Technical report on indicators for measuring progress achieved towards the targets referred to in paragraphs 9–10 of Decision 2/CMA.5

Prepared by the expert group convened by the Chairs of the Subsidiary Bodies

8 September 2025

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I. Introduction

1. Decision 2/CMA.5 adopted the UAE Framework for Global Climate Resilience, with the purpose of guiding the achievement of the Global Goal on Adaptation (GGA). The decision defined eleven targets, seven of which are thematic targets and four align with the dimensions of the iterative adaptation cycle. The decision also launched a two-year UAE-Belém work programme on indicators.

2. Under the UAE-Belém work programme on indicators, the Chairs of the Subsidiary Bodies convened a group of 78 technical experts to support the review, refinement and development of indicators for measuring progress towards the targets of the UAE Framework (see Annex I for the list of experts). The Chairs of the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI), along with substantial inputs from the Adaptation Committee, compiled and mapped potential indicators, drawing on submissions from Parties and non-Party stakeholders as well as national reports to the UNFCCC. This database of indicators served as a foundational resource for the work of the technical experts.

3. At their 62nd session, SBSTA and the SBI requested their Chairs to invite the experts to submit to the Secretariat their final technical report, including information on methodologies and the final list of potential indicators by August 2025. Furthermore, the SBSTA and SBI requested the Secretariat to publish the report, including all relevant methodologies and indicators, no later than three weeks prior to the mandated workshop scheduled between SB 62 and SB 63.

4. This technical report summarizes the work of the technical experts following SB 62 and provides an overview of the indicators provided by the experts for consideration by Parties. This report accompanies the file containing the indicators and detailed information on each indicator.

II. Development and refinement of the proposed indicators

5. When convening the experts in September 2024, the SB Chairs allocated the experts to eight expert groups, one for each of the seven thematic targets and one for the four targets relating to the dimensions of the iterative adaptation cycle. In response to a provision from CMA.6 in Baku to enhance collaboration across the groups (Decision 3/CMA.6, para 10b), the UNFCCC secretariat facilitated that experts could allocate themselves to more than one expert group.

6. Experts, in their respective groups, have worked on the indicators, exchanging information regularly between the groups with periodic collective and peer reviews, including during a mandated hybrid workshop in March 2025 in Bonn. This work has proceeded in accordance with the criteria and guidance contained in Decisions 2/CMA.5 and 3/CMA.6 and in the draft conclusions from SB60 (FCCC/SBSTA/2024/7) and SB62 (FCCC/SBSTA/2025/4) including guidance related to the inclusion of indicators for means of implementation and other factors that enable the implementation of adaptation action.

7. The experts analysed the respective targets to identify their key components, mapping the compiled indicators under each component, reviewing them against the criteria provided by Parties, prioritizing indicators, revising and developing new indicators to address identified gaps, and providing documentation.

8. At SB62, experts provided a preliminary refined list, reducing the number of indicators under consideration from 9,529 to 492 (Table 1). During SB 62, a mandated workshop was held, where experts presented an overview of this indicator list. In the SB62 draft conclusions (FCCC/SBSTA/2025/4), Parties provided additional criteria to guide further refinement of the indicators. Part of this key guidance was to reduce the list to no more than 100 indicators that are globally applicable.

9. Following SB62, the experts immediately began the work to implement the additional guidance and criteria received. Experts focused on ensuring adaptation relevance of indicators, reducing redundancy, and ensuring coverage across thematic indicators.

10. As agreed to by Parties at SB62 (FCCC/SB/2025/L.4), a meeting of experts was convened by the SB Chairs under the UAE-Belém work programme on indicators from 20-22 August 2025 in Nairobi, Kenya in hybrid format. The meeting provided a useful platform for the experts to peer-review indicators, ensuring that the indicators are in line with the guidance while ensuring consistency across indicators, and to conduct quality control checks. Experts also reviewed and verified the information on the availability of metadata and data. The outcomes of the meeting included a final indicator template, a template for the technical report, and an agreement on the way forward to arrive at a list of no more than 100 indicators. The experts continued to work virtually after their meeting in Nairobi to complete the potential set of indicators and this technical report.

11. All experts worked on a voluntary basis and in their personal capacity. Substantial time and commitment were invested for the task which most experts performed in addition to their regular jobs. Since members of the expert group are located across almost all time zones and continents, many experts had to join calls at very early or very late hours. About 30 experts also attended the UN climate change negotiations in Baku in November 2024 where two self-organised meetings of the experts took place, and in Bonn in June 2025 where self-organised meetings of experts took place almost daily. Without the strong dedication and commitment of the great majority of the expert group, it would not have been possible to complete the task.

III. Description of the indicator set

12. The consolidated list of indicators developed by the experts is provided in a separate spreadsheet. A standardised template was developed to provide comprehensive information for each indicator. The template was updated after SB62 in response to additional guidance received from the SB62 conclusions. As shown in Table 1, for each indicator, accompanying information includes the description of the indicator and rationale for its inclusion, and potential for further disaggregation to make the information more meaningful, status of metadata and data availability, specific information on enablers, including means of implementation as relevant, and recommendations for operationalizing the indicator in terms of additional actions needed to enable reporting by the Parties.

Table 1: Template for the list of potential indicators

Item	Description
Indicator ID	New ID of the indicators. The ID starts with the target number followed by the serial number. (For e.g.: 9a01)
Indicator name	Indicator name
Disaggregation levels *(as relevant & feasible)*	Data disaggregation help understand differences and inequalities, and enhance granularity of information. Indicators for the targets of the UAE Framework for Global Climate Resilience need to capture information on social inclusion. Data disaggregation also helps capture specific information, and hence helps to reduce the number of indicators by securing the information through disaggregation of the same indicator.
Disaggregation levels *(Additional information)*	Any additional information to explain disaggregation can be provided here.
Corresponding sub-target / component	Each target, as written in the decision text, consists of several sub-components or sub-targets. The relevant sub-target/component to which the indicator is mapped is included in this column.
Description of the indicator *(with definition, qualitative information)*	The column covers the following aspects of the indicator: (i) definition(s) (where needed) (ii) qualitative information, if relevant [Para 15(f) of SB62 - Qualitative narratives are to be included, where possible, to explain the context behind some of the quantitative statistics]
Rationale for the indicator *(with adaptation and global relevance)*	The column covers the following aspects of the indicator: (i) Global applicability [Para 20a of CMA 6] (ii) Adaptation relevance [[Para 15(c) of SB62]
Other target(s) *it is relevant for*	An indicator may relate to more than one target.
Metadata availability *(Status)*	Experts are required to verify the completed columns for metadata and data collection for the final list of potential indicators (SB62, 17a). Link to the metadata to be provided, where available, with short explanation on the status.
Metadata availability *(Source & Description)*	
Data availability *(Status)*	To what extent data is available to apply the indicator (to the extent known to us). Add link to a data source where it is available. (SB62, para 17a requests to "Verify the completed columns for metadata and data collection")
Data availability *(Description)*	
Units	Specifies the measurement unit used for the indicator. Where not feasible (e.g. qualitative indicators) put "qualitative".
MOI *If this indicator is relevant to Means of Implementation, please select which aspect it is relevant to*	This is to correspond to the instruction in para 15h of SB62: "Indicators for means of implementation and other factors that enable the implementation of adaptation action are to be included"
MOI: *to measure (1) access, (2) quality and (3) adaptation finance, including provision*	SB62 asked for indicators for MOI to measure (1) access, (2) quality and (3) adaptation finance, including provision, in line with the Paris Agreement, to help Parties address needs and gaps in implementing the GGA. [SB62, 15 i]

Other enabling factors *(for which the indicator is relevant)*	This is to correspond to the instruction in para 15h: "Indicators for means of implementation and other factors that enable the implementation of adaptation action are to be included"
Operationalisation *of the indicator*	Based on the data readiness of the indicator (availability of methodology, metadata and data), a brief description of key steps to be taken for Parties to start reporting on the indicator.
Remarks	Any additional comments or remarks are included in this column

13. The table below presents the evolution in the number of indicators, from the compilation put together by the UNFCCC secretariat in September 2024 based on submissions received from Parties and observer organisations ("initial compilation"), to the refined list of indicator options submitted by the expert group ahead of SB62, to the current list of no more than 100 globally applicable indicators. To comply with the provisions of the SB62 draft conclusions, the expert group reduced and refined the indicators during July and August 2025 from 490 indicators to 100, which implied a reduction of almost 80 per cent.

Table 2: Number of indicators, by target, in the consolidated list of potential indicators

Target in paragraph of decision 2/CMA.5	**No. of indicators** *(Initial compilation)*	**No. of indicators** *(ahead of SB 62)*	**No. of Indicators** *(Final proposed)*
9a. Water supply and sanitation	1,046	33	10
9b. Food and agriculture	1,801	66	10
9c. Health impacts and health services	747	62	10
9d. Ecosystem and Biodiversity	1,294	40	10
9e. Infrastructure and human settlements	842	99	7
9f. Poverty eradication and livelihoods	391	24	9
9g. Cultural heritage and knowledge	282	63	8
10a. Impact, vulnerability, risk assessment	3,126	18	10
10b. Planning		26	10
10c. Implementation		39	11
10d. Monitoring, evaluation, and learning		20	5
Total number of indicators	**9,529**	**490**	**100**

14. The process to compile the set of 100 indicators included a process to logically connect climate impacts and risk context, adaptation actions and measurable results. Information on operationalisation of the indicators is produced through established methodologies and data. Many indicators can be disaggregated across multiple dimensions, including social, livelihood, ecosystem and geographic dimensions and this is noted as relevant. Many indicators under the four targets of the iterative adaptation cycle can be disaggregated by thematic targets including all cross-target indicators for means of implementation. Across the indicators, opportunities to engage with and be

informed by Indigenous Peoples, and local communities and their knowledge systems are clearly indicated, responding directly to a decision from CMA.6 that "Emphasizes the importance of including traditional knowledge, knowledge of Indigenous Peoples and local knowledge systems in work under the United Arab Emirates–Belém work programme" (Decision 3/CMA.6, para 15).

15. All the indicators have been peer reviewed by the experts across all groups, ensuring comprehensive coverage of various components of all the targets, while adhering to the guidance on limiting the total number of indicators to no more than 100. Indicators have been cross-referenced within thematic targets and between thematic and adaptation cycle targets, and duplication is avoided. It is recommended that the indicators not be seen in isolation but as a combination of different indicators that produce meaningful information, e.g. those capturing outputs and outcomes of adaptation under the thematic targets and those capturing actions under the iterative adaptation cycle, together with the context of climate-related impacts, exposures or hazards that are adaptation-relevant and provide information on levels of vulnerability and resilience.

16. The compilation of the indicators is not exhaustive of all possible adaptation indicators. It is a carefully curated set aimed to provide a robust foundation for assessing progress towards the targets of the UAE Framework while aligning with the guidance and criteria outlined in various decisions relevant to the Framework. The indicators reflect a balanced approach that captures the breadth of the different components of each of the targets.

9a. Water supply and sanitation

17. The global water challenges, exacerbated by climate change, underscore the urgent need to build water-related resilience for sustainable development. The majority of climate-related disasters are water-related, and most adaptation measures involve water in some form. Strengthening resilience to all water-related hazards such as floods and droughts and emerging hazards like glacial lake outburst floods, as well as water scarcity is critical for safeguarding human rights, economic stability, and environmental health. The proposed set of ten indicators address all of the sub-components of the target, including: (i) significantly reducing climate-induced water scarcity; (ii) enhancing climate resilience to water-related hazards; (iii) towards a climate-resilient water supply; (iv) towards a climate-resilient sanitation; and (v) access to safe and affordable potable water for all. One of them is a target-specific enabler indicator. The indicator selection draws from established global frameworks—such as the SDGs and Sendai Framework—while recommending modifications to ensure relevance to the UAE Framework for Global Climate Resilience, besides feasibility, and inclusivity. These interlinkages foster coherence across water, climate, biodiversity, and disaster risk agendas, supporting integrated and holistic solutions that address systemic vulnerabilities while advancing global goals. Further work is required to operationalize these indicators effectively in collaboration with relevant custodian agencies of existing global frameworks.

9b. Food and agriculture

18. The 10 proposed indicators map directly onto the three components of the food and agriculture target of the UAE Framework for Global Climate Resilience by addressing production, supply and distribution, and food and nutrition outcomes. Of the proposed ten indicators, five focus on efforts to respond to climate shocks, capturing adoption of adaptation practices and technologies across

agricultural value chains, as well as investments, and the establishment of institutional and policy frameworks critical for adaptation in food and agriculture. The remaining five indicators track the impacts of climate-related drivers and events on food and agricultural systems, including degradation of production areas, changes in yields, agricultural losses, and the prevalence of food insecurity and undernourishment. This balanced mix of action- and impact-oriented indicators provides a comprehensive and direct measure of contextual adaptation processes and system resilience. Together, the indicators align with a climate impact pathway logic that connects climate risk context, adaptation actions, and measurable results.

9c. Health impacts and health services

19. Ten indicators to assess adaptation progress in climate-related health impacts and health services were identified. The selection covers indicators monitoring progress towards reducing climate-related morbidity and mortality from heat, climate-sensitive infectious diseases, occupational heat injuries, and healthcare infrastructure. It also covers indicators tracking the attainment of resilience against climate impacts by tracking progress towards coverage of essential health services, without which climate-protective healthcare cannot occur, and the implementation of mental health and psychosocial support for climate-sensitive events. A third cluster of indicators tracks the promotion of climate-resilient health services by tracking key adaptation processes and enabling conditions, including the operationalisation of early warning systems to predict and inform early responses against key health risks, the development of vulnerability and adaptation assessments, and capacity building by training the health workforce on climate change. As such, 9c indicators enable the monitoring of climate-related health risks and the effectiveness of adaptation measures including institutional capacities. The indicators are globally applicable and operationalised through established methodologies and data, with an emphasis on disaggregation by social, livelihood, and geographic dimensions.

9d. Ecosystems and biodiversity

20. The 10 proposed indicators underscore the critical role of biodiversity and ecosystems in climate adaptation. Their identification was guided by decision text priorities of tracking climate change impacts on ecosystems, restoring degraded lands, expanding protected and conserved areas, and accelerating nature-based solutions and ecosystem-based adaptation. Healthy ecosystems serve as buffers to increasing climate hazards: for example, terrestrial, inland water, mountain, and coastal ecosystems contribute including wetlands and forests to climate resilience and attenuate storm surges, and reduce floods and landslides. This also highlights the importance of careful ecosystem management to ensure the resilience and adaptive capacity of biodiversity in the face of climate change. They also capture the substantial economic and social co-benefits from nature-based solutions and ecosystem-based adaptation by supporting food, poverty and livelihoods, and infrastructure themes. Produced by the International Union for Conservation of Nature (IUCN), the Red List Indices of Threatened Species and Ecosystems are adopted in the Kunming–Montreal Global Biodiversity Framework (GBF), and Parties to this agreement are already encouraged to integrate these measures into national reporting. With modifications in their methodology and metadata, they are appropriate adaptation indicators, capturing vulnerability, hazards, and adaptive capacity, and also identifying priority areas for intervention. Most recommended indicators are

supported by robust datasets. Some require methodological refinement and improvements for national disaggregation.

9e. Infrastructure and human settlements

21. The seven proposed indicators have been developed to measure progress towards target 9e on infrastructure and human settlements (IHS). They focus on essential services and the extent to which infrastructure and human settlement planning is adaptive to climate change to reduce climate risks and the resulting impacts on communities. As infrastructure and human settlement planning is often long-term, the IHS indicators acknowledge the importance of adaptation in relation to temperature goal overshoot, transboundary issues and critical thresholds. Additionally, we include indicators that capture complex risk and tipping points to help flag adaptation limits and triggers for potential transformative change. Noting the diversity of communities and circumstances, access to adaptive basic infrastructure and community input into the design of adaptation plans are considered important and, reporting by various levels of disaggregation is encouraged. The adaptation needs of both formal and informal settlements are highlighted in the suggested indicators. Infrastructure and human settlements intersect with a number of the other target themes (for example infrastructure to ensure basic sanitation, support food systems and provide transportation for communities) and this needs to be considered when reviewing the indicators as a whole.

9f. Poverty eradication and livelihoods

22. The nine indicators for this target have been developed in line with its components to measure progress towards effectively protecting the vulnerable, safeguarding incomes, assets and livelihoods and contributing to long-term poverty reduction and resilience building. Three indicators track the impact of climate change on poverty eradication, helping to monitor progress towards target 10f. In addition, six indicators track progress on policies and measures that reduce climate impacts on poverty and livelihoods. These include labour force diversification, private sector/enterprise adaptation, access to finance, climate risk insurances, and adaptive social protection—captured by indicators on social protection coverage and the adaptiveness of social protection systems. Impact on livelihoods is captured through disaggregation of indicators under target 10c. There are strong linkages between the poverty and livelihoods component indicators and other thematic and dimensional targets and indicators. Reducing poverty and protecting livelihoods is fundamental for enabling resilience and adaptation across sectors. At the same time, strengthening the resilience of other livelihood assets, measured by various indicators across the water, agriculture, health, ecosystems, and infrastructure targets, is also essential to reduce the impact of climate change on poverty and livelihoods. Finally, various cross-cutting indicators proposed under target 10 are essential for measuring progress towards the poverty and livelihoods target: ensuring that national adaptation plans and other relevant policy instruments include measures on poverty and livelihoods, alongside dedicated means of implementation, will be critical to reducing the impact of climate change on livelihoods and poverty eradication.

9g. Cultural heritage and knowledge

23. The proposed eight indicators focus on protection of cultural heritage from climate-related risks by assessing the development of adaptive strategies for preserving cultural practices and heritage sites

and by designing climate-resilient infrastructure, guided by traditional knowledge, Indigenous People's knowledge, and local knowledge systems. The first three indicators measure progress in reducing the impact of climate change on tangible heritage and intangible heritage and measure the level of implementation of climate adaptation. These include climate adaptation measures such as identification of climate vulnerable/at-risk sites, enhancing resilience of intangible cultural practices, and digitisation and storage of climate vulnerable heritage. The next two indicators focus on plans and policies including emergency preparedness and response plans that are in place for climate change related hazards, and climate adaptation policies, plans and strategies that include the safeguarding and protection of cultural heritage. The sixth indicator focuses on building capacity and awareness of climate vulnerable cultural heritage through climate adaptation training programs that engage with and are informed by local and/or Indigenous Peoples and their knowledge systems. The seventh indicator tracks cultural heritage specific climate adaptation measures that engage with and are informed by local or Indigenous Peoples and their knowledge systems. The eights indicator focuses on climate resilient infrastructure that includes cultural heritage buildings and sites that are retrofitted with climate-resilient materials and/or technologies, including those guided by traditional, local, or Indigenous building practices.

10a. Impact, vulnerability, risk assessment

24. The ten proposed indicators have been developed in line with the components of the target, and following the pillars of multi-hazard early warning systems: (i) Disaster risk knowledge, (ii) Observation and monitoring, (iii) Warning dissemination and communication, and (iv) Preparedness and response capabilities, wherein the first pillars on risk knowledge includes assessments of climate hazards, impacts and exposure which is also one of the components of this target. Varied levels of disaggregation are feasible for each of the indicators, including by thematic targets of the UAE Framework for Global Climate Resilience, other sectors, social categories, where relevant. Thus, the indicators under this target seek to measure some elements which are also relevant to all other targets. Indicators to monitor the application of climate risk information and comprehensive risk assessment for adaptation planning, and level of international support towards climate information and early warning systems have also been added, with disaggregation as appropriate. Given the specific nature of this target and activities therein, means of implementation for the design, development and operationalisation of early warnings and climate information have been reflected, as well as early warnings and climate information serving as enablers of several actions under other targets.

10b. Planning

25. Indicators under 10b focus on the quality and comprehensiveness of national adaptation planning processes, through the components of the target: (i) Existence of plans and policies – whether a Party has national adaptation plans, processes/strategies, or policy instruments in place; (ii) Inclusiveness and responsiveness – whether these plans are developed through participatory and transparent processes, are gender-responsive, and explicitly address the needs of vulnerable communities, ecosystems, and sectors most at risk; and (iii) Mainstreaming into broader policy frameworks – whether adaptation considerations are systematically integrated into relevant national and sectoral development strategies as well as available budgets/financial resources, ensuring

coherence and long-term resilience. The proposed indicators address policy and institutional structures, and hence capture relevant enabling factors for implementation of adaptation action.

10c. Implementation

26. The first four indicators under 10c measure the two components of target 10c: (i) whether a Party has progressed in implementing their national adaptation plans, policies and strategies, and (ii) whether, as a result of that implementation, social and economic impacts of climate hazards have been reduced. The proposed indicators build on data that are currently being collected by multiple Parties and, for the most part, metadata and well-tested data collection tools are available.

27. The second part of the indicators grouped under target 10c includes indicators for means of implementation (finance, capacity building, and technology development and transfer). These indicators apply to all targets - while they have been grouped under 10c, they should be seen as **cross-target indicators**. Related to finance, there is one indicator on the cost of adaptation actions, one on the amount of international public finance for climate adaptation, one on annual adaptation finance expenditure, and one on private sector finance related to adaptation. On cross-target aspects of capacity building, there are two indicators that capture the institutional dimension of capacity building by tracking the existence of institutional arrangements for the provision of adaptation training, and a qualitative indicator on the extent to which capacity building interventions lead to increased adaptive capacity. On cross-target aspects of technology development and transfer, one indicator is proposed that measures the degree of implementation of Parties' identified adaptation technology needs. In addition to these cross-target indicators, several targets also have target-specific indicators on means of implementation and other factors that enable the implementation of adaptation action.

28. The topic of means of implementation has a long history under the UN climate change negotiations and includes matters that cannot be resolved at the technical level, but only at the political level. Accordingly, three of the cross-target means of implementation indicators (10c06, 10c08 and 10c09) include multiple options for further discussion by Parties. For example, indicator 10c06 includes four options which vary on two dimensions: the mentioning of the term "mobilized" and the mentioning of the direction of flow from developed country Parties to developing country Parties. Table 3 outlines the difference between these four options.

Table 3: Explanation of the four options under indicator 10c06.

10c06 – Options 1-4: Amount of international public finance			
1.) Direction of flow		No direction mentioned	From developed to developing country Parties
2.) Term "**mobilized**"	Mentioned	Option 1	Option 3
	Not mentioned	Option 2	Option 4

29. Importantly, while the cross-target indicators for means of implementation have been placed in the list of indicators under 10c, they are recommended to be disaggregated across thematic targets and sectors, as they are critical for the achievement of all thematic targets.

30. For most of the cross-target indicators (from 10c05 and onwards), metadata is either unavailable or needs to be modified to better suit the intended measurement.

10d. Monitoring, evaluation and learning

31. The indicators under 10d measure both components of the target: (i) if Parties have developed and operationalised a system for monitoring, evaluation and learning (MEL) for their national adaptation efforts, and (ii) if countries have built the required institutional capacity to implement the system, including financial resources for its operation. There are five indicators in total. The first two indicators do not just track the existence of a MEL system but differentiate different stages of development of the national adaptation MEL systems since experience shows that it typically takes several years from starting the development until operation. The disaggregation also includes whether vulnerable groups and Indigenous Peoples have been involved in the development of the MEL system. To focus on the use and operation of MEL systems, two indicators capture the publication of MEL findings as well as the integration of these findings into relevant policies, legal frameworks, budgets, plans and processes. The fifth indicator assesses the institutional capacity of Parties to operate the MEL system.

IV. Status of metadata

32. Metadata plays a critical role in the effectiveness and usability of indicators, providing the essential background information, including availability of methodologies, data and their sources, and units of measurement. This helps users understand and interpret the indicators. Where complete metadata for an indicator is not currently available, an outline is provided of the efforts to be taken to make the indicator ready for reporting. Several global agencies of the UN system also have metadata that can be built upon.

a. Methodologies

33. While compiling and developing the indicators, experts examined the availability of metadata for each indicator. The description and source of metadata, including the availability of computational methodology, has been outlined in the indicator template. Metadata is available for nearly a quarter of the indicators, including where only minor modifications are expected. Metadata and methodology will need to be modified for half of the indicators. Another nearly quarter of the indicators are completely new and do not have existing metadata.

34. The metadata spans multiple sectors: water, sanitation, agriculture, health, finance, housing, ecosystems, gender equality, and disaster risk reduction. Key metadata and methodological sources cited in the proposed compendium of indicators include SDG metadata repository and other key global statistical databases. SDG 1 (no poverty), SDG 2 (zero hunger), SDG 3 (good health and wellbeing), SDG 6 (clean water and sanitation), SDG 11 (sustainable cities and communities), SDG 13 (climate action), and SDG 15 (life on land) provide the metadata and methodology for several of the indicators. Other global databases like the monitoring portal of Sendai Framework for Disaster Risk Reduction (including related SDGs), and those hosted by FAO, ILO, UN-Water, UNFCCC, UNESCO, CTCN and WHO have also been cited, which may also have interfaces with the SDGs. Metadata from UN Women's Gender and Environment indicators is also referred to for some of the indicators. Specific taxonomy and details are also drawn from the CBD and the GBF,

SEEA Ecosystem Accounting, Sanitation and Water for All (SWA), among others. Technical guidance on computational methodologies are available for many indicators through custodian organisations like FAO, UNDRR and WMO, and UNFCCC, among others.

35. Where gaps exist, it is often due to a lack of standardized approaches related to climate-specific dimensions of existing metrics. Some indicators rely on voluntary reporting or survey-based methods. Institutionalized data collection mechanisms are often proposed to address gaps. In other cases, such as capacity building, for example, agreed metrics globally do not exist. These provide the opportunity under the UAE Framework to do some innovative work that can have wider application, including in collaboration with subject matter experts and in line with locally led and community-based adaptation.

b. Data availability

36. Experts have documented the status of data availability for the proposed indicators. In nearly 30 per cent of the cases, data is available, while it is only partially available in over 60 per cent of the indicators. The latter needs modification in computation methods and data disaggregation for scaled-up reporting. Only in nearly 10 per cent of cases, the indicators do not have any data currently available.

37. Considerable amounts of data are reported in biennial transparency reports, Adaptation Communications, besides nationally determined contributions, national adaptation plans and other similar documents. Several of the indicators have regular data collection through established monitoring mechanisms of SDGs, Sendai Framework, data collected by UN agencies, regional commissions, and national statistical offices, among others. Governments have been reporting more regularly for most indicators related with SDG and Sendai Framework, while several other databases are updated regularly. However, more efforts are needed towards modification in some of the indicators to align better with the adaptation targets.

c. Disaggregation

38. The GGA decision of CMA.6 stated the importance of indicators to be aggregated across levels and disaggregated by demographic and socioeconomic characteristics, such as vulnerability, gender, age, disability, race, socioeconomic status, migration status, and status as Indigenous Peoples, as appropriate and depending on national circumstances. Based on the SDG Global Monitoring, indicators can draw upon the disaggregation already agreed under the Work of the Statistical Commission pertaining to the 2030 Agenda for Sustainable Development[1].

39. The experts employed the following criteria for disaggregation of indicators to be used based on relevance to the indicator:

    a. By social categories (e.g. sex, age, disability, migrants including displaced populations, Indigenous Peoples, and local communities) to capture information pertaining to, inter alia, social inclusion, Indigenous Peoples, participatory processes, human rights, gender equality, migrants, children and young people, and persons with disabilities, and indicators that reflect the unique vulnerabilities of children to climate change impacts across the

[1] https://docs.un.org/en/A/RES/71/313

thematic targets and, potentially, cross-cutting indicators related to education and the health of children and young people.

b. By thematic targets (as contained in para 9 of decision 2/CMA.5)

c. By sectors (as defined by the International Standard Industrial Classification of All Economic Activities)

d. By geographic distribution (e.g. rural/urban, national/local, river basins, ecosystems)

e. By climate-related hazards

f. Any other level of disaggregation as relevant to the nature of the indicator.

V. Reflections

40. The compiled list of potential indicators is the result of dedicated and coordinated support from 78 experts, who specialize in different fields relevant to the eleven targets. These experts brought an interdisciplinary lens to this important task. While working with time constraints and on a voluntary basis, the experts have made their best efforts to ensure that all components of each target are captured through the proposed indicators while retaining their meaningfulness and measurability and while remaining within the given limit of no more than 100 indicators.

41. The experts consider the following steps as important for the proposed indicators to be ready for implementation:

    a. Further enhancing methodology and other aspects of metadata, including relevant levels of disaggregation, to enhance climate-sensitivity and adaptation relevance;

    b. Developing technical guidance on methodologies, data standards, including typologies and taxonomies, and data collection;

    c. Capacity strengthening of Parties to initiate and enhance systematic collection, analysis and management of data;

    d. Collaboration with custodian agencies of official data sources, as relevant to the proposed indicators, to provide and facilitate technical support and improve capacities for measuring and monitoring data. This is also critical to avoid duplication and ensure coherence in data collection and reporting efforts, thus reducing the reporting burden of Parties;

    e. For new indicators, identifying and collaborating with entities that have known subject matter expertise to enhance the robustness of metadata and capacity-building of countries to enable reporting;

    f. Ensuring that Parties effectively engage with national statistical offices and other members of national statistical systems, together with regional statistical bodies and international agencies responsible for aggregating, analyzing and reporting data at regional and global levels, in line with Decision 3/CMA.6 para 11;

    g. Establishing mechanisms for peer exchange to promote international data cooperation, among Parties and with technical organisations with specialization in specific datasets.

42. Adaptation is a dynamic process where the evolving landscape will necessitate revisiting the relevance and feasibility of indicators. Regular reviews and updates should therefore be planned to

ensure that the indicators remain robust, responsive, and fit for purpose. A review process, potentially aligned with Global Stocktake cycles, to revisit the indicators, incorporating lessons from implementation and increasing data availability, will be important to keep pace with the evolving body of knowledge and emerging science.

43. The experts reiterate that the constitution of this group has provided an opportunity for bringing together experts from different skills and backgrounds around a common purpose and to apply multi-disciplinary perspectives. The experts believe that the work on indicators under the UAE Framework for Global Climate Resilience provides an opportunity globally to do both meaningful work and open the space for more innovative work around adaptation measurement to be able to track progress and gaps on adaptation under the Paris Agreement.

Annex 1: Experts convened by the SB Chairs to assist in the technical work under the United Arab Emirates–Belém Work Programme

No	Name of expert	Affiliation
1	Abid Hussain	International Centre for Integrated Mountain Development
2	Aditi Mukherji	CGIAR
3	Ahmed Abdelrehim	Centre for Environment & Development for the Arab Region and Europe
4	Alida Saleh	JLL Sustainability for Middle East and Africa
5	Animesh Kumar	UNDRR
6	Anna Hulda Olafsdottir	Climate Services and Adaptation, Icelandic Meteorological Office
7	Arig Gaffer Bakhiet	Sudanese Environment Conservation Society
8	Åsa Sjöström	Swedish Meteorological and Hydrological Institute
9	Carlos Corvalan	University of Sydney, World Health Organization
10	Catherine Simonet	French Development Agency
11	Charles Tonui	African Research and Impact Network, Kenya
12	Christiana Photiadou	European Environment Agency
13	Christopher Trisos	African Climate and Development Initiative, University of Cape Town
14	Çiğdem TUĞAÇ	Ankara Haci Bayram Veli University, Turkyie
15	Constantinos Cartalis	National and Kapodistrian University of Athens
16	Debra Roberts	University of KwaZulu-Natal, South Africa
17	Dennis Del-Castillo Torres	Research Institute of the Peruvian Amazon
18	Dicksha Mewa Hurdowar	Statistics Mauritius
19	Donovan Burton	Informed.City Pty
20	Elisabeth Gilmore	Carleton University

21	Ewa Jackson	ICLEI Canada
22	Feng Hu	silkroad.earth
23	Ian Ruru	New Zealand Ministry for the Environment
24	Israel Torres	Government of Panama
25	Jan C. Semenza	Umea University, Sweden
26	Jayshree Mungur-Medhi	Mauritius National Heritage Fund
27	Jennifer Elizabeth Christie	New Zealand Ministry for the Environment
28	Jeremy Hess	Lancet Countdown
29	Joanna Post	UNESCO
30	Johanna Nalau	Griffith University
31	Jorge Enrique Gutiérrez Valderrama	Government of Colombia
32	Julia Yvonne Wolf	FAO
33	Juliana Baladelli Ribeiro	Boticario Group Foundation for Nature Protection
34	Juma Xipaia de Carvalho	Brazil Ministério dos Povos Indígenas
35	Jyoti Hosagrahar	UNESCO
36	Karina von Schuckmann	Mercator Ocean International
37	Kieran Mooney	UN CBD
38	Kim Dowsett	UK Climate Change Committee
39	Lama Zakzak	Mohammed Bin Rashid School of Government, UAE
40	Laura Astigarraga	Faculty of Agronomy, University of the Republic, Uruguay
41	Laura S. Lynes	The Resilience Institute
42	Lisa Green	Pacific Community
43	Luckson Zvobgo	African Climate and Development Initiative, University of Cape Town
44	Lucy Njuguna	CGIAR

45	Marek Szilvasi	SLYCAN Trust
46	Margarita Jesarela Lopez Aguilar	Mexico National Institute of Statistics and Geography
47	Marina Romanello	University College London
48	Michael Cote	Adaptation Without Borders
49	Michael Nagy	UNECE
50	Michael Weisberg	University of Pennsylvania
51	Michelle Mycoo	University of the West Indies, Jamaica
52	Mir Rashed Sohel	International Centre for Environment Management
53	Mónica Gabay	Argentina's Undersecretariat of Environment
54	Natalia Odnoletkova	Kingdom of Saudi Arabia Ministry of Energy
55	Nathalie Peutz	NYU Abu Dhabi
56	Nega Emiru Debela	International Platform for Adaptation Metrics
57	Nfamara K Dampha	University of Minnesota - Twin Cities, USA
58	Ousmane Seidou	University of Ottawa
59	Portia Adade Williams	CSIR - Science and Technology Policy Research Institute, Accra-Ghana
60	Prakash Bista	UNDP
61	Pramod K Singh	“Tribhuvan” Sahkari University, Institute of Rural Management Anand, India
62	Robbert Biesbroek	Wageningen University & Research, Netherlands
63	Rohini Kohli	UNDP
64	Rosanne Martyr	Climate Analytics
65	Saddam Qahtan Waheed	Iraqi Ministry of Water Resources
66	Samuel Tetteh Partey	Green Climate Fund
67	Sara Duerto Valero	UN Women
68	Shouro Dasgupta	Euro-Mediterranean Center on Climate Change (CMCC)

69	Sonam Gyelpo	Department of Environment Climate Change, Bhutan
70	Stephanie Morris[2]	White House Council on Environmental Quality and U.S. Department of Agriculture
71	Theresa Wong	IPCC Working Group II Technical Support Unit; Singapore Management University
72	Tiago Cisalpino Pinheiro	Brisa Soluções Ambientais
73	Timo Leiter	London School of Economics and Political Science (LSE)
74	Tom Slaymaker	UNICEF
75	Valeria Nesterenko (covered during her maternity leave by Jana Bischler (ILO)	ILO
76	Vladislav Arnaoudov	Adaptation Fund
77	Yasuaki Hijioka	Japan National Institute for Environmental Studies
78	Zhuolun Chen	UNEP

[2] The expert left the group in early 2025.