>47</sup> note that, in implementing the global stocktake, the international climate change regime can look to other international review mechanisms and borrow relevant processes and/or indicators. In particular, the Paris Agreement's siblings among the post-2015 development agendas, especially the Sustainable Development Goals (SDGs) and the Sendai Framework for Disaster Risk Reduction, are cited as offering a set of indicators already tailored to the global level that can be applied to reveal insights into global progress on adaptation. Olhoff, Väänänen, and Dickson argue that "tweaking" these indicators for use in the global stocktake "may provide cost-effective ways for gathering information on adaptation in climate change impact areas that have been already agreed as global priorities."<sup>48</sup> Others argue for "expanding" the global and national monitoring efforts under the SDGs "to provide meaningful coverage of adaptation."<sup>49</sup> For example, the Food and Agriculture Organization is already looking to use the existing SDG indicators that it monitors to assess adaptation, and this approach can be taken for the other relevant indicators included in the framework.<sup>50</sup>

31. Likewise, one of the key messages emerging from the AC's 2018 expert meeting on national adaptation goals/indicators and their relationship with the SDGs and the Sendai Framework was that, in combination, the top-down assessment approaches put in place by the SDGs and Sendai and the bottom-up approach taken by the Paris Agreement could help "assess collective progress towards global goals."<sup>51</sup> Besides lessening the burden of reporting on adaptation, borrowing these indicators for assessing adaptation can help better connect the policy domains of sustainable development, disaster risk reduction, and climate change adaptation<sup>52</sup> which already have well-recognized synergies.<sup>53</sup>

32. Potentially relevant indicators under the SDG framework include, for example, the number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population (indicator 13.1.1); the number of countries that have communicated the establishment or operationalization of an integrated policy, strategy, or plan which increases their ability to adapt to climate change and foster climate resilience and low emissions development (indicator 13.2.1); and the number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework (indicator 11.b.1).<sup>54</sup> In addition to having relevant indicators as part of its assessment framework, the SDG process is invoked as a potential model because it shares similar overarching goals with the global

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<sup>45</sup> As footnote 14 above.

<sup>46</sup> As footnote 14 above, pg. 39

<sup>47</sup> E.g. as footnotes 13, 15, 16, 34 above.

<sup>48</sup> As footnote 15 above, pg. 59.

<sup>49</sup> As footnote 31 above.

<sup>50</sup> As footnote 31 above.

<sup>51</sup> UNFCCC Adaptation Committee. 2018. Report on the expert meeting on national adaptation goals/indicators and their relationship with the Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction. Bonn: UNFCCC, p. 4. Available at [https://unfccc.int/sites/default/files/resource/ac14\\_indicators.pdf](https://unfccc.int/sites/default/files/resource/ac14_indicators.pdf).

<sup>52</sup> As footnote 13 above.

<sup>53</sup> UNFCCC. 2017. *Opportunities and options for integrating climate change adaptation with the Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction 2015-2030*. Bonn: UNFCCC secretariat. Available at [https://unfccc.int/files/adaptation/groups\\_committees/adaptation\\_committee/application/pdf/techpaper\\_adaptation.pdf](https://unfccc.int/files/adaptation/groups_committees/adaptation_committee/application/pdf/techpaper_adaptation.pdf)

<sup>54</sup> For a full list of SDG indicators, see

[https://unstats.un.org/sdgs/indicators/Global%20Indicator%20Framework%20after%202019%20refinement\\_Eng.pdf](https://unstats.un.org/sdgs/indicators/Global%20Indicator%20Framework%20after%202019%20refinement_Eng.pdf)

stocktake, namely, assessing collective progress, offering an opportunity for countries to share experiences and lessons learned, and bolstering ambition and implementation.<sup>55</sup>

33. Under the Sendai Framework, examples of indicators relevant to adaptation include direct economic loss attributed to disasters in relation to global GDP (indicator C-1); damage to critical infrastructure attributed to disasters (indicator D-1); and the number of countries that have multi-hazard early warning systems (indicator G-1).<sup>56</sup> The Sendai Framework, however, encompasses disasters caused by natural and man-made hazards; to use data collected through its processes, it would therefore be necessary to disaggregate the data to include only climate-related natural disasters.<sup>57</sup> What's more, drawing on these indicators borrowed from the SDGs and the Sendai Framework can shed only some light on adaptation progress, offering "a rough snapshot of some adaptation outcomes;" in order to accurately depict progress and help steer adaptation-related decision-making, "country-tailored national adaptation metrics that rely on quantitative and qualitative data"<sup>58</sup> are necessary.

34. Although the SDGs and the Sendai Framework are the most commonly cited multilateral review mechanisms after which the global stocktake could be modelled, Milkoreit and Haapala (2017) also present a useful contrast between the stocktake and three other mechanisms: the International Monetary Fund's (IMF) Bilateral Surveillance, the World Trade Organization's (WTO) Trade Policy Review Mechanism (TPRM) and the Montreal Protocol's Implementation Review.<sup>59</sup> Notably, the global stocktake's focus on assessing collective, rather than individual, progress differentiates it from these other mechanisms where the collective assessment is undertaken over and above the primary function of assessing individual action. The stocktake also differs in its time horizon, which is significantly longer than those integrated in other review mechanisms.

### 3. Reviewing progress at the national level

35. In addition to the theoretical approaches and frameworks that directly address the question of assessing global or aggregated progress on adaptation, existing national-level and supranational systems for tracking adaptation progress also offer insights into how a review of adaptation progress can be done in practice. Moreover, such national-level monitoring and evaluation frameworks shed light on options for aggregating adaptation assessments; national systems aggregate information both across sectors (horizontally) and across different levels of government (vertically).<sup>60</sup> While the practice of implementing national-level systems for monitoring and evaluating adaptation efforts is still relatively nascent, several countries have already begun piloting such systems.<sup>61</sup> The design of these systems varies considerably, with differing combinations of qualitative analyses and qualitative and quantitative indicators. This chapter presents various examples of national-level systems drawn from different regions of the world.

#### 3.1. Using a scoreboard to assess progress across the European Union

36. The European Union adopted a strategy on adaptation to climate change in 2013, and published an evaluation of the strategy in 2018. The strategy defined three core objectives: 1) promoting adaptation action by its Member States, 2) climate-proofing action taken at the EU level, and 3) leading to better informed decision-making. It also outlines eight actions to meet these objectives. To evaluate the strategy, the EU decided to develop an adaptation preparedness scoreboard with key indicators for assessing the readiness level of Member States.<sup>62</sup> Based on discussions with Member States, a draft scoreboard methodology was created and then piloted in 2015. The pilot phase generated an unpublished assessment

<sup>55</sup> As footnote 16 above.

<sup>56</sup> For a full list of Sendai Framework indicators, see <https://www.preventionweb.net/sendai-framework/sendai-framework-monitor/indicators>

<sup>57</sup> Vallejo L. 2017. *Insights from national adaptation monitoring and evaluation systems*. Paris: OECD. Available at <https://www.oecd.org/environment/cc/Insights%20from%20national%20adaptation%20monitoring%20and%20evaluation%20systems.pdf>

<sup>58</sup> As footnote 37 above.

<sup>59</sup> As footnote 35 above.

<sup>60</sup> As footnote 58 above.

<sup>61</sup> As footnote 58 above.

<sup>62</sup> See [https://ec.europa.eu/clima/sites/clima/files/adaptation/what/docs/horizontal\\_assessment\\_en.pdf](https://ec.europa.eu/clima/sites/clima/files/adaptation/what/docs/horizontal_assessment_en.pdf).

consisting of national scoreboards for each Member State, and the lessons learned from this pilot were used to revise the methodology. The methodology focuses on 11 main performance areas that relate to the five steps of the EU's adaptation policy cycle. For each of the 30 indicators, the status is assessed as either being met ("Yes") or not met ("No"), and in some cases "in progress." Each indicator score is accompanied by a short narrative explaining the reason for the score. An aggregate scoreboard for the entire EU can then be built upon the national scoreboards; this aggregate scoreboard shows the status for each indicator at the bloc level (i.e. the extent to which an indicator is met, not met, or in progress across the bloc – see Figure 1).

37. This methodology offers one option for collecting and presenting information on adaptation progress across countries, though in this case the countries undergoing the assessment are bound together under the same regional policy. Despite this, there are a number of limitations to the methodology. First, the information gathered to conduct the analysis was collected through desk research, so the accuracy and the comprehensiveness depends upon what information was published and/or volunteered by Member State representatives. Further, the evaluation report discourages using the results of the assessment to directly compare Member States against one another; though two Member States may have the same score on a given indicator, what that score represents could differ significantly between the two.

**Figure 1. Aggregated adaptation scoreboard for EU member states** (reproduced from European Commission 2018)



### 3.2. Assessing progress towards desired adaptation outcomes in South Africa

38. To track its transition to a climate-resilient and low-carbon society, South Africa established a National Climate Change Response Monitoring and Evaluation System.<sup>63</sup> It consists of five primary components: monitoring, evaluation, guidance, outputs, and feedback, learning, and review. These five components apply to tracking not only adaptation and resilience, but also mitigation and climate finance. With respect to adaptation in particular, South Africa's M&E system includes three building blocks, namely, climate information; climate risks, impacts, and vulnerability; and adaptation response measures. As part of this system, nine cross-cutting and cross-sectoral "desired adaptation outcomes" were developed to complement these building blocks. Together, these outcomes paint a picture of a more climate-resilient South Africa against which progress can be assessed. Six of these desired outcomes capture the inputs necessary to enable effective adaptation (e.g. capacity building, education, and awareness programmes for adaptation), and the remaining three capture the impacts of adaptation interventions (e.g. secure food, water, and energy supplies for all citizens).<sup>64</sup>

39. According to South Africa's latest biennial update report, a "traffic light" scoring approach has been proposed to assess the progress made towards the desired adaptation outcomes.<sup>65</sup> Such an approach would score progress by assigning a colour (red, amber, or green) for each outcome based on the extent to which legal frameworks, plans, strategies, policies, programmes, and projects have been informed by risk and vulnerability profiles including climate change-related risks and impacts. It would aggregate information provided by different stakeholders and present it graphically. Over time, comparing these summaries is expected to shed light on the effectiveness of adaptation interventions and progress made in delivering climate resilience. Notably, as part of the outputs component, the results of the evaluation process contribute to fulfilling South Africa's reporting obligations under the UNFCCC, including national communications and biennial update reports.

### 3.3. Approaches to indicator-based frameworks

#### 3.3.1. The United Kingdom

40. The United Kingdom's Climate Change Act of 2008 initiated a cyclical process of assessing climate change-related risks, developing objectives, policies, and proposals to address these risks, and periodically assess progress towards these measures.<sup>66</sup> As part of this process, the independent Committee on Climate Change, which was created by the Act, prepares and submits reports to Parliament every second year that assess progress made in achieving the government's National Adaptation Programme. To conduct its assessment, the Climate Change Committee uses a two-part framework. Part one consists of an indicator framework that analyses trends in risk factors (including hazards, vulnerability, and exposure), adaptation action, and impacts. Part two consists of a decision-making analysis that assesses whether and to what extent plans are being made to prepare for climate change, and the adequacy of these plans in considering climate change-related risks and opportunities.<sup>67</sup>

41. The current assessment framework in place assigns a numerical score between one and nine for 33 adaptation priorities related to the categories of climate risk included in the government's latest climate change risk assessment. Scores are assigned on the basis of the quality of plan in place and progress made in managing risks. A score of one corresponds to a low-quality plan and low level of progress in managing risk or a lack of evidence available on risk management. By contrast, a score of nine corresponds to a high-quality plan in place and good progress made in risk management. To earn a high-quality plan score, a plan must meet criteria such as considering climate change, setting out specific actions, having an effective monitoring and evaluation component, and being up to date. To earn a good risk management score, there must be some evidence that risk is being reduced at an appropriate rate or good evidence of the impact actions are having on risks. This system was used for the first time in the 2019 assessment report; in

<sup>63</sup> See [https://www.environment.gov.za/sites/default/files/reports/nationalclimatechangeresponse\\_MESF.pdf](https://www.environment.gov.za/sites/default/files/reports/nationalclimatechangeresponse_MESF.pdf)

<sup>64</sup> See [https://www.preventionweb.net/files/65184\\_20181130nccasv4.pdf](https://www.preventionweb.net/files/65184_20181130nccasv4.pdf)

<sup>65</sup> See <https://unfccc.int/sites/default/files/resource/Final%203rd%20BUR%20of%20South%20Africa%20100.pdf>

<sup>66</sup> See <http://www.legislation.gov.uk/ukpga/2008/27>

<sup>67</sup> See <https://www.theccc.org.uk/publication/progress-in-preparing-for-climate-change-2019-progress-report-to-parliament/>

previous assessments, adaptation priorities were given a score of Red, Amber, Green, or Grey on the questions of whether there was a plan, whether actions are taking place, and whether progress is being made in managing vulnerability.

### 3.3.2. Germany

42. Germany is yet another country that has established a national-level process for evaluating its adaptation efforts. The results of the first evaluation of the German Strategy for Adaptation to Climate Change (DAS) were published in 2019, showcasing the outputs of a methodology developed to assess whether the DAS's instruments and measures are conducive to achieving its goal of "the reduction of the vulnerability and the maintenance and improvement of the adaptability of natural, societal and economic systems to the unavoidable impacts of global climate change."<sup>68</sup> The evaluation revolves around five central questions that assess e.g. what the implementation status of Germany's Adaptation Action Plan II, to what extent adaptation has been mainstreamed at the federal government level, and whether it has been possible to enhance adaptability and reduce vulnerability. The questions were answered through document analyses, interviews, a survey on implementation status, and indicator analysis.

43. This evaluation of the DAS itself complements other periodic efforts to assess the status of climate risks and adaptation in Germany, namely, the progress report on the implementation of the strategy and the monitoring report and vulnerability analysis on which the progress report was based. At the heart of the monitoring report is the indicator system developed for the DAS, which consists of 102 indicators.<sup>69</sup> Of these, 55 describe climate change impacts. An additional 42 are response indicators which describe adaptation measures or factors affecting the process of adaptation. Finally, five capture the overarching activities of the German government. The impact and response indicators are spread across the 13 action fields of the DAS, which correspond to various at-risk sectors such as health, agriculture, tourism, and trade, as well as the two cross-sectional issues, i.e. development planning and civil protection.

44. In circumstances where data cannot yet be calculated for the entire country or available data does not meet the desired quality standards, the monitoring system allows for the use of case studies to provide insights into climate change impacts or adaptation efforts. The system envisages that case studies will be replaced by a nationwide indicator in the foreseeable future once the required data is available across the country, and holds that case studies have the potential to encourage sub-national governments to make related data available if they do not do so already. Alternatively, proxy indicators may be used where direct measurement of an indicator parameter is not yet possible or further conceptual or methodological development is necessary. These are some of the ways in which the monitoring system has been designed to be adapted as new knowledge or data becomes available.

### 3.3.3. The Philippines

45. In the Philippines, a Results-Based Monitoring and Evaluation System (RBMES) has been developed to track progress made in implementing the National Climate Change Action Plan (NCCAP) 2011-2028.<sup>70</sup> The NCCAP has seven thematic priority areas that address both adaptation and mitigation, including food security, water sufficiency, ecosystem and environmental stability, human security, climate-smart industries and services, sustainable energy, and knowledge and capacity development.<sup>71</sup> For tracking purposes, each of these seven areas is accompanied by a results chain that includes ultimate, intermediate, and immediate outcomes, output areas, and indicators.<sup>72</sup> Indicators are predominantly input- and output-

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<sup>68</sup> See

[https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/politikanalyse\\_zur\\_evaluation\\_der\\_deutschen\\_anpassungsstrategie\\_an\\_den\\_klimawandel\\_das\\_-\\_evaluationsbericht.pdf](https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/politikanalyse_zur_evaluation_der_deutschen_anpassungsstrategie_an_den_klimawandel_das_-_evaluationsbericht.pdf)

<sup>69</sup> See

[https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/neuclimate\\_change\\_16\\_2015\\_evaluation\\_of\\_the\\_german\\_strategy\\_for\\_adaption\\_to\\_climate\\_change\\_das.pdf](https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/neuclimate_change_16_2015_evaluation_of_the_german_strategy_for_adaption_to_climate_change_das.pdf)

<sup>70</sup> See <https://www.iied.org/how-philippines-national-me-system-integrates-climate-development>

<sup>71</sup> See

[https://climate.gov.ph/public/ckfinder/userfiles/files/Knowledge/The%20Philippine%20NCCAP%20M%26E%20Executive%20Brief\\_FINAL%20for%20Printing.pdf](https://climate.gov.ph/public/ckfinder/userfiles/files/Knowledge/The%20Philippine%20NCCAP%20M%26E%20Executive%20Brief_FINAL%20for%20Printing.pdf)

<sup>72</sup> See [https://read.oecd-ilibrary.org/environment/national-climate-change-adaptation\\_9789264229679-en#page74](https://read.oecd-ilibrary.org/environment/national-climate-change-adaptation_9789264229679-en#page74)



oriented. For examples they assess variables such as whether water resources management laws have been reviewed and harmonized in the priority area of water sufficiency, or the number of vulnerability and risk assessments conducted in the priority area of knowledge and capacity development.

46. In 2018, the country's Climate Change Commission published a monitoring and evaluation report brief, which summarized progress made towards the intermediate outcomes in each of the seven areas.<sup>73</sup> Rather than listing scores for all the indicators, the brief instead highlights the accomplishments and gaps under five key, general headings for each priority area. The five headings include the policy context, institutional cooperation, the adaptation-development continuum, targeting of adaptation initiatives, and public finance priorities. The brief therefore offers government agencies and other decision-makers a concise, qualitative description of what meaningful progress has been made while also directing their attention to areas where progress has so far fallen short.

### 3.3.4. Mozambique

47. Mozambique published its National Climate Change Monitoring and Evaluation System (SNMAMC) in 2014.<sup>74</sup> The SNMAMC addresses mitigation, adaptation, and cross-cutting elements. Notably, Mozambique established its national system partly to help fulfil its international reporting requirements, including under the UNFCCC, and to mitigate the risk of proliferating reporting requirements arising from multilateral and bilateral sources of climate finance. At the outset, Mozambique acknowledged that the system would likely have to be revised over time as experience with the system grows and as methods for designing and implementing such systems improves over time. To reduce the cost of the system, improve integration, and increase efficiency in data collection, analysis, and reporting, the system was designed complement and be integrated with the existing monitoring, reporting, and evaluation system in place for the country's development planning and rely as much as possible on indicators and data already in use by government departments and ministries. The system includes a national and sectoral level indicator framework, climate finance tracking, vulnerability assessments at local and sectoral levels, long-term program evaluation, a learning mechanism, and a communications and results sharing component.

48. The indicator framework 123 indicators in total, of which 3 are impact indicators (which measure the ultimate effects of policies on reducing vulnerability and improving risk management) and 120 result indicators (that measure high-level intended achievements rather than delivered outputs or products). Thirteen of the result indicators are core indicators, which are prioritized, while the remaining 107 are secondary. The three impact indicators correspond to the three pillars and strategic objectives of the system; of these, the indicator related to adaptation seeks to measure variations in the climate change vulnerability index aggregated across households. This will be based on the household budget survey, which was amended to include questions related to vulnerability. To accompany the survey results, local level assessments and case studies will also be conducted in order to shed more light on the context in which vulnerability is changing. The indicator framework includes only national-level indicators because local- and project-level indicators would be highly context specific and could not easily be standardized to aggregate across the country.

### 3.3.5. Proposed indicator framework in Canada

49. In 2017, Canada launched an Expert Panel on Climate Change Adaptation and Resilience Results to investigate and make recommendations on how to best assess progress in the country's efforts to adapt and build resilience to climate change.<sup>75</sup> This Expert Panel was tasked with recommending indicators for measuring progress that align with the five action areas defined under the adaptation and resilience pillar of the country's framework climate policy. At the conclusion of its deliberations, the panel recommended 54 indicators, including input, output, and outcome indicators. Examples of indicators include the number of health care practitioners trained to identify and respond to climate-related health effects (for the action

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<sup>73</sup> See

[https://climate.gov.ph/public/ckfinder/userfiles/files/Knowledge/The%20Philippine%20NCCAP%20M%26E%20Executive%20Brief\\_FINAL%20for%20Printing.pdf](https://climate.gov.ph/public/ckfinder/userfiles/files/Knowledge/The%20Philippine%20NCCAP%20M%26E%20Executive%20Brief_FINAL%20for%20Printing.pdf)

<sup>74</sup> See

<http://www.cgcmc.gov.mz/attachments/article/176/SNMAMC%20English%20Final%20Version%2020150929%20Final.pdf>

<sup>75</sup> See [http://publications.gc.ca/collections/collection\\_2018/eccc/En4-329-2018-eng.pdf](http://publications.gc.ca/collections/collection_2018/eccc/En4-329-2018-eng.pdf)

area on protecting and improving health and well-being); maximum response times in northern, remote, and coastal regions related to search and rescue/emergency response (for the action area on supporting particularly vulnerable regions); percentage of total financial losses restored (for the action area on reducing climate-related hazards and disaster risks); the number of days of disruption to basic services and critical infrastructure (for the action area on building climate resilience through infrastructure); and the number of community-based climate-related monitoring and adaptation programs that include indigenous, local, and scientific knowledge (for the action area on translating scientific information and indigenous knowledge into action).

50. In addition to the suggested indicators, the report offers a proposed overarching approach to monitoring progress. After defining a purpose and context and developing (or refining) indicators, the next step is collecting data. For this step, although the Expert Panel does not spell out precisely how data should be aggregated across the provinces and territories in the country, it notes that the system is scalable and can be applied by individual regions or sectors. Further, the Expert Panel does recommend first evaluating data availability and existing or potential data exchange agreements, and considering various data collection and reporting relationships (e.g. federal-provincial/territorial, municipal-municipal, or from NGO or Indigenous organizations). The remaining steps include data analysis and evaluation, communicating results, and continually improving the system. Canada has not yet made available a decision on the way forward after the publication of the report.

### **3.4. Informal knowledge-exchange in Norway**

51. Norway's initial approach to assessing its adaptation progress does not rely on indicators or on a formal monitoring and evaluation system.<sup>76</sup> Rather, it made use of existing systems in place for tracking progress and underscored the importance of continuous learning in adaptation. The approach sought to build an understanding of what is working and why, and to use that information to inform policy decisions. The process was made use of a large scale knowledge-exchange process that included both informal means of gathering information and learning about adaptation progress, such as stakeholder dialogues and network support, as well as formal means, such as research and regular quantitative surveys of municipalities.<sup>77</sup> Information is also drawn from annual budget reporting on progress made towards reaching goals and downscaled climate projections. The results were then fed into national vulnerability and adaptation assessments that assess the country's progress on adaptation. As a principle, this approach was pursued such that reporting burdens placed on municipalities were reduced, and existing online and offline platforms for learning and knowledge exchange were used to increase efficiency. It is also flexible, and avoids putting in place a rigid, sequential process for assessing progress and learning, so that policy development and decision making can be more responsive. In its seventh national communication to the UNFCCC, Norway noted that a national system for monitoring and evaluating adaptation is under way; therefore, this approach may change in the future.<sup>78</sup>

### **3.5. Using questionnaires and information collection cards to assess progress**

#### **3.5.1. Brazil**

52. Similar to the monitoring and evaluation report brief published by the Philippines, Brazil's first monitoring and evaluation report for its national adaptation plan (NAP) highlights the main achievements, challenges, and actions corresponding to the cross-cutting goals, sectoral and thematic strategies, and private sector contributions being made to advance implementation of the NAP. The report was generated based in part on information collection cards sent to 13 government ministries that sought information on, among other things, the status of implementing adaptation actions, whether these actions related to the SDGs, and whether they were related to other international frameworks or national policies.<sup>79</sup> As an aggregate assessment, the report presented descriptive statistics highlighting the percentage of goals and sectoral guidelines where action had been taken in the past year, as well as the percentage of actions

<sup>76</sup> See [https://www.adaptationcommunity.net/?wpfb\\_dl=228](https://www.adaptationcommunity.net/?wpfb_dl=228)

<sup>77</sup> As footnote 77 above.

<sup>78</sup> See [https://unfccc.int/files/national\\_reports/annex\\_i\\_natcom/submitted\\_natcom/application/pdf/529371\\_norway-nc7-br3-1-nc7-br3-final.pdf](https://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/529371_norway-nc7-br3-1-nc7-br3-final.pdf)

<sup>79</sup> See <https://unfccc.int/sites/default/files/resource/2Brazil%E2%80%99s%20experience%5B2%5D.pdf>

contributing to each of the NAP's three primary objectives. The assessment of aggregate outcomes also summarizes the key achievements under each objective and the number of international frameworks to which NAP-related activities contributed; this included an overview of how many of the SDGs and SDG targets were advanced through work on the NAP. Looking ahead, the evaluation report noted that Brazil aims to enhance the monitoring and evaluation system of its NAP in the future by finding a way to include actions reported by civil society and subnational governments.<sup>80</sup>

### 3.5.2. St. Lucia

53. St. Lucia developed a monitoring and evaluation system to track progress towards its NAP and the core elements of its broader climate change adaptation policy.<sup>81</sup> The system is designed to be simple and ready to implement immediately; it does not require the use of additional government resources. By designing a simple and cost-efficient system, St. Lucia hoped to encourage long-term use of the system. It is built in part on the foundation laid by the PPCR programme, which collected information since 2012 to monitor the implementation of its projects in the country. The monitoring and evaluation system used for the programme itself was deemed too time consuming to be continued in the long term in the absence of additional support. The new system will work by collecting information through simple questionnaires on measures that contribute to the implementation of the NAP or other adaptation initiatives; questionnaires will be distributed along with the annual request for information to monitor progress made under the PPCR projects. Questionnaires are distributed to members of the country's national climate change committee and agency representatives, and solicit descriptive information on elements such as whether sectoral strategies were elaborated, major projects and programmes that integrate adaptation, whether funding was secured for implementing the NAP or sectoral plan, whether adaptation-related partnerships were established, and the implementation status of measures included in the NAP (whether not initiated, initiated, ongoing, or completed). Based on the completed questionnaires, the St. Lucia's Department of Sustainable Development will complete a monitoring template that aggregates the information. The aggregate will offer insights into the total number of sectoral strategies completed during the year, the proportion of major programmes approved that explicitly include adaptation, the total number of sectoral and cross-sectoral adaptation measures that were initiated, completed, or are ongoing, the vulnerable groups specifically targeted in measures, etc. As needed, the questionnaires will be complemented by individual or focus group interviews.

### 3.6. Approaches to assessing progress used by climate funds: the PPCR

54. National-level approaches to reviewing adaptation progress are not limited to those systems or efforts initiated by national governments. The monitoring and reporting system established by the Climate Investment Fund's Pilot Program for Climate Resilience (PPCR) offers an example of national-level systems that are applied to various countries. The PPCR, a USD 1.2 billion programme, supports developing countries in adapting to climate change by helping governments integrate resilience into their strategic planning and offering concessional or grant funding to implement the plans and pilot innovative solutions. To track investment performance and ensure accountability, learning, progress, and results in its work, the PPCR developed a monitoring and results (M&R) system that combines quantitative and qualitative methods and follows a country-driven, participatory approach.<sup>82</sup> It is based on the PPCR's results framework, which includes five core indicators including the degree of integration of climate change in national planning and the number of people supported to cope with climate change impacts. Additionally, there are six optional indicators that can be adapted to the national context when they are deemed useful.<sup>83</sup> Data collection and reporting through the M&R system follows two parallel, complementary tracks:

<sup>80</sup> See

[http://euroclimaplus.org/intranet/documentos/repositorio/Plan%20Nacional%20de%20Adaptaci%C3%B3n\\_2016.pdf](http://euroclimaplus.org/intranet/documentos/repositorio/Plan%20Nacional%20de%20Adaptaci%C3%B3n_2016.pdf)

<sup>81</sup> See

<https://www4.unfccc.int/sites/NAPC/Documents/Parties/Saint%20Lucia%20Monitoring%20and%20Evaluation%20for%20NAP.pdf>

<sup>82</sup> See [https://www.climateinvestmentfunds.org/sites/cif\\_enc/files/ppcr\\_mr\\_toolkit\\_july\\_2018\\_1.pdf](https://www.climateinvestmentfunds.org/sites/cif_enc/files/ppcr_mr_toolkit_july_2018_1.pdf)

<sup>83</sup> See [https://www.climateinvestmentfunds.org/sites/default/files/meeting-documents/revise\\_ppcr\\_results\\_framework\\_0.pdf](https://www.climateinvestmentfunds.org/sites/default/files/meeting-documents/revise_ppcr_results_framework_0.pdf)



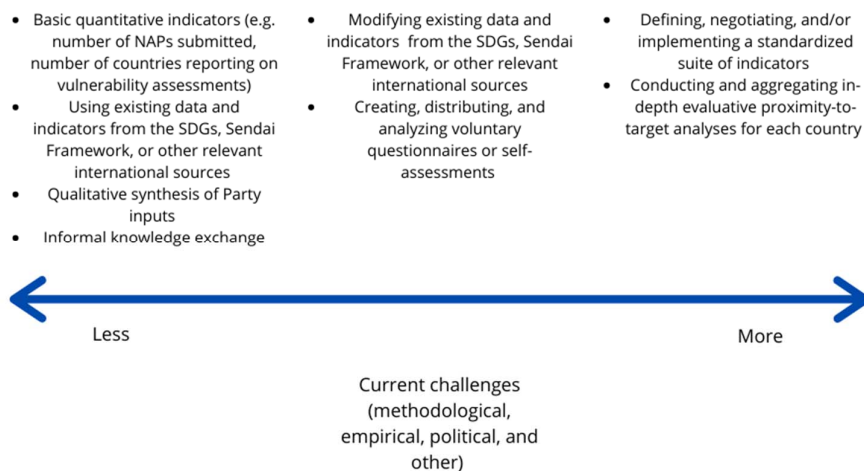
national-level country reporting and reporting from the multilateral development banks that implement the PPCR funding.<sup>84</sup> Data collection and reporting is completed on an annual basis. At the country level, PPCR focal points convene scoring workshops to establish scoring criteria and that reflect domestic development processes and institutional and policy ecosystems, and subsequently use these criteria to assess progress over time. For indicators that are qualitative in nature, this process of defining and abiding by clear scoring criteria helps ensure that subjective assessments become more consistent, reliable, and objective while remaining sensitive to national circumstances and priorities. To lessen the burden of this process, PPCR's M&R system is designed to be compatible with existing national systems and avoid duplication.

#### 4. Discussion: possible approaches to reviewing progress towards the global goal on adaptation

55. The preceding chapters illustrate the breadth of approaches to assessing adaptation progress, and some of the considerations that might influence the choice of which approach or combination of approaches can be useful for considering progress towards the global goal on adaptation. The summary of these general approaches is arranged here in a spectrum from those with less to those with more current challenges (e.g. methodological, empirical, political, etc.) (see Figure 2), recognizing that this is a way to simplify the classification rather than a comprehensive characterisation of potential approaches for the complex task of assessing the global goal on adaptation.

56. Given the methodological, empirical, political, and other challenges tied to the development and use of standardized indicators or indices, as discussed in Chapter II above, this approach arguably falls on the more challenges side of the spectrum. Similarly, if a descriptive and evaluative proximity-to-target approach, like that described by Berrang-Ford et al. is undertaken in a comprehensive manner for each country, this would likely require a great deal of resources. On the other hand, reporting on basic indicators such as the number of NAPs initiated or submitted, using existing indicators or data from international frameworks, producing a qualitative synthesis of Party inputs, or conducting an informal knowledge exchange fall on the less challenges side of the spectrum. Such efforts would build on common practices (i.e. reporting on the progress of NAPs or synthesizing documents submitted by Parties) or existing initiatives (i.e. tracking progress under other multilateral agreements) that are already in place. In the middle are approaches such as tweaking indicators or data from international frameworks or creating, distributing, and analysing voluntary national-level questionnaires or self-assessment.

**Figure 2. Spectrum of approaches to assessing adaptation progress and magnitude of associated challenges**



<sup>84</sup> See [https://www.climateinvestmentfunds.org/sites/cif\\_enc/files/ppcr\\_mr\\_toolkit\\_july\\_2018\\_1.pdf](https://www.climateinvestmentfunds.org/sites/cif_enc/files/ppcr_mr_toolkit_july_2018_1.pdf)

57. Current challenges are not the only important factors for evaluating approaches to assessing adaptation progress, when it comes to assessing progress towards the global goal on adaptation in the global stocktake; a particularly important and related consideration is the resources necessary to pursue each approach and the corresponding burden that will be placed on developing countries. Such resources include quality data, along with the capacity to collect and interpret this data.<sup>85</sup> The reporting instruments established by the Paris Agreement, including the adaptation communications under Article 7 and the biennial transparency reports for the enhanced transparency framework under Article 13, aim to avoid creating any additional burden for developing country Parties. Because the process of assessing progress towards the global goal on adaptation under the global stocktake does not create any additional reporting instruments, this principle must also be respected when considering viable approaches to carrying out this process. Indeed, efficiency, cost reduction, and taking advantage of existing systems and data are recurring themes in both the scientific literature and the national-level examples reviewed. Most countries reviewed in Chapter III above also emphasize the importance of these principles in their national systems. Craft and Fisher highlight that leveraging existing national data and systems, including those included in UNFCCC reporting instruments, could indeed offer a path forward for the global stocktake that aligns with the principles of the Paris Agreement.<sup>86</sup> They note, however, that due to the variations in what is reported across countries, this information will be difficult to aggregate and should therefore be complemented by input drawn from other sources.

58. As long as it is not burdensome—particularly considering the existing capacity constraints faced by developing countries in particular—a voluntary questionnaire or self-scoring exercise could offer a simple and sustainable middle ground for assessing adaptation progress. This could then be used to generate an aggregate scoreboard akin to the EU model, with the understanding that the same score does not necessarily translate into the same action or result across countries. A starting point for such a questionnaire or self-assessment could be whether there have been demonstrable efforts made to undertake the actions Parties agreed they should or shall pursue in accordance with Article 7 of the Paris Agreement. This includes efforts towards strengthening cooperation on enhancing adaptation action as outlined in Article 7.7:

- a) Sharing information, good practices, experiences and lessons learned, including, as appropriate, as these relate to science, planning, policies and implementation in relation to adaptation actions;
- b) Strengthening institutional arrangements, including those under the Convention that serve the Paris Agreement, to support the synthesis of relevant information and knowledge, and the provision of technical support and guidance to Parties;
- c) Strengthening scientific knowledge on climate, including research, systematic observation of the climate system and early warning systems, in a manner that informs climate services and supports decision-making;
- d) Assisting developing country Parties in identifying effective practices, adaptation needs, priorities, support provided and received for adaptation actions and efforts, and challenges and gaps, in a manner consistent with encouraging good practices; and
- e) Improving the effectiveness and durability of adaptation actions.

59. This also includes efforts to engage in adaptation planning processes and the implementation of adaptation actions as outlined in Article 7.9:

- a) The implementation of adaptation actions, undertakings and/or efforts;
- b) The process to formulate and implement national adaptation plans;
- c) The assessment of climate change impacts and vulnerability, with a view to formulating nationally determined prioritized actions, taking into account vulnerable people, places and ecosystems;
- d) Monitoring and evaluating and learning from adaptation plans, policies, programmes and actions; and

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<sup>85</sup> As footnote 58 above.

<sup>86</sup> As footnote 10 above.

- e) Building the resilience of socioeconomic and ecological systems, including through economic diversification and sustainable management of natural resources.

60. Another potential approach could focus on establishing a baseline of climate change-related risks faced by countries and thereby laying a foundation for assessing changes against this baseline over time. Given the challenges described above with regard to vulnerability indices and rankings, and the roles that risk tolerance and societal values play in assessing risk, these risks would likely be self-assessed and reported by countries. Such risk assessments could be disaggregated according to hazard or sector and temperature scenario/timescale, generating a visual representation of the differing dimensions and levels of risk as perceived by countries across the world.

61. Looking ahead, the adaptation communications and biennial transparency reports could provide the raw material for a potential proximity-to-target approach that assesses whether Parties have fulfilled, or are on track to fulfilling, the targets and actions they set. This would entail comparing the actions reported in biennial transparency reports against those communicated in previously published adaptation communications. Because the first biennial transparency reports are not due until 31 December 2024, this is likely not feasible for the first global stocktake but can remain an option for future stocktakes.

62. An important consideration that was consistently demonstrated in the conceptual work and practical examples reviewed in the preceding chapters is the need to maintain flexibility. Many of the national level systems reviewed in Chapter III had either already made adjustments to their approach, expressed the intention to do so, or acknowledged that this would likely take place as methodologies, data, and other key factors improve over time. Although the first global stocktake will set an important precedent regarding how to assess progress made towards the global goal on adaptation, and the other adaptation-related elements of the stocktake, there will likewise also probably be opportunities to iteratively improve upon this first attempt over time. Indeed, the CMA itself envisioned the potential for refining the procedure and logistics of the global stocktake over time based on its experience.<sup>87</sup> In a similar spirit, Neufeldt suggested that, given the numerous challenges associated with assessing global adaptation progress, the global stocktake could begin with a basic but flexible design that works towards more comprehensive assessments in the future.<sup>88</sup> Some fundamental organizing principles for such an approach include being broad enough to absorb the wide variety of sources and formats of information, rigorous enough to capture data to characterize progress towards the goal, and open enough to accommodate new developments in the field of assessing adaptation.

63. Besides the need to avoid creating additional burdens and maintain flexibility, another recurring theme in the literature is the value of combining various approaches in order to generate a more holistic picture of adaptation progress. Such combinations (e.g. of qualitative case studies and quantitative indicators, descriptive and evaluative assessments, standard and optional indicators) can help balance the strengths and weaknesses of the different approaches. While a combination of different approaches may help overcome some of the limitations of one given approach, there will nonetheless likely continue to be limitations with any combination chosen.

## 5. Conclusion and next steps

64. Taking place eight years after the adoption of the Paris Agreement and the establishment of its global goal on adaptation, the first global stocktake will break new ground in the effort to understand how many steps the world has taken in its journey to adapt to the adverse impacts of climate change. This paper is a first step that aims to help the AC in considering potential approaches to assessing the global goal on adaptation. It also strives to stimulate the AC's reflections on what other analysis would be helpful, what information and processes can be prioritized in the short term, and what steps can be taken to work towards progressively more comprehensive and rigorous assessments over time.

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<sup>87</sup> Decision 19/CMA.1, para. 15.

<sup>88</sup> Neufeldt H and Berrang-Ford L. Considerations for a future framework for assessing adaptation progress at the global level. In: A Olhoff, H Neufeldt, P Naswa et al. (eds). *The Adaptation Gap Report: Towards Global Assessment*. Nairobi: United Nations Environment Programme. pp. 49-55.

65. The AC may wish to:

- a) Reflect on the merits and limitations of the various potential approaches to assessing the global goal on adaptation under the global stocktake;
  - b) Discuss ways to finalize the draft technical paper, including any follow-up actions that could be undertaken;
  - c) Discuss ways to reflect the outcome of its consideration of approaches to reviewing the overall progress made in achieving the global goal on adaptation in its 2021 annual report.
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