



---

**Subsidiary Body for Scientific and  
Technological Advice**

**Sixty-second session**

Bonn, 16–26 June 2025

Item 5(a) of the provisional agenda

**Matters relating to adaptation**

**Global goal on adaptation**

**Subsidiary Body for Implementation**

**Sixty-second session**

Bonn, 16–26 June 2025

Item 11(a) of the provisional agenda

**Matters relating to adaptation**

**Global goal on adaptation**

**Third workshop under the United Arab Emirates–Belém  
work programme**

**Summary report by the secretariat**

*Summary*

This report provides a summary of the hybrid workshop held from 21 to 22 March 2025 under the United Arab Emirates–Belém work programme on indicators for measuring progress achieved towards the targets referred to in paragraphs 9–10 of decision [2/CMA.5](#), which included presentations by the experts involved in the technical work under the work programme and discussions on key topics such as data and methodology feasibility assessments, interlinkages among indicators, identifying appropriate global indicators, and analysing gaps in existing and exploring the need for new indicators.



## Abbreviations and acronyms

CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
LDC	least developed country
MOI	means of implementation
NAP	national adaptation plan
SB	sessions of the subsidiary bodies
SBI	Subsidiary Body for Implementation
SBSTA	Subsidiary Body for Scientific and Technological Advice
SDG	Sustainable Development Goal
SIDS	small island developing State(s)
UNESCO	United Nations Educational, Scientific and Cultural Organization

## I. Introduction

### A. Background

1. CMA 5 adopted the United Arab Emirates Framework for Global Climate Resilience,<sup>1</sup> which includes seven thematic and four dimensional targets.<sup>2</sup> In addition, it launched the two-year United Arab Emirates–Belém work programme on indicators for measuring progress achieved towards the targets referred to in paragraphs 9–10 of decision [2/CMA.5](#),<sup>3</sup> the modalities of which were further elaborated at SB 60.<sup>4</sup>

2. SB 60 requested the Chairs of the subsidiary bodies to convene technical experts to assist in the technical work under the United Arab Emirates–Belém work programme, including reviewing and refining the compilation and mapping of existing indicators and, as needed, developing new indicators.<sup>5</sup>

### B. Mandate

3. CMA 6 requested the Chairs of the subsidiary bodies to organize a hybrid workshop under the United Arab Emirates–Belém work programme, to take place prior to SB 62, to facilitate the work of the technical experts.<sup>6</sup>

4. CMA 6 also requested the Chairs of the subsidiary bodies to invite the experts to:<sup>7</sup>

(a) Commence their work on further refining the indicators, addressing gaps and developing new indicators, as needed, immediately after CMA 6;

(b) Produce a consolidated list of indicator options for Parties, including metadata, where available, and a progress report, to be published no later than four weeks prior to SB 62 for consideration at those sessions;

(c) Finalize and submit their inputs to the technical reports,<sup>8</sup> including their recommendations on the use of indicators, to the secretariat in time to enable the issuance of the reports no later than four weeks prior to SB 62 to allow adequate time for review by Parties and publication prior to the workshop to be held in conjunction with SB 62.

### C. Workshop overview

5. The workshop referred to in paragraph 3 above was held in hybrid format from 21 to 22 March 2025 in Bonn.<sup>9</sup>

6. Following the initial review of indicators published in 2024,<sup>10</sup> the experts continued their assessment of the indicators on the basis of their relevance to adaptation and specifically the targets under the global goal on adaptation, focusing on the criteria for potential indicators agreed at SB 60.<sup>11</sup> CMA 6 identified additional criteria for potential indicators for possible consideration by the experts and provided guidance on the final outcome of the United Arab Emirates–Belém work programme.<sup>12</sup> Given the substantial amount of technical work required to be completed within a strict timeline, the workshop primarily served as a space for the

<sup>1</sup> Decision [2/CMA.5](#), para. 6.

<sup>2</sup> Set out in decision [2/CMA.5](#), paras. 9 and 10 respectively.

<sup>3</sup> Decision [2/CMA.5](#), para. 39.

<sup>4</sup> See documents [FCCC/SBSTA/2024/7](#), paras. 30–63, and [FCCC/SBI/2024/13](#), paras. 68–101.

<sup>5</sup> [FCCC/SBSTA/2024/7](#), para. 43, and [FCCC/SBI/2024/13](#), para. 81.

<sup>6</sup> Decision [3/CMA.6](#), para. 13.

<sup>7</sup> Decision [3/CMA.6](#), para. 26.

<sup>8</sup> See documents [FCCC/SBSTA/2024/7](#), para. 47, and [FCCC/SBI/2024/13](#), para. 85.

<sup>9</sup> See <https://unfccc.int/event/workshop-uae-belem-wp-indicators>.

<sup>10</sup> Available at <https://unfccc.int/documents/640965>.

<sup>11</sup> See documents [FCCC/SBSTA/2024/7](#), para. 41, and [FCCC/SBI/2024/13](#), para. 79.

<sup>12</sup> Decision [3/CMA.6](#), paras. 17 and 21.

experts to continue their refinement of the indicators but also provided an opportunity for Parties and observers to receive an update and engage in discussion thereon.

## II. Summary of proceedings

7. The workshop began with opening remarks from the SBI Chair, Julia Gardiner, which were followed by a presentation by the secretariat on the technical experts' work since CMA 6, which included continued refinement of the indicators from a pool of 7,000, multiple virtual meetings on common approaches to and methodologies for indicator refinement, such as mapping and prioritization of indicators and analysis of gaps. The experts then provided an update on progress in their review and refinement of indicators, including approaches, challenges and examples. Discussions open to all workshop participants followed the updates.

### A. Expert updates and open discussion on the review and refinement of indicators

8. The **water** experts outlined their approach to refining indicators for target 9(a),<sup>13</sup> which involved breaking down the target into its five components: reducing climate-induced water scarcity, enhancing climate resilience to water-related hazards, ensuring a climate-resilient water supply, improving climate-resilient sanitation and ensuring access to safe and affordable potable water for all. In the first phase of their review, the experts assessed the relevance of the 1,046 indicators mapped to the target. Each indicator was assessed against the criteria and marked as “Yes”, “No” or “Maybe” in terms of their relevance to the target, with explanations provided when necessary. Of the 1,046 indicators mapped to the target, the water experts categorized at least 427 indicators as relevant against criterion (a) and at least 312 as relevant against criterion (b).<sup>14</sup>

9. In the second phase of their review, the experts adopted a methodological approach to further refining the indicators, the key principle of which was to leverage existing frameworks (e.g. the SDGs, the Sendai Framework for Disaster Risk Reduction 2015–2030) wherever possible while adhering to the criteria. If existing indicators do not adequately address elements of the target, the experts will suggest modifications or develop new indicators to supplement them.

10. The proposed indicators will be able to be traced back to the compilation and mapping of indicators and validated through the evaluation process conducted by the experts. Coordination with other thematic target experts, particularly those working on indicators for ecosystems, remains a priority, as does engagement with the United Nations Statistics Division and custodian agencies, regional commissions and national statistical offices for their input on the methodology. The experts noted that linkages between the thematic and dimensional targets (e.g. the indicators pertaining to early warning systems), as well as internationally applicable indicators (e.g. for transboundary water bodies), have been taken into consideration.

11. The **food and agriculture** target (9(b)) experts followed a similar approach, adopting a stepwise, iterative process for indicator review and refinement. The process has four steps, two of which have been and two of which are yet to be completed. First, the experts examined the target to identify the elements requiring tracking, paying close attention to the components of the target and the different geographical contexts in which it could apply. The main elements identified as relevant in terms of agrifood systems were food supply and

---

<sup>13</sup> In this report, the targets are referred to by their corresponding paragraph number in decision [2/CMA.5](#).

<sup>14</sup> In this report, the criteria are referred to by their corresponding subparagraph letter in documents [FCCC/SBSTA/2024/7](#), para. 41, and [FCCC/SBI/2024/13](#), para. 79. Here, criterion (a) refers to the relevance of the indicators to measuring progress towards one or more of the targets referred to in paras. 9–10 of decision [2/CMA.5](#) and criterion (b) refers to the specific relevance of the indicators to adaptation, including enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change.

distribution, food production, nutrition and access to food. Second, the experts mapped indicators to those elements. The third step will involve identifying gaps in the set of indicators and developing new indicators to close those gaps. In the fourth and final step, the experts will apply the agreed criteria to identify, evaluate and refine the indicators, thereby consolidating them into a manageable list.

12. The experts started with 1,801 indicators considered relevant to target 9(b) and tagged 1,134 of those indicators as relevant according to criterion (a). This list was further refined according to the indicators' relevance to the components of the target and to criterion (b). The second step of the above-mentioned process resulted in 1,116 indicators that align with both the 9(b) target elements and the adaptation-relevant criterion (b).

13. For the indicators identified as relevant to this target, most of those submitted and reviewed were found to relate to food production. While the large number of indicators relating to food production is not an issue, the experts noted that the poor quality of the indicators poses a challenge as it effectively constitutes a gap in indicator coverage. In addition, many indicators related to food supply and distribution have yet to be fully developed or refined. The experts noted that most indicators relevant to criterion (b) were related to adaptive capacity. The experts also noted that interlinkages with other thematic and with the dimensional targets had been considered, with a significant number of interlinkages with indicators related to climate hazards (target 10(a)) and implementation (target 10(c)) having been observed.

14. The **health** target (9(c)) experts adopted a similar approach to that of the experts working on other targets, namely analysing the target and agreeing on its subcomponents. The experts' approach to health indicator refinement connects health aspects of adaptation with risk assessment, planning, implementation, and monitoring, evaluation and learning. The experts screened the 747 indicators identified for health, evaluating key challenges and essential criteria for selection as they did so. In the process of developing or suggesting new indicators, the experts explained their plan to identify other applicable indicators beyond those in the current list. The list of selected indicators for this target was mapped against the additional criteria identified at CMA 6 (see para. 6 above) to identify impact indicators (e.g. effects on health systems and facilities) and outcome indicators (e.g. heat-related illness, injury and mortality from extreme weather events, and incidence of vector-borne diseases). Consequently, the health experts narrowed the initial 747 indicators down to 53, prioritizing those with robust data availability and methodological feasibility.

15. The health experts highlighted several challenges, particularly those related to data availability, data attribution and some indicators being applicable to a limited number of countries. They also identified gaps in indicator coverage, including the absence of indicators for traditional knowledge, Indigenous Peoples' knowledge and local knowledge systems and for resilience and adaptation in the most vulnerable communities. More generally, the experts observed lack of disaggregation by vulnerable group, including gender, age, disability and indigeneity.

16. The experts working on the **ecosystems and biodiversity** target (9(d)) structured their work by first analysing the target and then evaluating which indicators fit the criteria and clustering them accordingly. This process was followed by the experts discussing the interlinkages among indicators relevant to multiple thematic targets; assessing the orientation of the indicators as input, output or outcome focused; and identifying global indicators on overarching trends and common challenges. The third step in this approach will entail identifying gaps in indicator coverage and the fourth producing a consolidated list of indicators.

17. The experts working on this target provided examples of five key indicator types: ecosystem-level indicators, ecosystem service indicators, genetic diversity indicators, species-level indicators, and response solutions or support indicators. They underscored the interlinkages of this target with other thematic targets and the importance of reflecting cultural and spiritual values in ecosystem-based adaptation. Leveraging existing frameworks such as the Red List Index and the Kunming–Montreal Global Biodiversity Framework provided the experts with a common point of departure for indicator refinement. The Red List Index shows trends in overall extinction risk for groups of species due to climate-related

stressors such as temperature shifts, habitat loss and extreme weather events. Species diversity is one of the three main levels of biodiversity, and risks to species' status are an indication of pressures on biodiversity. As such, the ecosystem and biodiversity experts seek to capture trends in extinction risk and climate stressors when refining a validated set of indicators, addressing gaps and suggesting modifications, where necessary.

18. The **infrastructure and human settlements** experts identified three core areas under target 9(e): increasing the resilience of infrastructure, ensuring basic and continuous essential services, and minimizing climate-related impacts on infrastructure. They commenced their work by clarifying the context and scope of the target, as well as associated key terms, which they did by holding discussions both among themselves as well as with the experts working on the other targets and conducting a detailed review of both the decision text and relevant reports and literature. The experts also engaged with organizations such as the United Nations Human Settlements Programme and United Cities and Local Governments, as well as other experts and specialists. This initial phase of work was followed by indicator review and refinement, which entailed reviewing the indicators against the additional criteria identified at CMA 6 and existing frameworks such as the Sendai Framework, the SDGs, the Kunming–Montreal Global Biodiversity Framework and the Global Set of Climate Change Statistics Indicators.

19. Following this approach, the experts reviewed more than 1,000 indicators and refined the list to 45 indicators by identifying an indicator agreement weighting to gauge consensus among experts (number of experts who agreed to include the indicator) and reviewing the indicators against criteria (a) and (b). The infrastructure and human settlements experts noted that they prioritized interlinkages with other thematic areas. They aim to refine these indicators further, ensuring they align with the elements of the target and are practical to implement.

20. The **poverty eradication and livelihoods** experts mapped indicators under four elements of target 9(f): poverty eradication, livelihoods, social protection and other poverty eradication measures. The experts identified 391 indicators and came close to agreeing on the relevance of 120 indicators to criterion (a). Of the 318 indicators that were classified as “Yes” or “Maybe” in terms of their relevance against criterion (a), 144 were categorized under poverty eradication or livelihoods, 31 were categorized under poverty drivers or rates, 32 were categorized under measures of social protection, 61 were already identified as additional duplicates, and 50 fell under “missing information, more relevant to another target”. The experts are in the process of mapping the indicators to the four above-mentioned elements, after which they will identify gaps in the indicator set. Moving forward, they propose preparing metadata to enhance the relevance of the indicators. Lastly, the experts plan on evaluating the mapped indicators against criteria (c–i).<sup>15</sup>

21. The experts working on the poverty and livelihoods target noted challenges in clustering indicators and in ensuring indicators are measurable and directly relevant to the target. Cross-cutting elements such as gender, children and social protection have been integrated into their approach.

22. The experts working on the **cultural heritage** target (9(g)) identified its key elements as protecting cultural heritage from the impacts of climate-related risks, developing adaptive strategies and being guided by traditional knowledge, Indigenous Peoples' knowledge and local knowledge systems. Indicators for this target can be categorized in multiple ways, including both existing and new indicators. The experts reviewed 280 indicators, classifying them as “Yes”, “No” or “Maybe” in terms of their relevance against criteria (a) and (b) and ensuring classification was cross-checked among the different experts to ensure transparency and thoroughness. They noted there are many cultural heritage indicators under existing frameworks, including the Sendai Framework, the SDGs and UNESCO work on climate adaptation and resilience within the broader context of the 2030 Agenda for Sustainable Development, that consider climate adaptation and loss and damage. The experts are in the process of refining the indicators by clustering them into the aforementioned elements,

---

<sup>15</sup> See documents [FCCC/SBSTA/2024/7](#), para. 41(c–i), and [FCCC/SBI/2024/13](#), para. 79(c–i).

considering input from UNESCO and the Heritage Adapts to Climate Alliance, and identifying gaps. The last step of their work will be to finalize the proposed indicator list.

23. The cultural heritage experts proposed developing new indicators where necessary and ensured that existing indicators are refined to capture the full scope of cultural heritage and its resilience to climate change. Furthermore, the experts noted that they identified interlinkages with other targets, as well as with elements such as equity and inclusion, tangible and intangible cultural heritage, and adaptive strategies, and will aim to refine the indicators to capture these elements effectively.

24. The **adaptation cycle** experts (targets 10(a–d)) provided an overview of their progress, stating that in 2024, they rated almost 3,000 indicators for relevance to the targets and to adaptation overall. From January to March 2025, the experts met and developed an approach for the way forward.

25. Given the large number of indicators compiled under targets 10(a–d), the experts adopted a targeted approach to refining them, clustering indicators according to key elements of the target, identifying gaps in coverage and prioritizing indicators that track meaningful progress in adaptation. Their refinement of indicators included providing metadata, where available, and recommendations for use. Ensuring alignment with existing frameworks remains a priority as the experts continue to refine the indicator list and identify potential additional indicators. The experts highlighted that coordination with the experts working on the thematic targets is needed to explore the interlinkages between dimensional and thematic indicators, the role of nested indicators and the integration of cross-cutting elements into the indicators.

26. In the discussion that followed the updates by the experts, workshop participants acknowledged the significant progress the experts had made since the previous workshop, which took place in October 2024. They emphasized the need to balance the technical complexity of the work with political engagement in it. Some participants highlighted the need to build on existing frameworks and ensure interlinkages between thematic and dimensional targets, cautioning against siloed indicators. Concerns were raised about attribution-focused indicators, with some participants noting the need to shift to indicators that are action-oriented, making them more practical to implement. There were calls for a structured, coordinated approach across the work of all experts and greater flexibility for developing new indicators, where necessary. Some participants stressed the need for technical criteria for indicators, which would consider data availability, methodologies for collecting data and national circumstances related to data readiness.

27. Participants raised questions about the consideration of Indigenous Peoples in the ecosystem target indicators. Some also noted the need for the assessment of enabling factors for implementing adaptation action. Others emphasized the importance of ensuring that the experts address existing indicator gaps, while others pointed out that the approach to review and refinement should focus not on narrowing down indicators prematurely but rather on identifying the necessary information and potential structure for indicators. The discussion covered ensuring inclusivity in indicators, including by considering transboundary water bodies, child-sensitive metrics and the consideration of Indigenous Peoples in developing ecosystem-related indicators. Some participants highlighted the need to identify enabling factors and consider indicators to enhance monitoring and implementation of adaptation efforts across thematic targets.

## **B. Discussion on data readiness for indicators**

28. The discussion focused on data and methodology feasibility assessments, taking into account the additional criteria for indicators listed in paragraph 17(a–b) of decision [3/CMA.6](#). The discussion centred on whether to prioritize indicators for which existing data and methodologies are available and whether to include indicators that drive future data collection. Participants discussed the trade-offs between short-term feasibility and long-term impact of indicator use.

29. Several participants noted that prioritizing existing indicators and developing new ones are not mutually exclusive approaches. Some stressed that limited data availability should not be a disqualifying factor for the inclusion of an indicator. Others highlighted the importance of raising ambition and supporting capacity-building efforts to improve countries' data-collection systems. Discussions on creating a manageable set of no more than 100 indicators<sup>16</sup> revealed that data-collection methodologies often exist even where the collection of data lags. In cases where data collection is lacking, once the necessary structures for data collection are in place, investment in data collection becomes more feasible. Previous data readiness exercises have shown that indicators with established data-collection mechanisms tend to be consistently reported on, while those without are underreported on over time.

30. The discussion also explored how technology, including artificial intelligence, could enhance access to existing data. Concerns were raised about the role of national Governments in data reporting and governance, particularly in terms of data transparency, data ownership and the mechanisms needed to support collaboration and capacity-building for data collection.

31. Participants discussed the number of indicators needed, emphasizing that interlinkages among targets provide an opportunity for some indicators to serve multiple targets. Composite indicators, sub-indicators and nested indicators were identified as important to consider in designing an effective and meaningful outcome of this process. Proxy indicators were also discussed, particularly in terms of their role as a transitional tool for using indicators when specific data for a given indicator are unavailable.

32. One participant suggested combining indicators to create indices, whereas others expressed caution in this regard, noting that although they can serve as useful communication tools, indices have significant limitations, including that they often fail to capture the situation on the ground. Participants agreed that while existing indices that align with the targets may be considered, developing new indices should not be pursued.

### **C. Discussion on interlinkages among indicators**

33. The discussion focused on considering interlinkages among indicators, including cross-cutting indicators, indicators relevant to multiple targets, compound indicators and nested indicators, and associated challenges, as well as on the disaggregation of information for different groups of indicators. The session featured a panel discussion followed by a question and answer session.

34. The first panellist, a representative of the United Nations Office for Disaster Risk Reduction, focused on how interlinkages across targets can be leveraged to maximize the collective value of indicators to inform and drive adaptation action. The presenter highlighted how the same indicator can be used for multiple targets, thereby avoiding additional reporting burden, and provided examples of indicators used under both the Sendai Framework and the SDGs. In addition, he explained how compound indicators with sub-indicators can be used to measure multidimensional targets. For example, "economic loss" is a compound indicator measured by aggregating sub-indicators for, inter alia, agriculture, productive assets and infrastructure. Using this indicator, total economic loss due to disasters was determined to be 0.3 per cent of global gross domestic product over 2015–2023. Using the example of early warning systems, the presenter explained nested indicators, which are indicators embedded within a broader primary indicator that provide depth and accuracy in measurement. The nested indicator approach allows for a more granular analysis of complex issues than a simple "yes or no" answer, and will be, therefore, far more useful in assessing global progress in adaptation.

35. The second panellist, a representative of the United Nations Entity for Gender Equality and the Empowerment of Women, made a presentation on disaggregating climate data and using individual-level indicators, as opposed to higher-level indicators such as household-level, effectively for tracking progress in adaptation, noting the challenges of

---

<sup>16</sup> See decision [3/CMA.6](#), para. 20.

shifting from an environment-centric to a people-centric approach to doing so. The presenter provided the example that disaggregating data by gender and household composition can provide a much clearer picture of, for example, which groups are most affected by climate-induced food shortages. She stressed the importance of measuring how humans interact with the environment beyond economic purposes (e.g. for leisure, religion, subsistence), and thus of measuring adaptation progress with a broader scope. In closing, the presenter highlighted some official data sources that already include information disaggregated at the individual level and pointed to some tools, such as geographic information systems and search engine analytics, that can be leveraged to conduct assessments of and generate insights into the impacts of climate change on the most vulnerable groups.

36. The third panellist, a representative of the United Nations Children’s Fund, focused on the disaggregation of data on children and young people and how consideration of children and young people can be incorporated into the work on indicators. The presenter highlighted that these groups have specific climate vulnerabilities, such as being more sensitive to extreme temperatures, and numerous intersections with other vulnerable groups, such as people with disabilities. He explained that some climate change impacts on children under five years of age will have lifelong physical implications and that certain diseases have disproportionate impacts on young children. He noted that some indicators can be considered child-sensitive and others child-specific, and that small changes to existing indicators can make them more child-sensitive and/or child-specific. He also noted that while disaggregation by age and gender is one approach to measuring progress in the adaptation of children to climate change, much of the measurement will depend on data sources. Further, he noted that the participation of young people in adaptation action has already been shown to positively influence how governments approach adaptation. Concerning specific indicators for measuring progress under the United Arab Emirates Framework for Global Climate Resilience, the presenter highlighted that ensuring children are considered in the planning stage of adaptation action (target 10(a)) is key, but they must also be considered in the implementation thereof (target 10(c)).

37. The next panellist, one of the experts on the cultural heritage target, shared how those experts are including Indigenous Peoples as a cross-cutting consideration under other targets. She provided examples of existing indicators, including those of UNESCO measuring the capacity of natural heritage sites to reduce the vulnerability of people and ecosystems, which have clear links across several thematic targets. Regarding the dimensional targets, she explained that the cultural heritage target experts are exploring how Indigenous and local knowledge and cultural heritage can be incorporated into planning instruments such as nationally determined contributions and NAPs and how policies can be designed in partnership with local communities to align with target 10(a). Finally, she highlighted that the cultural heritage experts are looking into how to reflect the roles of young people and intergenerational equity in efforts to achieve target 9(g), particularly in contexts where Indigenous knowledge plays a significant role.

38. The final panellist was one of the adaptation cycle experts. He made a presentation on the scope of the dimensional targets and the options for indicators for measuring progress under them. He explained that one option would be to establish specific indicators for each of the four dimensional targets (10(a–d)), which could, in theory, capture all aspects of each target, and when considered in the context of the thematic targets, one could consider, for example, impact, vulnerability and risk assessment related to health, planning related to health, implementation related to health, and monitoring, evaluation and learning related to health. Alternatively, when looking at the wording of targets 10(a–d) and which indicators could be used to measure progress under them, quite different results would likely be obtained. The panellist explained that close inspection of the wording of paragraphs 9–10 of decision [2/CMA.5](#) suggests that each thematic target could have indicators for its outcome-oriented elements while also incorporating indicators linked to the dimensional targets. He suggested a way forward would be for the thematic target experts to review the adaptation cycle indicators relevant to each thematic target and present them in the consolidated list of indicators as well as explaining them in the accompanying progress report (see para. 4(b) above).

39. The focus of the question and session that followed the panellists' presentations was on how cross-cutting indicators could be included in the final indicator list and the challenges associated in aligning indicators across thematic and dimensional targets.

40. In response to a question on this topic, one panellist explained that gender data have been disaggregated for indicators under the SDGs and a similar approach could be followed for the targets under the global goal on adaptation, while noting that some target elements that affect one gender only (e.g. health during pregnancy) still need to be considered. One expert noted paragraph 21(f) of decision [3/CMA.6](#), with the caveat that not every target needs to have an indicator for every cross-cutting consideration and that experts can apply judgment as to when such indicators are relevant, feasible and impactful. One panellist highlighted that duplicate indicators should not be automatically disregarded, as these can serve as a basis for linking targets, and that when measuring impacts on people, data should always be disaggregated by age, gender and disability as a matter of principle.

41. Contributions from the floor on this topic included the following:

(a) Gender-responsiveness across indicators is critical for effectively tracking, assessing and enhancing adaptation efforts at the national and global level;

(b) Human well-being should be a priority of the global goal on adaptation indicators;

(c) Not considering national and regional priorities and data availability creates a risk of bias in reporting;

(d) Challenges exist in determining vulnerabilities across the thematic targets, in particular determining them by quantitative means;

(e) Analysis shows countries are making overall progress in relation to the adaptation cycle but are struggling with mainstreaming it across all sectors, and thus this progress could be reflected, perhaps with sub-indicators.

42. One participant cautioned against using feasibility as a stand-alone criterion for selecting indicators; noted that while compound indicators may be useful, the process of refining and selecting indicators should not be overcomplicated; and suggested that some cross-cutting considerations and disaggregation can be addressed at a later stage of the review and refinement of the indicators. In response, another participant noted that by using compound or nested indicators, cross-cutting considerations can be incorporated without overcomplication and that capturing interlinkages as part of a system, rather than as a silo, can also lead to more meaningful outcomes and ensure that policies are mainstreamed across sectors, not just under the adaptation cycle.

## **D. Discussion on global indicators and overall trends and identified gaps and new indicators**

### **1. Indicators for enabling factors for implementing adaptation action, including means of implementation**

43. The second day of the workshop began in a plenary setting with a session exploring the enabling factors for implementing adaptation action, including MOI. The discussion covered existing indicators and their applicability to global goal on adaptation targets, and gaps that need to be addressed. Themes included financial mechanisms, technological advancements, governance structures and sector-specific MOI indicators. The following question guided the first part of the discussion on global indicators and overall trends and identified gaps and new indicators: What are some examples of indicators for enabling factors for implementing adaptation action, including MOI, that have been successfully utilized in other processes, and how could similar indicators be made applicable to the global goal on adaptation?

44. One of the infrastructure and human settlements experts presented examples of how MOI can be viewed in this target area, including city-driven financial mechanisms such as direct funding, debt financing, green bonds, climate bonds and conditional transfers. The

growing trend in local government financing, where cities secure loans for adaptation with discounts based on commitments to net zero and data-sharing, was noted. In terms of technology, advancements such as digital twins, smart buildings and bioengineering were highlighted as key enabling factors. Governance was also identified as critical, with mention of land ownership, land rights and customary practices, as well as a focus on integrating climate considerations into local government decision-making processes. The expert proposed a nested approach to identifying MOI indicators, which would combine MOI indicators under broad outcomes such as climate resilience and link them to supporting actions such as training and funding. Finally, the expert suggested examples of a direct MOI indicator for target 9(e) (the amount of national climate funding available for climate change considerations in land-use planning) and of a nested approach (measuring the percentage of population resilient to climate change through training for planners or allocation of land tenure).

45. An expert on the food and agriculture target highlighted three key enablers for adaptation in agriculture: finance, capacity-building and technology transfer. They noted the importance of public-private partnerships, vulnerability assessments and increased funding for research and development on climate-resilient agricultural practices.

46. An expert on the ecosystems and biodiversity target provided examples of MOI indicators and discussed their applicability to targets under the global goal on adaptation by referencing SDG 15, which includes indicators for biodiversity financing and forest management.

47. An expert on the cultural heritage target presented the example of indicator 4.1 under SDG 11, which tracks total per capita expenditure on the preservation, protection and conservation of all cultural and natural heritage. She emphasized the importance of capacity-building measures to target 9(g), particularly training professionals in climate risk assessment for heritage sites.

48. A discussion on the Sendai Framework provided insights into how MOI are considered under other global resilience frameworks. The Sendai Framework's global target F, which relates to MOI, has eight indicators covering finance, technology transfer and capacity-building.<sup>17</sup> While these indicators capture outcomes and outputs and do not extend to inputs, where details on finance and resource mobilization reside, the structure could, nevertheless, inform the development of MOI indicators under the global goal on adaptation.

49. Some participants emphasized that MOI indicators should be part of enabling factors for the implementation of adaptation action to ensure broader adaptation efforts. Others underlined the importance of coherence across global adaptation-related frameworks, noting that existing MOI indicators could be adapted for the global goal on adaptation. Participants stressed the need for indicators at multiple levels: process, output (indicators for measuring the results of implementing adaptation actions) and outcome (indicators for assessing the impacts of adaptation). Some participants underscored the necessity of tracking finance flows, particularly from developed to developing countries, ensuring transparency and accountability in adaptation finance.

50. Following the plenary discussion, breakout groups were formed, allowing for more in-depth exchanges on the same guiding question.

51. Financial indicators discussed included the percentage of climate finance mobilized and disbursed, the number of adaptation projects funded, and the share of public and private sector investments in adaptation. Some participants argued that while these indicators provide insights into finance flows, they do not reflect the challenges that remain in ensuring accessibility and predictability of funding, especially for the LDCs and SIDS. Participants suggested that global goal on adaptation indicators should track both total funding and effectiveness of financial disbursements.

---

<sup>17</sup> Global target F is to substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of the Sendai Framework by 2030. See <https://www.undrr.org/implementing-sendai-framework/monitoring-sendai-framework>.

52. Capacity-building indicators discussed included the number of training programmes implemented, the number of institutional readiness assessments conducted and the number or diversity of stakeholders participating in adaptation planning. Participants emphasized that while these indicators help assess institutional preparedness for planning and implementing adaptation action, they often fail to capture long-term capacity retention and effectiveness. For the global goal on adaptation, it was suggested that such indicators be complemented by metrics on institutional strengthening, technical expertise and access to international support mechanisms (e.g. training programmes for banking staff). One participant suggested that indicators for enabling factors (e.g. institutional arrangements) could come under the capacity-building element of MOI, avoiding the need to consider those two areas separately.

53. Technology-related indicators discussed included adoption rates of climate-resilient technologies, investment in research and development, and availability of knowledge-sharing platforms. Some participants noted that, while useful, these indicators often overlook key barriers to the adoption, development and transfer of climate-resilient technologies, such as intellectual property restrictions and digital infrastructure limitations. For the global goal on adaptation, participants suggested complementing these indicators with those that measure, for example, equitable technology access, South–South and North–South cooperation in technology sharing, and the degree to which adaptation technologies are tailored to local contexts.

54. Reliable data collection was highlighted as a critical enabling factor, with indicators such as the number of national adaptation reports submitted, the establishment of climate data repositories and the integration of adaptation data into decision-making discussed. Participants noted that while these are useful indicators, they would not reflect the challenges that remain in ensuring data comparability and accessibility. Some proposed that global goal on adaptation indicators should emphasize the use of standardized metrics and the systematic collection of disaggregated data.

55. Governance indicators discussed included policy alignment across sectors, coordination between national and local governments, and stakeholder inclusivity in adaptation planning. Participants noted that while useful, these indicators often fail to capture the influence of short-term political cycles and shifting policy priorities. To enhance their applicability for the global goal on adaptation, governance indicators should track long-term policy continuity, the establishment and implementation of legal frameworks supporting adaptation and the effectiveness of institutional coordination mechanisms.

56. In one breakout group, some participants discussed the need for flexible global indicators that allows countries to tailor indicators to their contexts while ensuring comparability. It was suggested that indicators balance quantitative measures (e.g. financial disbursements, training sessions held, technologies adopted) with qualitative assessments (e.g. institutional effectiveness, community engagement, transparency of governance). Calls were made for harmonizing reporting mechanisms with those under existing adaptation-related frameworks to avoid additional reporting burden.

57. A discussion ensued on whether MOI indicators should be included under the umbrella of “enabling factors” or should stand alone. One participant noted that if the objective is to enhance adaptation action, MOI indicators must align with broader enabling factors such as good institutional arrangements, while another commented in response to this observation that for many developing countries, there is a clear distinction between MOI and other enabling factors, and thus MOI indicators for the global goal on adaptation should be treated separately, as without finance, capacity-building and technology transfer, adaptation action will not occur.

58. Participants then discussed how MOI have been institutionalized in the UNFCCC process over time, how they are currently reported on and their relevance to the targets under the United Arab Emirates Framework for Global Climate Resilience, and how indicator gaps can be identified and filled. One participant highlighted that the inclusion of MOI indicators in indicator development and refinement is not intended to become a political issue between contributor and recipient Parties, but rather to support and enhance the implementation of adaptation action.

59. One participant, referring to the finding from the Sixth Assessment Report of the Intergovernmental Panel on Climate Change that lack of finance is the biggest barrier to adaptation,<sup>18</sup> noted that finance should be the focus area for MOI indicators, with other participants suggesting that given finance accessibility and flows can be measured, indicators for them should be included in the consolidated list of indicator options. In addition, several participants raised the possibility of insurance being used as a financial tool for assessing adaptation, noting that insurance could be an input or output indicator, depending on whether the perspective is that of the individual or the insurer.

60. Participants discussed whether indicators for enabling factors and MOI should be incorporated into the thematic targets or considered under dimensional target 10(c), on implementation. No consensus was reached, but one participant noted that limiting such indicators to measuring enabling factors and MOI for the seven thematic targets would limit the scope of the information that could be collected. One option for addressing this issue would be to develop a single indicator, with standardized methodology that could be applied to country-specific economic sectors.

61. Participants highlighted that while existing indicators offer valuable insights into progress in adaptation, and their effectiveness in this context depends on strong institutional support, sustained political will and inclusive decision-making. Adapting these indicators for the global goal on adaptation would require ensuring accessibility of data, methodologies and tools, contextual relevance and a clear link between inputs, outputs and long-term adaptation outcomes.

62. Following the breakout group discussions, the moderators reported back to the plenary, after which a discussion followed. A key issue raised related to balancing ambition and pragmatism in defining MOI indicators. Institutional cooperation, finance flows and budget tagging were identified as critical elements to consider in the work on indicators. In the context of MOI indicators, concerns were raised about the potential earmarking of resources for technology transfer and capacity-building.

63. The need to differentiate between funding that supports long-term resilience and that which supports short-term solutions was highlighted, as was the need to track how developed countries are supporting adaptation efforts. Some participants stressed that MOI indicators should be linked to broader adaptation objectives, such as poverty reduction and capacity-building and based on best available science.

64. The need for indicators for tracking the scale-up of adaptation finance was underscored, with participants calling for stronger links between adaptation finance and access thereto and climate justice in order to ensure that country-driven needs are not locked into donor-driven processes. Participants acknowledged the significant work required to refine MOI indicators and develop appropriate metadata for tracking progress in MOI.

65. The first part of the discussion concluded with remarks by the SBSTA Chair, Adonia Ayebare, who expressed gratitude for the leadership of the SBI Chair and the support of the secretariat at the workshop. The SBSTA Chair acknowledged the rich, informative discussions at the workshop and the importance of the experts' work. He supported the opening remarks of the SBI Chair that discussions should remain technical in nature until the time is appropriate for negotiations. He thanked workshop participants and expressed optimism for the work to be conducted at SB 62 and CMA 7.

## 2. Global indicators, overall trends, identified gaps and new indicators

66. A breakout group session was conducted to enable more in-depth deliberations on the following guiding questions:

(a) How to ensure that global indicators reflect regional and national realities, while still providing a meaningful global assessment?

<sup>18</sup> IPCC. 2022. *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. P.R Shukla, J Skea, A Reisinger, et al. (eds.). Cambridge, UK and New York, NY, USA: Cambridge University Press. Available at <https://www.ipcc.ch/report/ar6/syr/>.

## (b) How to analyse gaps and explore the need for new indicators?

67. Within the context of ensuring that the final outcome of the United Arab Emirates–Belém work programme includes a manageable set of no more than 100 indicators, some participants suggested that this overall set could include a minimum number of global indicators that applies to all countries to provide an overall picture of progress in adaptation. In this regard, the experts clarified that their role is to provide recommendations for indicator selection only, noting that the final selection of indicators will be determined at CMA 7.

68. Many participants expressed concerns that global indicators might not fully capture local realities, while highlighting there is a difference between using global indicators to provide a global-level assessment and aggregating national-level data to provide the same. Several participants emphasized the importance of a bottom-up approach to indicator refinement to ensure stakeholder buy-in. Some stressed that global indicators should be informed by regional and local experience rather than dictated from the top down. The role of qualitative methodologies for data collection was also discussed, with an emphasis on incorporating diverse data sources while maintaining methodological consistency. Concerns were raised about the feasibility of countries reporting on numerous indicators, leading to calls for flexibility that would allow them to select those most relevant to their national circumstances.

69. Some participants noted that a manageable set of no more than 100 indicators would not be evenly distributed across targets and would involve overlapping and cross-cutting indicators. Others suggested that the limitation of 100 indicators could be circumvented by using nested indicators or compound indicators with sub-indicators to provide more detail. The specific concern of ensuring transboundary adaptation issues are not overlooked in the focus on national-level indicators was raised.

70. Data availability and quality emerged as significant concerns. Some participants highlighted that many countries face challenges in data collection, which could affect their ability to report on indicators effectively. Proposed solutions include allowing qualitative explanations where quantitative data are unavailable and using triangulation techniques to compensate for data gaps. Several participants suggested that indicators should not be restricted to those under existing frameworks if the frameworks lack sufficient data, arguing that developing new indicators may sometimes provide a better contextual fit. It was also reiterated that global indicators should not be used as the basis for comparing countries. However, some participants noted that the use of global indicators and the aggregation of data may risk the special circumstances of the LDCs and SIDS being overlooked, particularly when determining how to direct MOI to where they are most needed.

71. Participants proposed various approaches to balancing flexibility and standardization in reporting on indicators. Some suggested a binary reporting system (questions requiring “yes” or “no” answers) supplemented with qualitative sub-indicators to provide deeper insights into implementation progress. Others recommended disaggregating data by vulnerable group and region-specific category, such as the LDCs and SIDS. Several participants suggested aligning indicator reporting mechanisms with existing processes such as biennial transparency reports to avoid additional reporting burden. Participants also discussed challenges related to reporting mechanisms, including concerning avoiding duplication of effort and establishing streamlined processes. The discussion also touched on the importance of considering existing NAPs and nationally determined contributions in indicator selection to reflect national priorities. Some participants suggested that external agencies could assist with meeting reporting responsibilities to reduce the burden on countries.

72. While some participants called for the development of new indicators, others stressed that the immediate focus should be on the refinement of existing ones. Ensuring that recommendations at this stage remain technically sound and balanced across the adaptation targets was noted as a priority.

73. The need for future conceptual development of indicators, particularly pertaining to measuring transformational adaptation, was emphasized. One participant expressed interest in review mechanisms for refining methodologies and developing new indicators over time.

### 3. Discussion on next steps

74. This plenary discussion focused on the next steps in refining the indicators and ways to overcome the challenges faced by the experts in this work. The need to reduce the total number of indicators while ensuring the consolidated list of indicator options is comprehensive and relevant to the global goal on adaptation was highlighted as a key challenge. Some experts were of the opinion that nested indicators and composite indicators with several sub-indicators should count as one indicator. The inclusion of such indicators in the list was viewed as a way to capture the complexity and diversity of both climate change impacts and adaptation needs across countries facing different challenges while keeping the overall number of indicators manageable.

75. Participants noted that the experts should provide their recommendations on the most relevant indicators for assessing global progress in adaptation, including both existing indicators and proposals for new ones. Given concerns about the limited time left to finalize the list before SB 62, the experts suggested that they would lean towards including rather than excluding indicators while ensuring their number is manageable.

76. In response to a point raised by one of the experts regarding the definition of an indicator, some participants noted that engaging in a discussion on what fundamentally constitutes an indicator at this stage of the process could hinder progress.

77. The SBI Chair advised the experts to apply their knowledge of how indicators are used under existing frameworks in continuing their review and refinement of the indicators and to not concern themselves with the number of indicators at this point but rather focus on providing a list of indicators that includes all those they identify as appropriate.

78. Having listened to the discussions at the workshop, the SBI Chair noted that the refinement of indicators is a complex process and that, with the understanding that the consolidated list prepared by the experts will not be perfect and cannot contain all metadata and explanatory information, provisions can be made at SB 62 on how best to utilize the time remaining before CMA 7 to further refine the indicator list, including by holding a workshop.<sup>19</sup>

79. The discussion on next steps concluded with the participants expressing their appreciation for the experts' dedicated work in developing an important component of the global climate change architecture and acknowledging their significant contribution of time and expertise to this complex task.

### E. Closing

80. Before closing the workshop, the SBI Chair opened the floor for final reflections and concluding remarks.

81. Some participants reiterated the importance of identifying clear, measurable indicators for MOI that capture processes, outputs and outcomes; allowing for the development of new MOI indicators; and treating MOI indicators as distinct from other enabling factors. Concerns about potential duplication of indicators were raised by other participants, namely whether some MOI indicators should be addressed under finance rather than under the global goal on adaptation. However, many participants emphasized that MOI are integral to the global goal on adaptation. A request was made for technical terms relevant to the indicator process to be defined in the mandated progress report that will accompany the consolidated list.

82. Participants underscored the need for a balanced and comprehensive approach to indicator refinement, ensuring indicators reflect existing gaps in coverage and support implementation of adaptation actions. Many agreed that while indicators should be globally relevant, they must also be adaptable to different contexts. While data availability remains a concern, it was noted that data limitations should not prevent indicator development as they could incentivize capacity-building. Participants also highlighted the importance of aligning

---

<sup>19</sup> As per documents [FCCC/SBSTA/2024/7](#), para. 54, and [FCCC/SBI/2024/13](#), para. 92.

indicators with broader frameworks, such as adaptation finance and loss and damage methodologies.

83. The workshop concluded with closing remarks from the SBI Chair, who thanked everyone for their participation. The SBI Chair also noted that options for convening the experts virtually to provide an update on their work before SB 62 will be explored.

---