Adaptation **C**ommittee

AC27/STRAT/9

25 April 2025
Version 02.0

Technical guidance and training materials to support the implementation of the UAE Framework for Global Climate Resilience

Updated draft strategy paper

Recommended action by the Adaptation Committee

The Adaptation Committee (AC), at its 27th meeting, will be invited to consider this strategy paper and agree on an approach to respond to the mandate contained in paragraphs 44 of decision 2/CMA.5 to support the implementation of the UAE Framework for Global Climate Resilience through technical guidance and training materials thereon. The AC will be invited to agree on next steps, including an initial set of activities to undertake in response to the mandate and associated timelines and partners.

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1. Background and mandate

1. In 2023, the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) at its fifth session (CMA 5) adopted the United Arab Emirates (UAE) Framework for Global Climate Resilience,[1] and decided that the purpose of this Framework "is to guide the achievement of the global goal on adaptation and the review of overall progress in achieving it with a view to reducing the increasing adverse impacts, risks and vulnerabilities associated with climate change, as well as to enhance adaptation action and support."[2]

2. By paragraph 44 of the same decision, the CMA invited the AC, in collaboration with the Consultative Group of Experts (CGE) and the Least Developed Countries Expert Group (LEG), to support the implementation of the UAE Framework for Global Climate Resilience with technical guidance and training materials thereon.

3. At AC 25 (March 2024), the AC considered an information note[3] in relation to this mandate and agreed to:

a) Expand the mapping of existing technical guidance and training materials relevant to the UAE Framework for Global Climate Resilience and its targets, themes and cross-cutting considerations, and prepare an analysis to identify technical guidance and training needs relevant to implementing the UAE Framework for Global Climate Resilience (First draft was to be prepared in advance of SB 60 (June 2024);

b) Gather inputs from Parties and other stakeholders, including through an in-person session at SB 60 (June 2024), and to consider the outcomes of the Adaptation Forum (18-19 March 2024) and issue a survey for further input after June 2024; and

c) Prepare a strategy paper, based on the preparatory work above for consideration by AC 26 (September 2024).

4. At AC 26 (September 2024), the AC considered a draft strategy paper[4] prepared and requested the secretariat to share the full list of technical guidance and training materials compiled in the mapping with members; the AC also agreed to:

a) Reopen the surveys and consider additional opportunities to collect inputs;

b) Continue considering and refining the draft strategy paper during 2025, including the consideration of publication modalities related to the compiled resources;

c) Continue engagement and collaboration with the CGE, LEG, and other relevant constituted bodies and partners, emphasizing the importance of collaboration for this mandate.

5. After AC 26, the surveys were reopened and two further responses from Parties as well as two additional technical guidance/training resources have been submitted to date.

6. At an intersessional meeting in March 2025, AC members discussed that products planned as part of the 2025-2027 flexible workplan of the AC may form part of the response to this mandate but should be complemented by additional products to ensure a comprehensive response. During a call in April 2025, the AC, the CGE and the LEG shared updates on their recent work relevant to the mandate and discussed ways to enhance their future collaboration.

7. This document presents the updated outcomes of the mapping of existing technical guidance and training materials, the desk review of literature and national reports, and the survey of Parties and organizations. Based on this preparatory work, this document outlines a draft strategy for consideration by the AC to prioritize and plan its work in response to this mandate. This strategy includes potential priority themes, product types, timelines, partners, and other key considerations to support the deliberations of the AC, in collaboration with the CGE and the LEG.

[1] Decision 2/CMA.5, para. 6
[2] Decision 2/CMA.5, para. 7.
[3] See AC25/INFO/5A.
[4] See AC26/STRAT/5.

8. At AC 27, the AC is invited to:

   a) Identify and prioritize key deliverables that address the mandate;

   b) Incorporate these deliverables into the 2025–2027 workplan;

   c) Request the secretariat to develop detailed concept notes for each prioritized deliverable, to be reviewed and refined at AC 28;

   d) Engage with key partners as per the mandate, including the CGE and LEG, to share any decisions taken and explore further collaboration opportunities.

9. The decisions taken with respect to this mandate will be documented in and communicated to Parties through the AC's annual report to CMA 7.

2. Insights from relevant literature and national reports

10. A desk review of national reports and relevant literature was undertaken to determine which technical guidance and training gaps, needs, and priorities relevant to implementing the UAE Framework for Global Climate Resilience have already been identified by Parties, researchers, and organizations.

2.1. Insights from national reports

11. In their national documents submitted to the UNFCCC, many Parties have included information that sheds light on areas where additional technical guidance or training materials may be needed. This includes information provided in relation to capacity-building, acknowledging that not all capacity-building gaps and needs would necessarily be best met by technical guidance and training materials.

12. According to the 2023 nationally determined contribution (NDC) synthesis report prepared by the secretariat, "75 per cent of Parties identified [*in their NDCs*] capacity-building as a prerequisite for NDC implementation" and 55 per cent specifically expressed capacity-building needs for adaptation (compared with 40 per cent for mitigation).[5] The report further highlights that 65 per cent of Parties identified multisectoral or intersectoral capacity-building needs. Sector-specific capacity-building needs were also referenced in NDCs in sectors such as agriculture, buildings and infrastructure, food, disaster management and response, ecosystems, fisheries, forests, tourism, health, transportation, and water. Additionally, in relation to the type of capacity-building needed, a quarter of Parties cited capacity-building "for facilitating training, education, upskilling, awareness-raising, research, innovation, development, and providing incentives and support to businesses and entrepreneurs." The importance of institutional capacity-building to raise awareness of climate change among government officials and human resource capacity to manage climate risks was also emphasized by 15 per cent of Parties. Finally, Parties also noted specific stakeholders for which capacity-building is needed; one-fifth of Parties noted the need to support women, youth, and vulnerable groups participate in decision-making processes through capacity-building efforts.

13. In its 2024 synthesis report on the implementation of the framework for capacity-building in developing countries, the secretariat outlines additional capacity-building needs related to adaptation as included in Parties' biennial reports, biennial update reports, and national communications.[6] This includes institutional capacity-building needs in relation to implementing resilience mechanisms for urban areas and other settlements, including in vulnerable sectors like agriculture, water, and health; and to enhancing planning of sector-specific climate action, appointing more focal points for climate change adaptation and increasing resources for generating data for decision-making and planning.

14. Further, according to the report,[7] capacity-needs specific to impact, vulnerability and risk assessment include:

[5] See document FCCC/PA/CMA/2023/12, paras. 203–206.
[6] See document FCCC/SBI/2024/2.
[7] Note: the synthesis report lists these needs under subheadings of "Vulnerability and adaptation assessment" and "Capacity-building for implementation of adaptation measures." They have been re-clustered here along the iterative adaptation cycle for the purposes of better supporting considerations in relation to the UAE Framework for Global climate Resilience.

a) Promoting stakeholder engagement, inter alia, by providing training on participatory approaches, facilitating multi-stakeholder dialogues and incorporating local knowledge and perspectives into vulnerability and adaptation assessment;

b) Enhancing knowledge on scenario planning techniques to enable assessment of future climate impacts and development of adaptation strategies at the institutional and individual level;

c) Enhancing institutional capacity to collect, analyse and interpret data for vulnerability and adaptation assessment;

d) Identifying climate change vulnerabilities;

e) Enhancing early warning systems for climate-related disasters.

15. Needs relevant to planning include:

a) Developing medium- and long-term adaptation action to minimize climate impacts;

b) Integrating climate change adaptation into national, sectoral and subnational planning and budgeting processes.

16. Capacity-building needs in relation to the implementation of adaptation measures were also identified. These include:

a) Strengthening institutional and technical capacity for implementing identified priority adaptation actions;

b) Building evidence-based support for policy implementation to enhance climate change adaptation governance and legal frameworks;

c) Providing training on greenhouse and aquaculture infrastructure, climate- and disease-resistant food crops, affordable feed for livestock and poultry, and disease-resistant animals.

17. Finally, other adaptation-specific capacity-building needs referenced in the report include accessing funding for adaptation through multilateral funding mechanisms and promoting community-based disaster risk reduction measures.

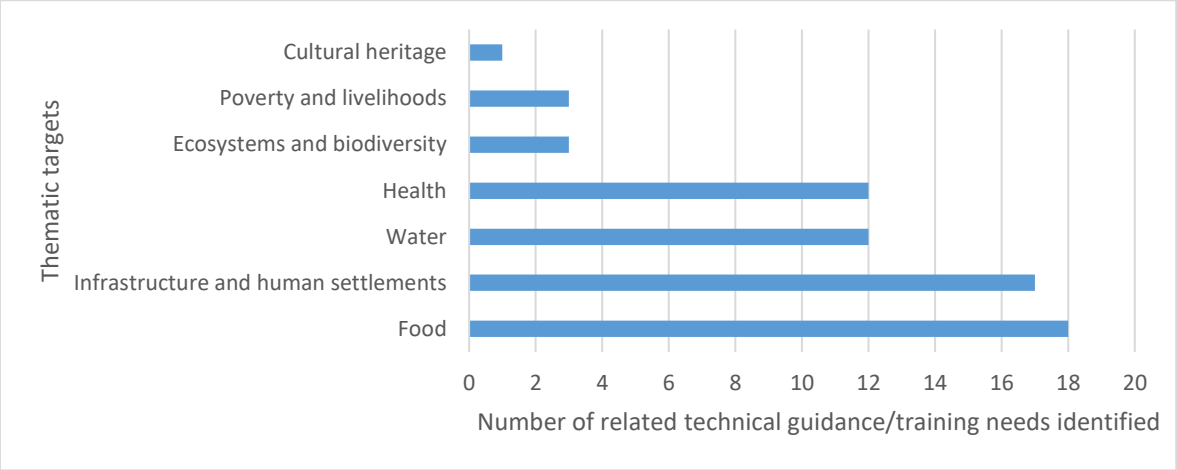
18. To complement the above syntheses and sources, information contained in national adaptation plans (NAPs), NDCs, and adaptation communications (adcoms) related to capacity-building and adaptation gaps, barriers and challenges was further scanned for explicit guidance and training needs articulated by Parties. This does not include, therefore, references to trainings or guidance planned to be undertaken by the Party or general references to the importance of these types of activities for advancing adaptation. This additional layer of analysis was intended to complement the syntheses of more general capacity-building gaps and needs with those for which Parties have already identified guidance or training to be the appropriate type of support.

19. A total of 136 specific needs or gaps with reference to guidance or training were identified, of which 92 per cent related to training, 7 per cent related to guidance, and the remaining 1 per cent concerned both training and guidance. Table 1 provides examples extracted from the reports.

20. Parties report a wide range of gaps and needs relevant to implementing the UAE Framework for Global Climate Resilience for which technical guidance and training materials may be helpful. These range from general knowledge and awareness raising on climate change and adaptation to hands-on training in key skills and technical capacities. Many of the gaps and needs relate to multiple aspects of the UAE Framework for Global Climate Resilience. Some Parties also comment more generally about the approach that should be taken in this respect, for example, shifting from theoretical workshops to practical hands-on and certified trainings for national practitioners.

21. Figure 1 below displays the number of gaps and needs identified that are relevant to the thematic targets of the UAE Framework for Global Climate Resilience. The top themes are food, infrastructure and human settlements, water, and health.

Figure 1
Number of technical guidance and training gaps and needs identified in national documents per thematic target



22. Figure 2 below displays the number of gaps and needs identified that are relevant to the iterative adaptation cycle targets of the UAE Framework for Global Climate Resilience. Impact, vulnerability and risk assessments have the most identified needs

Figure 2
Number of technical guidance and training gaps and needs identified in national documents per thematic target

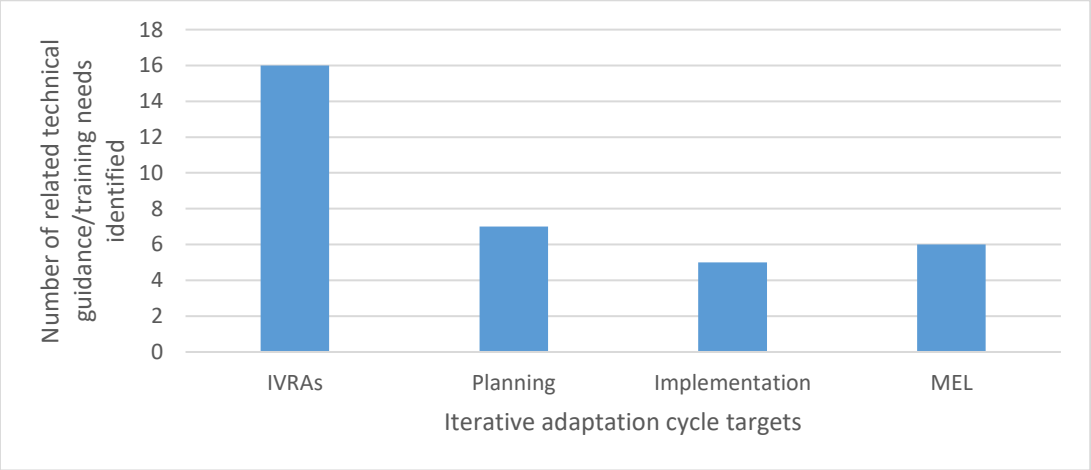


Table 1
Examples of technical guidance and training needs identified in NAPs, NDCs and adcoms

Category	*Topic*	*Examples of training or guidance needs identified in national reports*
Thematic targets	Water	• Training farmers in water management, flood and drought forecasting • Training to operate desalination and wastewater treatment plans and to monitor and assure the quality of effluent
	Food and agriculture	• Trained livestock and crop experts • Training in the use of weather data • Training in the cultivation of saline-tolerant crops
	Health	• Promote actions for the training of trainers, local promoters, and health professionals to provide health services in indigenous communities • Health professionals would need to be trained in use of the monitoring and safety systems
	Ecosystems and biodiversity	• Training of stakeholders (decision-makers, technicians, farmers, local authorities) in the development of integrated projects for the conservation of biological resources (taking into account climate change) and in ex situ and in situ conservation methodologies • Training in remote sensing, use of geographic information systems, and landscape ecology
	Infrastructure and human settlements	• Training to ensure that the rehabilitation of industrial facilities takes climate change into account • Decision support and guidance for municipalities in preventing climate risks in planning • More training would improve the emergency response of local electricity companies to interruption of the electricity grid, during extreme weather conditions
	Poverty eradication and livelihoods	• Education and training to ensure the right skills are developed for off-farm and green jobs • Training and awareness-raising measures informing the public about the consequences of climate change for their livelihoods and means of subsistence
	Cultural heritage	• Traditional practices may become less suitable to the changing climate and lead to lower social outcomes. Alternatives may need to be considered by communities e.g. agricultural practices; and will need to be accompanied by education and training
Iterative adaptation cycle targets	Impact, vulnerability, and risk assessment	• Training in predictability theory and interpretation of climate data • Training in the repair and maintenance of hydrometeorological stations

	Planning	• Training in relation to the identification and mainstreaming of climate change adaptation technologies into the sectoral policies, strategies and development plans, and promotion of regional and international cooperation and coordination for adaptation technology transfer
	Implementation	• Train state managers at all levels on climate change planning, implementation, M&E for climate change adaptation
	Monitoring, evaluation, and learning	• Guidelines for concrete monitoring and evaluation mechanisms equipped with standards for calculating achievement targets • In-depth training of national government representatives and stakeholders on the NAP monitoring and evaluation system will be an ongoing requirement
Cross-cutting considerations	Participatory approaches	• Knowledge and know-how on active participatory research methods (decentralized administrations), associations, NGOs, researchers and other development actors - these trainings must focus on the adaptation of vulnerable groups to the impacts of climate change
	Gender-responsive approaches	• Invest in gender-responsive training, promote more entrepreneurial skills among women and provide access to technology and finance that supports their participation
	Children and youth	• Promote awareness and training programmes for local governments and the general population, with emphasis on children and young people
	Vulnerable ecosystems, groups and communities	• Separate adaptation guidelines for each vulnerable group • Need to inform and train leaders and facilitators of provincial, local and community forums on themes related to the adaptation of vulnerable groups to climate change
	Best available science	• Promote research, development and innovation in topics related to adaptation by strengthening the training of researchers with an interdisciplinary approach
	Private sector engagement	• Promote the creation of spaces for exchange and training on good environmental practices in the tourism sector
Means of implementation	Finance	• Continuous awareness creation, education, and training to build capacity at all levels to facilitate access to climate financing to support local projects and programs • Training in project formulation, reformulation and design of financial and bankable instruments • Guidance and training on climate change adaptation funding analysis

	Capacity-building	• Facilitating capacity building through education, awareness and training programs on climate change risk management and resiliency measures in order to strengthen capacity at the community and sectoral level, within municipalities, local authorities and the private sector
	Technology	• Supporting and training community organisations to build capacity and support the roll-out of clean technologies and climate resilient practices and programmes, e.g., farming communities, and encouraging the mainstreaming of gender in climate change issues
Factors crucial to enabling the implementation of adaptation action	Data and knowledge	• Direct hands-on training on climate change data collection across different sectors
	Skills and education	• Long-term and short-term training to build technical capacity across sectors, including university programs and degrees • Support to promote, develop and implement formal and non-formal education and training programs as well as to strengthen teachers and educators focusing on climate change at all levels
	Strengthened and inclusive governance	• Promote the strengthening of institutional governance of water resources, based on aspects such as effectiveness (training, coherence between policies, appropriate scales for basin systems, clear roles and responsibilities), efficiency and participation

2.2. Insights from relevant literature

23. The IPCC (2022), in the contribution of Working Group II to the Sixth Assessment Report, concludes with high confidence that "[e]nhancing climate change literacy on impacts and possible solutions is necessary to ensure widespread, sustained implementation of adaptation by state and non-state actors." Among the options to boost literacy, they highlight everything from training workshops and access to information and education to arts programmes and storytelling.

24. Moreover, the IPCC points to various examples of training that are necessary or beneficial to support adaptation action. Examples include training medical professionals to recognize and treat potential new diseases specific to their region, mental health first aid training for medical care providers and first responders, training and capacity-building for effective adaptation in agriculture, training in relation to the use of drought-tolerant crop varieties, training to deploy technologies for climate change adaptation, training for adaptation under changing risk conditions, and labour market training to facilitate an industrial systems transformation in support of climate-resilient development. In addition, the IPCC identifies some training needs in relation to specific stakeholders; this includes, for example, education and training for women's groups in the Pacific Islands, who have had less access to educational and training schemes in the past. The report also includes indications of what factors increase the effectiveness of training. For example, training and capacity-building aimed at helping farmers adopt new technologies and practices are more effective when farmers are consulted in the conceptualization and implementation of the training.

25. Throughout the report, training is portrayed both as an adaptation response in itself as well as an important enabler of adaptation; conversely the lack of training is portrayed as a barrier or constraint.

26. Additionally, the IPCC report contains some explicit references to technical guidance needs for adaptation. In general, there is recognition that lack of guidance can present a barrier to adaptation and that regional, transboundary, national and sub-national guidance can support adaptation decision support tools such as modelling. Examples of the specific references to guidance gaps and needs include: the development of guidance to improve epidemic forecast models in the public health sector; effective policy guidance to increase the climate resilience of agriculture; the absence of overarching policy guidance for preserving world heritage sites; limitations in guidance documents for climate resilient development pathways in cities; and global and national policies on relocation lack guidance on ensuring equity.

27. To assess whether there are additional relevant insights in the academic literature that can complement the other sources of data feeding into the strategy paper, a systematic literature review method was employed to analyze the needs for training and guidance materials related to adaptation as identified in academic literature (see Annex I for the methodology, eligibility criteria, and further details with respect to how the review was conducted). Of the articles identified through the review, only a small subset makes implicit reference to training and capacity-building needs identified in the academic literature that are relevant to the implementation of the UAE Framework for Global Climate Resilience. These include sector and theme-specific needs for targeted training as well as needs more broadly in relation to adaptation. As an example of the latter, Stafford-Smith et al. (2022) observe that, as the number of adaptation guidance documents continues to grow, oftentimes with many different portrayals of basic concepts such as the adaptation cycle, the "greatest need" is for guidance on applying the cycle in its entirety "in different contexts with suitable matched methods." Overall, the literature points to a wide variety of needs, many of which are highly context specific. Table 2 provides examples of specific training and guidance needs identified in relation to different elements of the UAE Framework for Global Climate Resilience.

Table 2
Examples of technical guidance and training needs identified in a desk review of academic literature

Topic	*Examples of training or guidance needs identified in related academic literature*
Cross-cutting themes	
Community-based adaptation	Guidance is needed for co-producing local climate adaptation strategies that are context-specific and meet community needs as current guidance, which generally focuses on ethical considerations but lacks detailed attention to critical research decisions that significantly impact project outcomes (Clifford et al., 2023)
	Capacity building efforts should be inclusive training, localization, and community-based approaches in the context of coastal climate change adaptation in Pacific Island countries (Chand, Buliruarua and Morris, 2023)
	An update of training modules is required to create more effective and meaningful participation and co-production of strategies for adapting to climate change, particularly in coastal and island communities (Sartorius et al., 2024)
	Training in integrating local knowledge into climate change adaptation strategies for smallholder agriculture, using an ecosystem-based development approach to enhance Community-Based Natural Resource Management (Derbile et al., 2016)
Thematic targets	
Water	Updated guidance on adaptive planning and risk assessment methods for flood risk management is critical (Reynard et al., 2017)
Food and agriculture	Agricultural extension agents need training for the fundamental climate change concepts, proper use of cultural and managerial practices to adapt to climate change and funding shortage to attend the training in Nigeria (Ifeanyi-Obi & Ekere, 2021)
	Broadening training courses on climate change, catering to less experienced and less educated farmers (Trinh et al. 2018)
	Practical training is needed to build skills in integrated assessments, scenario planning, and vulnerability assessments for climate-sensitive primary industries, such as pastoral farming, horticulture, and viticulture, addressing empirical and methodological gaps in adaptation strategies (Cradock-Henry et al., 2019)
Health	Public health adaptation guidance materials are lacking for subnational levels (Walter et al. 2024) Health-related climate adaptation training for decision-makers to enhance understanding of climate change impacts on health and effective adaptation measures (Liu et al., 2016)
Ecosystems and biodiversity	The biodiversity crisis is a global problem and, as such, requires improving pedagogy, training, and collaboration between managers and researchers for conserving and managing biodiversity, globally (Schiebelhut et al., 2024)
Infrastructure and human settlements	Guidance for urban planners is needed for adaptation to climate change, focusing on enhancing accountability and commitment within Local Government Authorities. Key areas for development include managing informality, stakeholder engagement, and understanding socio-economic barriers, as well as strengthening local governance and integrating it with spatial and economic planning to improve urban resilience (Kombe and Alananga, 2022)
Poverty eradication and livelihoods	Targeted training and guidance to enhance the adaptive capacity of smallholder communities. Platforms such as participatory action research, farmer field schools, and community-based initiatives can facilitate the transfer of diverse knowledge systems and equipping them with both proactive and reactive adaptation strategies, for managing climate risks and sustaining livelihoods (Silici et al., 2021)

Cultural heritage	Guidance on integrating indigenous knowledge into policy-making and tailoring adaptation plans to the specific needs and abilities of Indigenous Peoples to enhance their resilience to climate impacts. (Mohamed et al., 2020)
	Guidance on merging traditional Indigenous knowledge with Western scientific data for knowledge co-creation, for building community and ecological relationships affected by historical colonization. Suggest developing learning tools combining traditional methods and modern digital platforms to train youth and build capacity within Indigenous communities, enhancing their resilience to environmental changes. (Martin-Hill et al., 2022)
	Guidance regarding how forest-dependent Indigenous communities' traditional knowledge and practices should be integrated into broader climate policies including NDCs and NAPs. Further efforts are necessary to bridge knowledge gaps, particularly in areas concerning the effectiveness and implementation of joint adaptation-mitigation strategies that involve Indigenous knowledge. (Bauer, 2022)
Iterative adaptation cycle targets	
Impact, vulnerability and risk assessment	Training and guidance are needed to address several gaps in vulnerability assessments for climate adaptation, including integrating local knowledge, clarifying vulnerability concepts, and improving assessment criteria. Evaluating adaptation capacity is crucial for effective decision-making, resource prioritization, and trade-off management, which are essential to reduce vulnerability and support sustainable smallholder livelihoods. (Williams et al., 2018)
	Developing skills of maritime professionals in monitoring and assessing potential climate change impacts (Nursey-Bray, 2010)
Planning	Need to coordinate capacity-building efforts for climate change adaptation planning. Both long-term education and short-term training are crucial, with short-term workshops being most effective when tailored to participants' needs and context-specific. Improved training needs assessments, continued mentorship, and institutional backing are required to ensure the effectiveness of training in adaptation planning (Mataya et al., 2019)
Implementation	Guidance for smallholder coffee farmers to access knowledge networks, training materials, organizational support, and financial resources to implement climate adaptation measures (Verburg et al., 2019)
Monitoring, evaluation and learning	Differentiated guidance on how the adaptation cycle can be applied as the user context changes throughout the adaptation journey (Stafford-Smith et al., 2022).

28. Other articles also shed light on other aspects that the AC may wish to bear in mind as they take action in response to this mandate. This includes insights in relation to challenges associated with designing and delivering training and guidance so that they are user-friendly, effective and impactful. For example, Conway and Mustelin (2014) note that there has been "an explosion of policy frameworks, climate risk assessment guidelines and toolkits" that have resulted in challenges for end-users in relation to "tool access, selection and comparison." Stafford-Smith et al. (2022) echo this sentiment, noting that the diverse range of existing guidance for adaptation causes confusion for those trying to take action on adaptation. Schmitt et al. (2021) add that, despite the various guidebooks and other publications available on adaptation, how effectively these tools are used for adaptation planning and implementation is unclear. What's more, the authors note that training to use these tools is often time-intensive, and can be perceived as a high opportunity cost for professionals, particularly "when workshops are conducted with passive methods or theoretical exercises that can be difficult to connect to real world situations." Additionally, reflecting on a randomized control trial that tested the impact of a workshop for community-based water management organizations to adopt adaptation practices, which produced null results, Lubell and Niles (2019) caution that a "one-time workshop, no matter how well designed, is unlikely to penetrate attitudes or behaviour."

29. Based on their extensive experience delivering adaptation-focused trainings, Schmitt et al. (2021) outline six best practices. These best practices are as follows:

a) **Give participants a tangible outcome**: Asking participants to bring their own projects to training sessions helps them better understand how to apply the insights of the workshop to their work and reduces the opportunity cost of the training by enabling them to progress on their work.

b) **Pre-work and pre-engagement are important**: Providing background information and reading materials before sessions helps maximize the use of limited in-person time. Pre-session engagement also helps set expectations for the workshop and ensure that participants bring the right projects to work on during the session.

c) **Keep it small**: Smaller training sessions help maximize quality interaction and cross-pollination among participants.

d) **Maintain a regional, sectoral, or organizational focus**: This allows for targeting the training to specific climate impacts, the interests of participants, or their organizational context.

e) **Recognize the value of partnerships and trust**: Partners can serve as trusted links between target audiences and trainers, and can help set the scope of training and identify key interests for participants.

f) **Working with existing planning processes while remaining flexible to a range of contexts**: This lesson recognizes the variety of missions, values and decision-making processes in different organizations, and speaks to the need to balance structure and context specificity in delivering training.

2.2.1. Insights from grey literature

30. A scan of grey literature revealed a small number of additional insights. For example, the NAP Global Network (2023) emphasizes the importance of targeted, practical training, supported by financial resources and ongoing access to technical expertise, for gender-responsive NAP processes. There are also a range of training needs assessment results that shed light on relevant needs specific to certain contexts. For instance, in North Macedonia, a training needs assessment in relation to reporting under the enhanced transparency framework revealed "vulnerability, impacts and adaptation" as the most often cited need (Legro, 2020). An in-depth training needs assessment in the State of Assam, India, identified a wide range of training needs differing by sector (e.g. training of community members on public health emergency management in the health sector, training on dam safety in the infrastructure sector) as well as by district (Assam State Disaster Management Authority, 2014). This needs assessment included a list of proposed trainings tailored to different target audiences and priority themes.

3. Mapping of existing technical guidance and training materials relevant to the UAE Framework for Global Climate Resilience

31. At AC 25, the AC considered an information note containing an illustrative preliminary mapping of relevant technical guidance and training materials. This preliminary mapping was limited to products prepared by the AC, CGE and the LEG. The AC agreed to expand the mapping of existing technical guidance and training materials relevant to the UAE Framework for Global Climate Resilience and its targets, themes, and cross-cutting considerations. A non-exhaustive list includes:

32. How to make progress towards each of the targets contained the UAE Framework for Global Climate Resilience (see paragraphs 9 and 10 of decision 2/CMA.5)

a) Other themes referenced in the decision, e.g.:

i) Country-driven, gender-responsive, participatory and fully transparent approaches

ii) Ensuring intergenerational equity and social justice;

iii) Maladaptation avoidance;

iv) Transboundary climate change impacts and complex, cascading risks;

v) Catalyzing and strengthening regional and international cooperation.

33. The purpose of the mapping is to support an analysis of areas where additional or updated guidance or training materials may add particular value to supporting the implementation of the UAE Framework for Global Climate Resilience.

34. An initial expanded mapping, containing 55 entries, was shared with the AC for their review and further guidance in May 2024. This mapping was then further expanded based on the responses to the survey inviting the submission of relevant technical guidance and training materials. In total, 188 responses were submitted to the survey from various types of stakeholders, including Parties, intergovernmental organizations, Indigenous Peoples organizations, think tanks and research institutes, and funds.

3.1. Insights from the mapping

35. The mapping contains a total of 273 products. The mapping does not reflect a comprehensive repository of all relevant existing technical guidance and training materials, but nonetheless offers a significant database from which some insights may be derived.

36. **Key insights include:**

37. There is a vast array of existing materials that Parties and other stakeholders may draw on in order to support their adaptation efforts across the iterative adaptation cycle and across different themes and sectors. While almost all of this pre-dates the adoption of the UAE Framework for Global Climate Resilience and therefore are not specifically designed with its targets and other elements in mind, they nonetheless are highly relevant to its implementation.

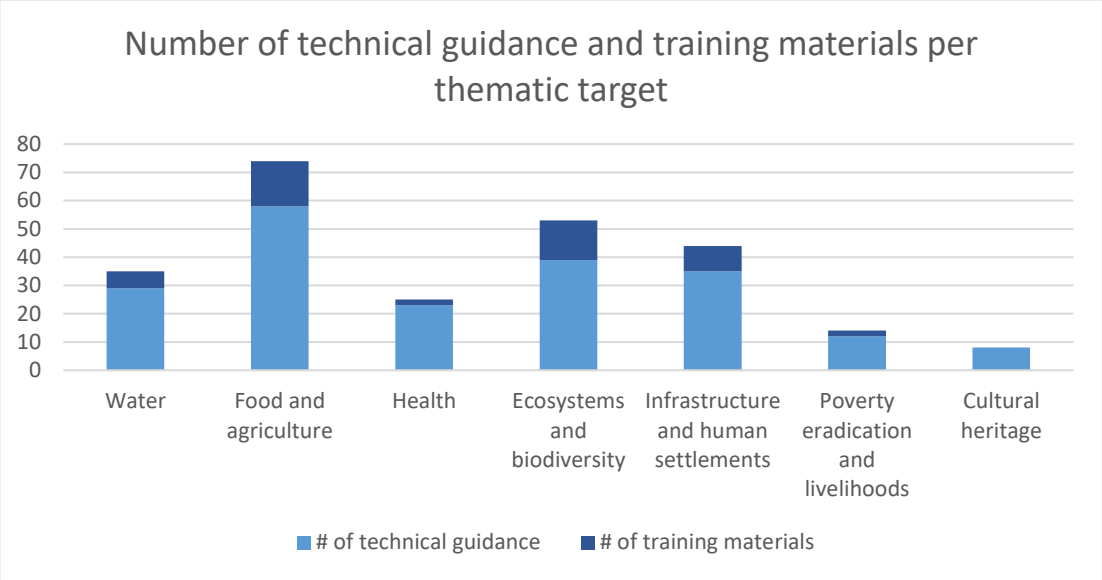
a) Materials vary widely in factors such as length and scope, from illustrated brochures of less than ten pages providing high-level topic overviews to books containing hundreds of pages devoted to battling specific agricultural challenges. Moreover, some resources submitted are highly context specific; e.g. a methodology submitted by a Party for assessing expected damage from permafrost to the Party's assets and economy.

b) The vast majority of resources submitted were in English, with a small number of submissions in other languages (French, Spanish, Slovakian). In addition, all additional resources compiled through the desk review were in English. This sheds light on the limitations of the mapping in terms of presenting a representative picture of resources available worldwide.

c) The majority of resources compiled in the mapping are technical guidance documents rather than training materials. Of the resources compiled, 79 per cent are categorized as technical guidance and 21 per cent are categorized as training materials. This may be because training materials are typically prepared and tailored for a given training session, and therefore less likely to be made available as a standalone resource.

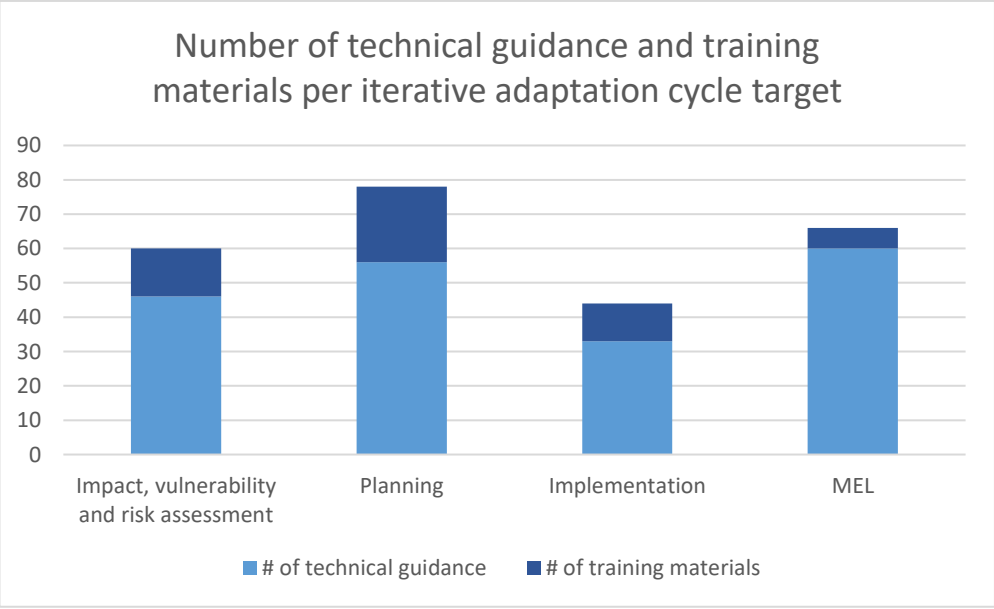
d) There are existing resources available for each of the thematic targets (see figure 3 below). Of those that have been compiled in the mapping, there are significantly less, however, for the targets on poverty eradication and livelihoods (para. 9e of decision 2/CMA.5) and cultural heritage (para. 9f).

Figure 3
Number of technical guidance and training materials per thematic target



e) Similarly, the resources compiled in the mapping include resources that support efforts for each stage of the iterative adaptation cycle. Adaptation planning resources were the most numerous, followed by monitoring, evaluation and learning; impact, vulnerability and risk assessment; and, finally, implementation. See figure 4.

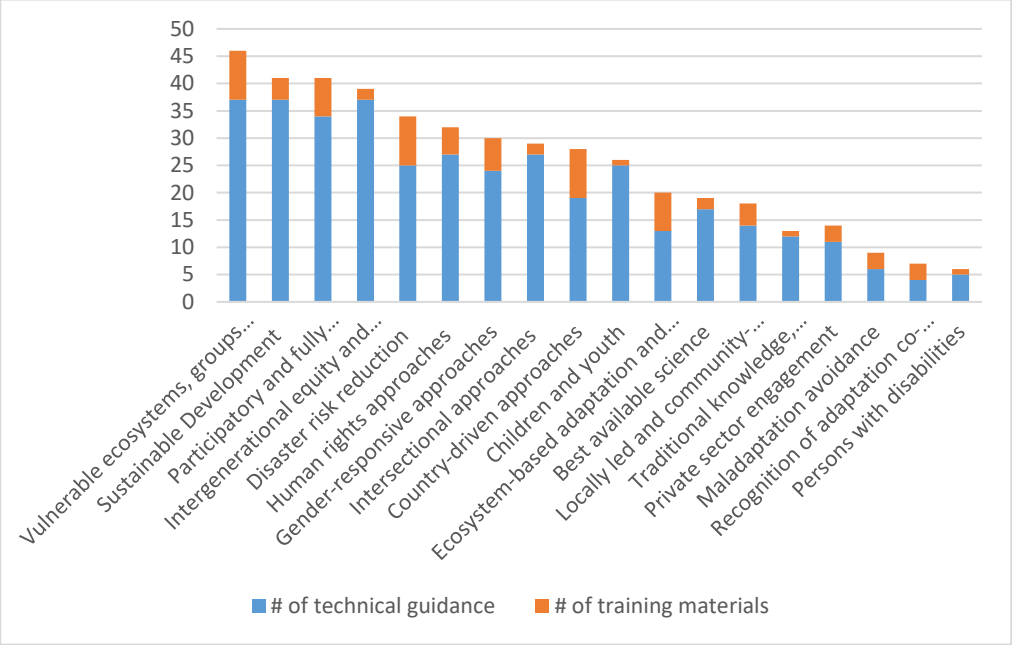
Figure 4
Number of technical guidance and training materials per thematic target



f) Of the cross-cutting considerations, resources that address sustainable development were the highest in number, followed by those that address vulnerable ecosystems, groups and communities; participatory and fully transparent approaches; and intergenerational equity and social justice. The results are presented in figure 5 below.

Figure 5

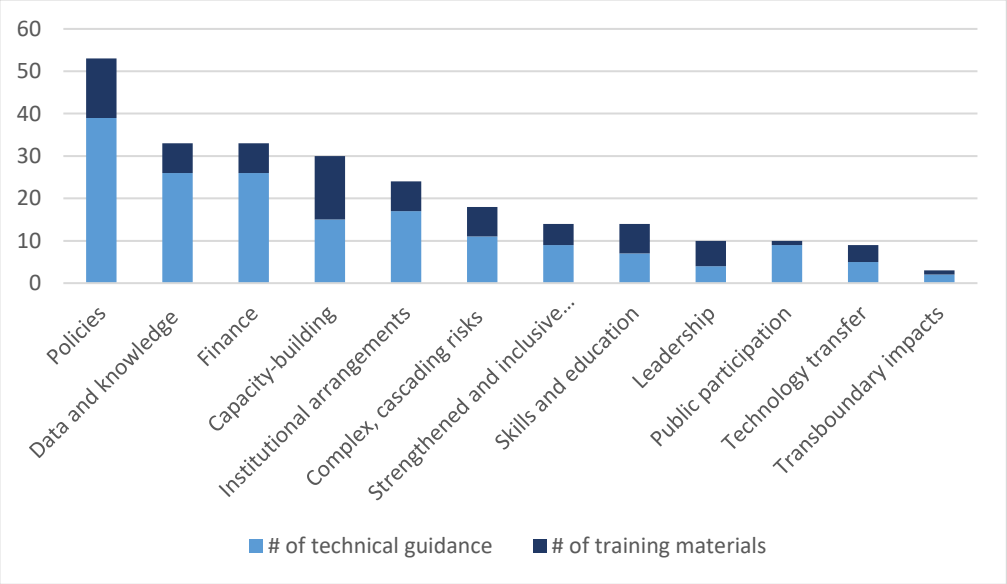
Figure 5[8]
Number of technical guidance and training materials addressing cross-cutting considerations



g) Finally, in relation to the other topic areas of decision 2/CMA.5, there are resources contained in the mapping related to each area, with the highest number by far pertaining to policies. Data and knowledge, finance, and capacity-building had the next highest number of resources, respectively. The distribution is presented in figure 6 below.

[8] Some topics in the graphic are not visible in full. These read as follows: Vulnerable ecosystems, groups, and communities; Participatory and fully transparent approaches; Intergenerational equity and social justice; Ecosystem-based adaptation and nature-based solutions; Locally led and community-based adaptation; Traditional knowledge, Indigenous Peoples' knowledge, and local knowledge systems.

Figure 6
Number of technical guidance and training materials per other topic areas of decision 2/CMA.5



3.2. Options for making the mapping available to Parties and other stakeholders

38. In addition to using the mapping to inform its planning and prioritization of future work, the AC may also wish to consider options for making the mapping available as a resource to point Parties and other stakeholders towards existing resources that may support their efforts to implement the UAE Framework for Global Climate Resilience. Table 3 below offers several options, arranged in ascending order of time/resource intensity; the execution of options 4 and 5 below may be contingent on resource availability.

Table 3
Options for making the resources collected through the mapping available to Parties and other stakeholders

#	*Option*	*Advantages*	*Disadvantages*
1	No publication of mapping	• No significant time/resource requirement	• Missed opportunity to make useful database of resources available
2	Publication of a PDF containing a table of existing materials, with descriptions, relevant topics of the UAE Framework for Global Climate Resilience, authors, publication dates, links, etc.	• Simple and fast to implement, so resources could be made available immediately • All resources visible in one location	• Static resource • Not especially user-friendly to filter/navigate
3	Publication of a dedicated webpage on the UNFCCC website containing a table	• Simple to implement • Quicker to update as compared with a PDF • All resources visible in one location	• Not especially user-friendly to filter/navigate
4	Publication of all materials on the Adaptation Knowledge Portal	• Resources would be added to an existing adaptation-focused	• Existing database structure/ tags of the Adaptation Knowledge

		database of tools, training materials, and other adaptation resources	Portal not entirely aligned with UAE Framework for Global Climate Resilience • Parties have called for portal to be made more user friendly, suggesting some existing challenges and potential future revisions
5	Publication of all materials on the UNFCCC Capacity Building Portal	• Resources would be added to an existing database focused on capacity-building, which is aligned with the focus of this mandate on guidance and training	• Information collected as part of the survey is not fully aligned with the information required to submit resources for the portal, therefore significant additional work would be required to collect additional details • Information should be submitted by authors/publishers or resources rather than the AC or secretariat
6	Creation of a bespoke interactive database on the UNFCCC website	• Offers the opportunity to build a tool that is tailored to the data and best suited to support implementation of the UAE Framework for Global Climate Resilience up to 2030	• Highly time and resource intensive to create and maintain

39. If the AC decides to make available the resources contained in the mapping, it may also wish to:

a) Reopen the possibility to make new submissions of relevant materials. This can be done, for example, by reactivating the survey through which resources were submitted;

b) Limit the resources made available to those that are accessible (i.e. the resources have a functional link, are not behind a paywall, etc.).

4. Inputs from Parties and other stakeholders: outcomes of the 2024 Adaptation Forum, the SB 60 event and the survey

4.1. Relevant outcomes of the 2024 Adaptation Forum

40. From 18-19 March, the AC hosted the 2024 Adaptation Forum focusing on the theme of *Promoting solutions toward achieving the global goal on adaptation: opportunities for action and collaboration*. The

breakout groups during the Forum focused on the four steps of the iterative adaptation cycle and the corresponding targets of the UAE Framework for Global Climate Resilience.

41. Throughout the discussions and input via Mentimeter, some participants shared opportunities specific to the work of the AC, which may inform the selection and prioritization of future work. These suggestions were not specific to the AC's work on this mandate, but may nonetheless These are summarized in table 4.

Table 4
Suggestions for the work of the AC made by participants of the 2024 Adaptation Forum

Category	*Topic*	*Suggestions for the work of the AC*
Cross-cutting and other themes from 2/CMA.5	Private sector engagement	• Enhancing work with the private sector, including on technologies and finance • Communicating that strengthening capacity, stakeholder engagement, and galvanizing private sector engagement need to take place in parallel
	Children	• Providing examples and investment in child-centred adaptation
	Transboundary impacts and adaptation	• Cooperating with regional and transboundary organizations
	Education	• Leveraging the interest from the education sector in contributing to and advancing adaptation at the local level
Thematic targets	N/A	• N/A
Iterative adaptation cycle targets	Overarching (all stages)	• Developing guidelines and toolkits on all stages of the adaptation cycle;
	Impact, vulnerability, and risk assessment	• Developing a vision in terms of what long-term adaptation action requires in relation to climate services
	Planning	• Addressing the lack of terminological alignment in relation to adaptation planning • Build understanding of links between NAPs and NDCs, and the link between adaptation, loss and damage, and Representative Concentration Pathway scenarios • Clarify linkages between NAPs and the just transition pathways agenda
	Implementation	• Compiling good practices on successful alignment and scaled up adaptation action, including related to capacity-building
	Monitoring, evaluation, and learning	• Developing a vision on how monitoring, evaluation and learning connects to risk assessments
Overarching		• Building a post-2030 narrative building on the UAE Framework for Global Climate Resilience

- Developing a dashboard to project all adaptation efforts, finance, and progress
- Seeking input from all UN organizations on their adaptation work to achieve the global goal on adaptation and the technical, financial, capacity and technology support they offer to developing countries
- Continuously collaborating with the LEG to deliver on needed adaptation support
- Working towards technical working groups under the CGE to secure sector supported monitoring processes
- Ensuring guidance and training targeted at people outside of the adaptation and climate change fields
- Overseeing harmonization and synergizing of different guidelines

4.2. Outcomes of the SB 60 side event

42. The AC hosted a side event on Supporting the UAE Framework for Global Climate Resilience at SB 60, which focused on paragraph 44 of decision 2/CMA.5 and took place on 5 June 2024 from 13:15 to 14:30.[9] During the event, the AC Co-Chair presented on the UAE Framework for Global Climate Resilience, the mandate arising from paragraph 44, and the initial steps the AC has decided to take to fulfil the mandate, as well as preliminary insights from the analysis undertaken so far.

4.2.1. Interventions from representatives of invited constituted bodies

43. Representatives from the CGE, the LEG, and the PCCB were invited to participate in the event and share their reflections on experiences with past technical guidance and training materials. Each representative was asked to provide views on what has worked well in relation to developing, disseminating and/or utilizing guidance and/or training materials; opportunities for improvement; and lessons learned that can inform the work on technical guidance and training materials.

44. The representative of the CGE shared that, in providing capacity-building and technical support to developing countries for implementation of the monitoring, reporting, and verification framework under the UNFCCC and the enhanced transparency framework under the Paris Agreement, the CGE conducts surveys to assess where capacity is most needed, as well as webinars and regional capacity-building workshops. In terms of good practices, the representative highlighted the value of seeking early feedback in the development of technical materials, periodically updating guidance and technical materials, and regularly collecting inputs to inform such updates. Moreover, she underscored the importance of ensuring the materials are tailored to specific needs, taking into consideration, for example, people living with disabilities. Additional recommendations included ensuring that materials are designed in a user-friendly way and are easy to understand, as well as conducting knowledge sharing, outreach, and capacity-building efforts in connection with any materials that are produced.

45. A representative speaking on behalf of the LEG explained that the LEG has long been preparing technical guidance and training materials to support LDCs and other developing countries, particularly with respect to national adaptation plans. This includes direct support to countries through trainings on project development as well as regional workshops targeted at region-specific challenges. The representative underscored the importance of engaging a broad range of experts in this type of work. In this regard, he shared two concrete examples of avenues for expert engagement from the LEG's work, namely, welcoming the preparation of supplementary guidelines by interested experts and organizations, as well as the

[9] See https://unfccc.int/event/side-event-ac-supporting-the-uae-framework-for-global-climate-resilience.

creation of a roster of experts who can contribute to the development of training materials and technical guidance.

46. Finally, a representative of the PCCB highlighted that the PCCB addresses current and emerging gaps and needs in building capacity in developing countries, and focuses on improving coordination and coherence in capacity-building efforts to ensure that they align with global climate action goals. It was noted that the PCCB pursues a systematic approach to accurately identify and address the most pressing gaps and needs in relation to capacity-building by issuing regular calls for submission and inputs, which are published on their website and disseminated widely through channels such as newsletters, LinkedIn, and the PCCB Network. In terms of good practices, the representative shared examples including translating materials into the six official UN languages in order to ensure accessibility, publishing on the PCCB's Capacity-Building Portal, conducting campaigns to publicize events and materials, and organizing knowledge sharing events such as webinars and the Capacity-Building Hub during COPs. Lessons learned include the value of harnessing the body's convening power to drive collaborative efforts and foster partnerships to work towards more effective and coherent capacity-building; standardizing and simplifying processes for collecting stakeholder information and feedback by implementing a uniform registration procedure for events and activities; conducting regular post-event follow ups; enhancing efforts to include marginalized and vulnerable groups in capacity-building activities, including by designing accessible materials and programs and considering factors such as gender, age, disability, and socioeconomic status in work; and embracing innovative and diverse communication modalities.

4.2.2. Inputs from participants (in-person and online via Mentimeter)

47. The majority of the event was dedicated to seeking inputs from participants in order to inform the planning and prioritization of technical guidance and training materials. Specifically, participants were asked to reflect on the type of products, formats or forms of collaboration that should be prioritized, which stakeholders should be targeted as the audience of technical guidance and training materials, and which areas of work or topics under the UAE Framework for Global Climate Resilience should be prioritized for technical guidance or training materials. Participants were also invited to submit their inputs on these matters online via Mentimeter both during the event and up to two days afterwards. The suggestions enumerated below include both those shared in-person and those shared via Mentimeter.

48. Suggestions made with respect to which products, formats, or forms of collaboration should be prioritized include:

a) Various types of events:
   i) Workshops;
   ii) Hands-on trainings;
   iii) Peer-to-peer exchanges;
   iv) Webcasts (e.g. on YouTube);
   v) Reflective dialogue circles to give all stakeholders an equal opportunity to share their best practices;

b) Different types of products or platforms:
   i) Knowledge-sharing platforms;
   ii) Innovative videos;
   iii) Guidance documents;
   iv) Products that break down complex topics into understandable visuals;

c) Accessibility-related considerations:
   i) Formats that cater to individuals with disabilities;
   ii) Products in different language versions.

49. Suggestions made with respect to the areas of work or topics for technical guidance and training materials included:

a) Areas relevant to specific thematic targets of the UAE Framework for Global Climate Resilience:

i) Food and agriculture, including: how to address drivers of systemic and transboundary vulnerability in food systems when pursuing the global adaptation targets; animal welfare; sustainable diets and demand-side action; supply-side actions; nutrition;

ii) Best management practices in relation to protecting biodiversity in adaptation actions;

iii) Advancing sexual and reproductive health and rights and women's health;

b) Areas relevant to specific dimensional targets of the UAE Framework for Global Climate Resilience:

i) Technical guidance and trainings on conducting climate risk assessments;

ii) Local capacity-building on mapping areas at risk of extreme weather events, with data disaggregated by gender, race, territory, and accessibility needs;

iii) Guidelines and training materials on the vertical integration of national adaptation plans;

iv) Training connected to NAP or NDC development;

c) Areas relevant to cross-cutting considerations and other areas:

i) Cross-sectoral and systemic guidance, including products and tools for addressing cross-cutting issues systematically and in an integrated way;

ii) Maladaptation avoidance;

iii) Gender, inclusion, and gender transformative planning;

iv) Issues related to racial and gender inequalities;

v) Good practices for community consultation and engagement in the development of vulnerability and needs assessments, planning, implementation, and MEL.

vi) Access to adaptation finance, including materials to enhance the capacities of municipalities to access adaptation funding;

vii) Integration of adaptation and mitigation;

viii) Synergies with other frameworks;

ix) Technical guidance on how indicators for measuring progress on adaptation can be applied in different countries in light of different national circumstances.

50. Suggestions on what the AC, CGE, LEG and other constituted bodies should do more of in relation to technical guidance and training materials include:

a) In relation to collaboration and engagement:

i) Collaborate with individuals and organizations who can translate training materials to local languages;

ii) Work with national partners to ensure guidance and training meets national and local needs;

iii) Create more opportunities for non-Party stakeholders to submit technical resources and best practices outside of submission periods;

iv) Involve communities and stakeholders in the formulation of guidance, and increasing the participation of persons with disabilities by partnering with national and regional disability justice civil society organizations;

v) Partner more intentionally with the Women and gender, Children and youth, and Indigenous Peoples constituencies to increase participation of non-Party stakeholders in consultative processes.

b) In relation of the nature or focus of work:

i) Conduct capacity-building work;

ii) Showcase the value of systemic and transboundary adaptation;

iii) Align with technical guidelines for NAP implementation;

iv) Promote or share information on existing relevant guidelines, invest time to find the gaps in existing guidance and materials and provide an overview of existing guidance with commentary on their scope, quality and context.

51. Suggestions on the stakeholders that should be targeted for technical guidance and training materials include:

a) All levels of government, including local governments and relevant ministers/ministries;

b) Civil society/non-State actors, including women-led organizations implementing adaptation and resilience-building efforts;

c) Local communities;

d) Indigenous Peoples.

52. Some participants also raised considerations that, while not specific recommendations for particular products or target audiences, may nonetheless inform the selection and prioritization of work on technical guidance and training materials. These include:

a) Migration and adaptation outputs in the context of human mobility;

b) Inclusion of marginalized communities in adaptation and related financing opportunities, including refugees, migrants, and displaced populations;

c) The role of localized actors, including universities or non-governmental organizations;

d) Importance of trade union involvement;

e) Ensuring the inclusion of people with disabilities, including by adapting training materials to their needs;

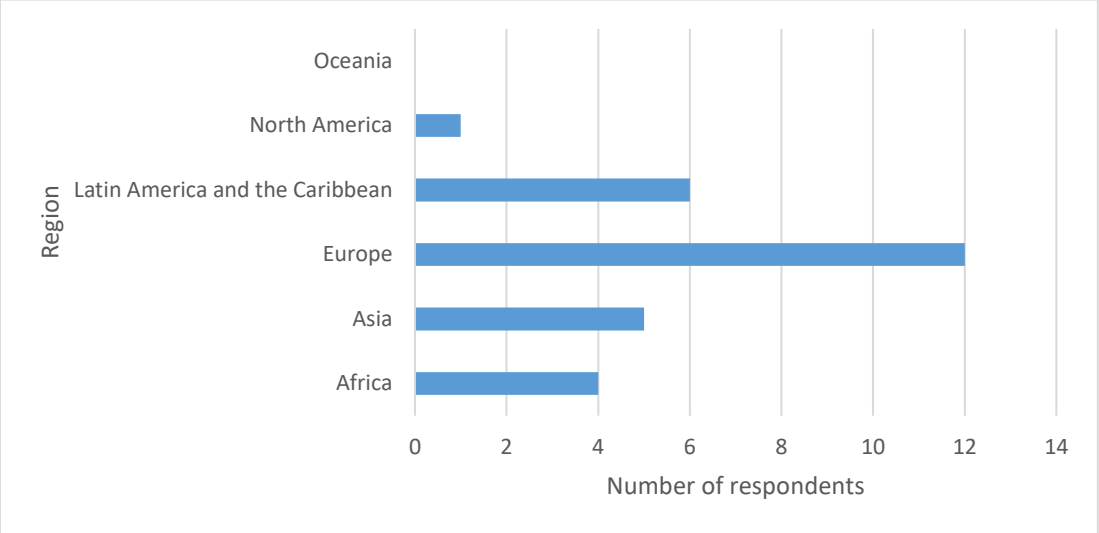
f) The values, wisdom, and knowledge of Indigenous Peoples.

53. The AC co-chair announced that a survey will offer the opportunity to provide further inputs to inform a strategy paper which shall support decisions by the AC, CGE and LEG on further work on technical guidance and training materials. Participants were invited to particularly share ideas on focus and priority work areas as well as potential ways of collaboration or the division of labour since not all suggested topics and collaboration formats can be addressed by the respective bodies alike.

4.3. Outcomes of the survey

54. The survey was launched on 19 July 2024 with a deadline of 12 August 2024. It was disseminated via National Focal Points and to Adaptation Contact Points. In total, responses from 29 Parties were received. The surveys were reopened after AC 26, and two new responses have been received by April 2025. The geographical distribution of responses is displayed in figure 7 below.

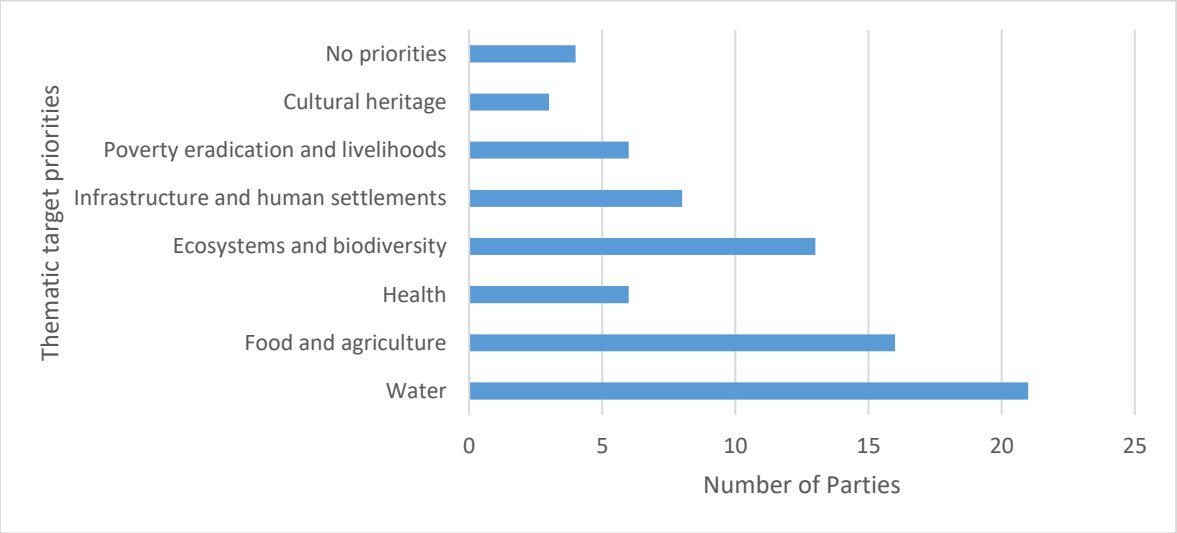
Figure 7
Geographic distribution of survey responses



4.3.1. Priority topics among the targets, cross-cutting considerations, and other areas of the UAE Framework for Global Climate Resilience

55. Parties responding to the survey were asked to indicate their top priorities among the various topics reflected in the targets, cross-cutting considerations, and other elements of the UAE Framework for Global Climate Resilience. Figure 8 displays the results in relation to the thematic targets.

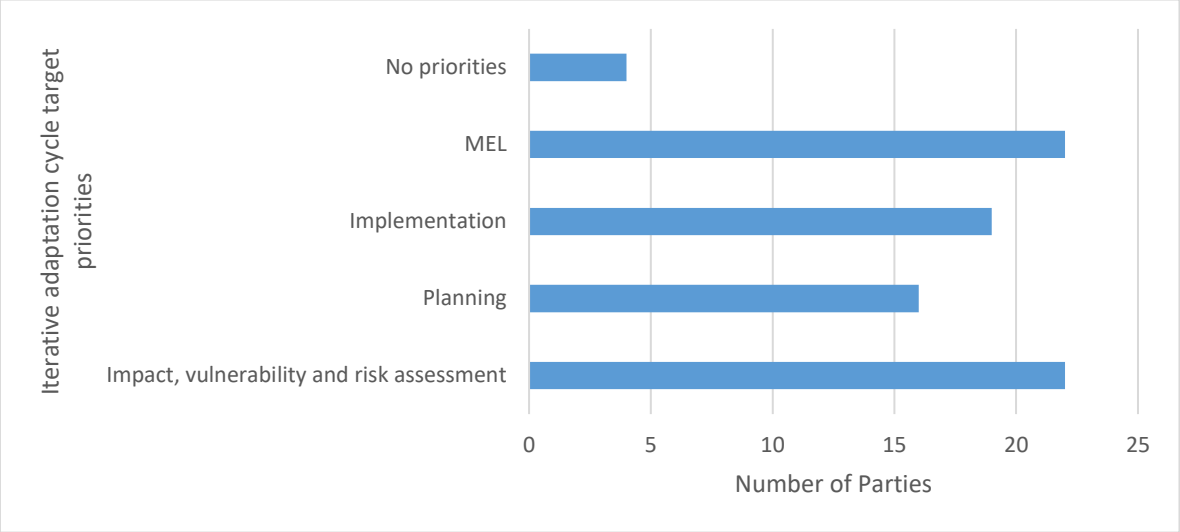
Figure 8
Parties' priorities for technical guidance and training materials in relation to thematic targets



56. Of the thematic targets contained in paragraph 9 of decision 2/CMA.5, the top priorities indicated by Parties in relation to technical guidance and training materials are water (para. 9a), food and agriculture (para. 9b), and ecosystems and biodiversity (para. 9d). Conversely, a small number Parties indicated either that they had no priorities or that all topics mentioned are indeed priorities.

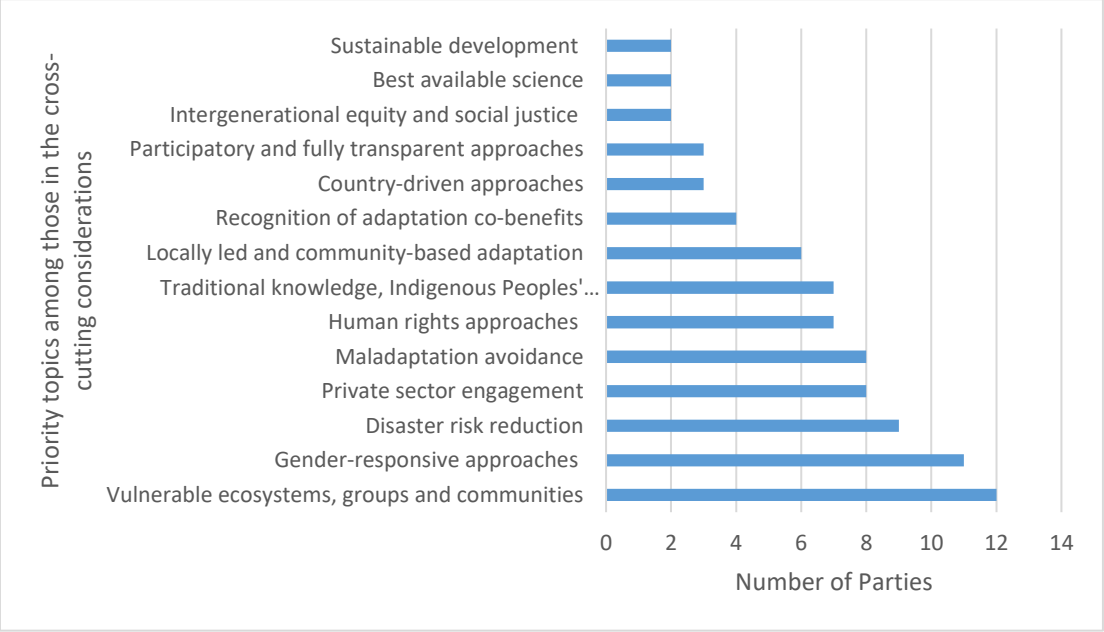
57. Figure 9 presents the results of priorities in relation to technical guidance and training materials with respect to the iterative adaptation cycle targets.

Figure 9
Parties' priorities for technical guidance and training materials in relation to the iterative adaptation cycle targets



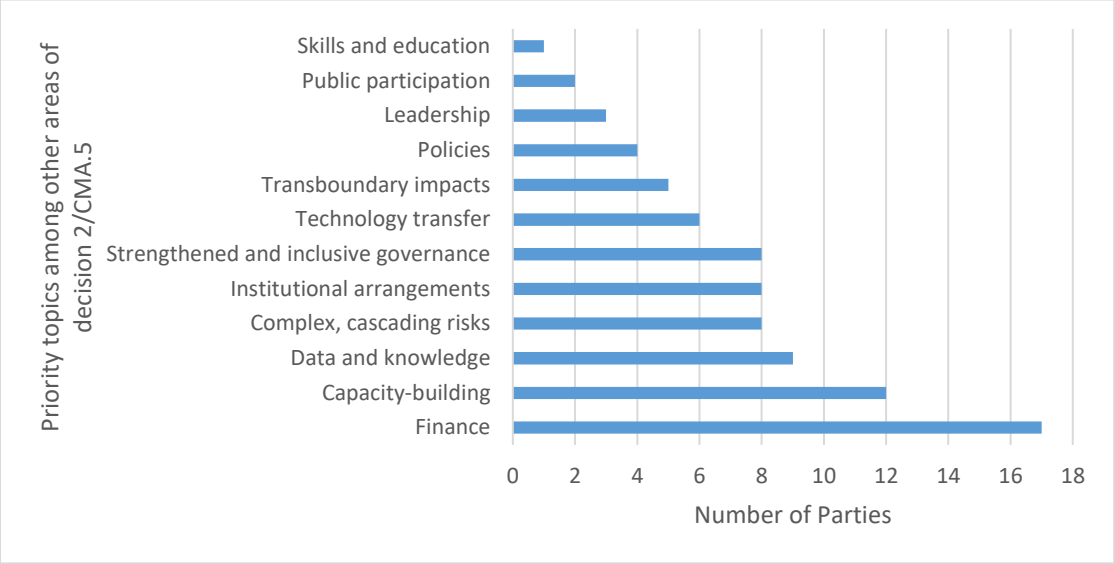
58. Parties' top priorities in for technical guidance and training materials in relation to the topics included in the cross-cutting considerations (paras. 13–14 of decision 2/CMA.5) are displayed in figure 10 below. The top three priorities were vulnerable ecosystems, groups and communities, gender-responsive approaches, and disaster risk reduction. Three topics were not selected by any respondents as priorities and therefore are not reflected in the figure.

Figure 10
Parties' priorities for technical guidance and training materials in relation to the cross-cutting considerations



59. Finally, Parties' top priorities in relation to technical guidance and training materials to support implementation with respect to other topics included in decision 2/CMA.5 are displayed in figure 11 below. Of these, finance is the top priority by a significant margin, followed by capacity-building and data and knowledge.

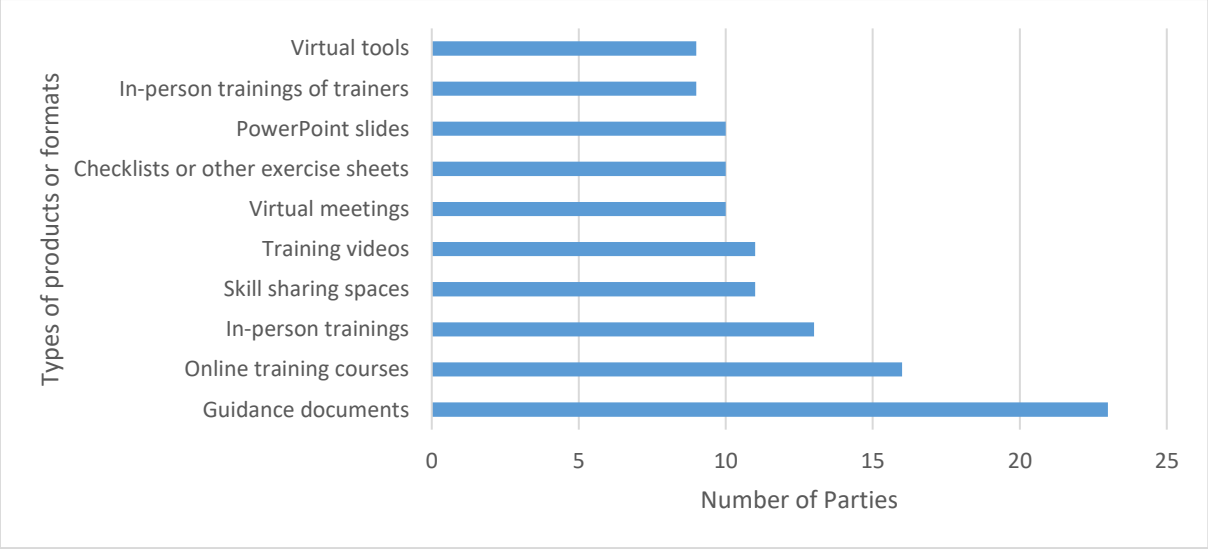
Figure 11
Parties' priorities for technical guidance and training materials in relation to the other areas of the UAE Framework for Global Climate Resilience



4.3.2. Preferred product or format types for technical guidance and training materials

60. Through the survey, Parties indicated their preferences in terms of types of products or formats that should be used, including by the AC, CGE and LEG, to support their implementation of the UAE Framework for Global Climate Resilience. The results are displayed in figure 12 below.

Figure 12
Parties' preferences regarding types of products or formats for technical guidance and training materials



61. The most preferred product format is guidance materials (selected by over two thirds of respondents), followed by online training courses (almost half of respondents) and in-person trainings (just over one third). All other options were also selected by around a third of respondents, indicating that there is an appetite for a wide range of formats and product types to be made available to support implementation of the UAE Framework for Global Climate Resilience.

62. Given the opportunity to provide written comments on the types of products or formats, some Parties provided suggestions on aspects such as the periodicity of potential trainings to the accessibility of products created under this mandate. Several Parties suggested that the focus of the work should be on technical guidance rather than trainings or meetings in light of the many existing initiatives and support programmes on adaptation. By contrast, others proposed that in-person or online trainings should be held, including to help properly implement any guidance documents that are produced. Some further specified that trainings should take place at a periodicity ranging from every two months to twice a year. It was also suggested that any products should be non-prescriptive, simple, dynamic and interactive, adaptable to various languages and socio-cultural situations, balanced between technical and general language, targeted to policy makers.

63. Another suggestion related to the inclusion of follow-up mechanisms. A specific proposal in this regard was to regularly hold virtual meetings for technical experts/practitioners up to 2030 to create a space for asking clarification questions and getting support to apply the guidance and use the training materials. Similarly, it was suggested that feedback could be solicited from Parties who use the guidance or training materials so that tools can be updated and refined.

4.3.3. Other inputs to inform the work in relation to the preparation of technical guidance and training materials

64. Through the survey, Parties had the opportunity to share additional comments to inform the work by the AC, in collaboration with the CGE and the LEG, on technical guidance and training materials. Some Parties emphasized that the AC, CGE, and LEG should ensure that the work undertaken in response to this mandate is consistent with the bodies' overall mandates and focus areas. In particular, various Parties mentioned that means of implementation falls within the mandate of other constituted bodies.

65. Some Parties commented on the accessibility and user friendliness of any materials prepared to support implementation of the UAE Framework for Global Climate Resilience. In this vein, the importance of having resources translated and available in the official United Nations languages was raised. In addition, the value of having synthesized products that are not too lengthy was also raised.

66. Moreover, some substantive suggestions were made regarding more specific types of guidance that may be helpful or necessary to support implementation of the UAE Framework for Global Climate Resilience. It was suggested that technical guidance on aspects such as: political economy analysis; how to work with citizens and civil society to drive change from the bottom-up and through innovative avenues (e.g. trade and market-driven approaches); how to work with sectors that both need and pollute water (e.g. food and industry) that have a different set of priorities and drivers; and communication and multi-stakeholder participation to build political leadership and manage change.

67. Several Parties also recommended local institutions with expertise, knowledge, and experience working on adaptation in their home country or region that can be engaged to support the implementation of the UAE Framework for Global Climate Resilience with technical guidance and training materials. This includes universities, research institutions, and other specialized organizations. The list of recommended institutions is included in Annex II. Other Parties opted not to submit institutions' names, but offered to provide recommendations upon request depending on the area of work in question.

5. Strategy for prioritizing and preparing the guidance and training materials

68. All the components of the above analysis—including the inputs received during events and via surveys, the mapping of existing technical guidance and training materials, and the needs identified through relevant literature—demonstrate that there is a vast and wide-ranging array of needs for technical guidance and training materials, as well as existing resources that already cater to some of these needs. As the AC is not in a position to comprehensively respond to all identified needs, from the perspective of either resources or specialized expertise, it is necessary to take a strategic approach to the response to this mandate that maximizes the impact of the AC's efforts, in collaboration with the LEG and the CGE, and leverages the contributions and domain expertise of various partners.

69. Table 5 below includes options for deliverables that the AC, in partnership or collaboration with other bodies and organizations, may wish to prepare in order to respond to the mandate to support implementation of the UAE Framework for Global Climate Resilience with technical guidance and training materials thereon. These options are intended to spark discussion among the AC, and do not represent a comprehensive list of the potential resources the AC can prepare in response to the mandate from para. 44 of decision 2/CMA.5. These options have been informed by the analysis contained in the preceding chapters, as well as the following guiding considerations, which have also been derived from the above analysis and informed by the mandate:

a) **Accessibility**: Wherever possible, resources prepared should be translated in other UN languages and, if any events take place, efforts should be made such that these are inclusive of different regions (e.g. in relation to locations, time zones, subtitles/translation etc. depending on the nature of the event). Accessibility also pertains to the length and complexity of resources;

i) **The AC may wish**, therefore, to prioritize the preparation of resources that are accessible in terms of length and complexity and strive to make resources available in different languages.

b) **Adhering to the mandate of and leveraging the comparative advantage of the AC and respective partners**: For example, while there are a wide range of theme-specific, hands-on training and guidance needs that are relevant to the implementation of the UAE Framework for Global Climate Resilience, the AC is likely not well placed to lead the delivery of trainings and highly specialized technical guidance in response. In these cases, the AC can play a role of relaying these identified needs to appropriate partners;

i) **The AC may wish** to include, in its annual recommendations to the CMA, areas where action by other stakeholders may be beneficial to support implementation of the UAE Framework for Global Climate Resilience.

c) **Adding value and avoiding duplication**: Similarly, the wide range of existing guidance documents attest to the broad range of work already being undertaken by specialized agencies on adaptation that can support implementation of the UAE Framework for Global Climate Resilience. In addition, the challenges with navigating the existing array of resources and with delivering impactful trainings, as described in the desk review of literature, further underscore the need to carefully consider the existing landscape of products, the demand for further resources, and the value addition of any proposed product;

i) **The AC may wish**, therefore, to include in its concept note for each new product an analysis of the landscape of existing products, as well as a clear articulation of the value addition of the new product.

d) **Seeking continuous feedback from Parties and other stakeholders**: Decision 2/CMA.5 urges Parties, and invites non-Party stakeholders, to pursue the objectives outlines in the decision and to work towards the achievement of the thematic targets by 2030 and progressively beyond. The targets set for the dimensions of the iterative adaptation cycle also primarily have targets for 2030, with the exception of the 2027 target in relation to multi-hazard early warning systems and climate information services. The AC's mandate to support implementation of the UAE Framework for Global Climate Resilience through technical guidance and training materials thereon does not have an end date;

i) **The AC may wish**, therefore, to periodically check-in with Parties and other stakeholders leading up to 2030 to assess the usefulness and user-friendliness of the guidance and training materials delivered, as well as any emerging priorities for which additional products or interventions by the AC may be especially helpful.

Table 5
Options for potential resources the AC may wish to develop to respond to the mandate from para. 44 of decision 2/CMA.5

Option #	*Description*	*Rationale*	*Potential timeline*	*Potential partners*
1	**Guidance Brief Series on implementing the UAE Framework for Global Climate Resilience with accompanying training materials (PowerPoint slides, videos, exercise sheets, etc.)** The AC could prepare a series of guidance briefs (around 10 pages each) that Each brief could cover aspects such as: - Definitions of key terms included in the UAE Framework - Key opportunities to accelerate progress towards the targets contained in the Framework, including overcoming identified challenges - Resources that can support implementation, including from the mapping exercise Briefs can focus on topics such as individual targets of the Framework, the iterative adaptation cycle, cross-cutting considerations of the Framework and other key themes. The AC can seek to provide a comprehensive package of resources covering the Framework, while prioritizing themes that were identified as high priorities by Parties e.g. the water target; the food target; the monitoring, evaluation and learning target; the impact, vulnerability and risk assessment target; vulnerable ecosystems, groups and communities; gender-responsive approaches; finance; capacity-building. Accompanying training materials can distil the content of the brief into downloadable videos, PowerPoint slides, checklists and other that Parties and other stakeholders can deploy in their own training and guidance efforts.	The most highly requested product format or type in the survey for Parties was guidance documents. At the same time, there is an extensive catalogue of existing guidance documents and a high number of training-specific gaps and needs identified by Parties. In addition, the relatively short length of these products responds to the requests for accessibility, as they would be less resource-intensive to translate into multiple languages.	Prepare 4x briefs/year accompanied by training materials starting in 2025	LEG, CGE, and topic specific partners including other constituted bodies and organizations, including UN organizations and specialized agencies
2	**Catalyzing the development of Massive Open Online Course(s)** The AC could work with partners to develop one or more massive open online courses to support implementation of the Framework. Topics for these courses could be informed by the above analysis, taking into consideration topics for which online training—as opposed to hands-on, context specific trainings—would be appropriate. This work should be contingent on a thorough analysis of the content of existing online courses, including those contained in the mapping, and	The second most highly request format/type of product requested by Parties in the survey was online courses. In addition, online courses offer the opportunity to provide in-depth guidance on a particular area and make it available to stakeholders around the world.	Prepare a detailed proposal for consideration by AC 27, including scope,	LEG, CGE, PCCB, UN Staff System College, and topic specific partners

	contingent on both a clearly articulated value addition and identification of qualified and suitable partner organizations with whom to develop the courses. Examples of topics for such courses could be: - Implementing the UAE Framework for Global Climate Resilience: Building on and broadening the AC's 2022 publication on *Navigating the landscape of support for the process to formulate and implement NAPs*, modules could cover topics such as explaining the global goal on adaptation; explaining each target and key opportunities to progress towards it; the cross-cutting considerations and how they apply in practice, etc. - Accessing and mobilizing finance for adaptation for implementing the Framework: modules could cover topics such as descriptions, access requirements, and key success factors for securing adaptation finance from each of the climate funds; accessing adaptation finance from multilateral development banks; mobilizing private sector finance for adaptation; and other related issues.	While the AC does not have experience with developing online courses, it can seek out partners who have such experience and the capacity to support this endeavour.[a] It can also engage thematic experts to develop and deliver the course content.	partners, platforms, etc. Consider the development of one course from 2025-2026, aiming to launch in 2026	
3	**Annual peer-to-peer exchanges on implementation of the UAE Framework for Global Climate Resilience** The AC may wish to convene peer-to-peer exchanges, which could provide opportunities for Parties and other stakeholders to share successes and challenges with respect to implementing the Framework, and to exchange resources, lessons learned and good practices. In addition to supporting Parties and other stakeholders to learn from one another, these exchanges can help the AC identify opportunities to finetune or expand its work on this mandate, as well as potential recommendations to include in its annual report to the CMA. The AC may choose to identify specific themes for these exchanges each year and use the information from the AC's work on adaptation country profiles, among others, to identify participants and case studies. These exchanges could be convened in a virtual format, or in-person in conjunction with other events as appropriate. Such exchanges could also be convened at a regional level in partnership with relevant organizations.	Virtual meetings and skill sharing spaces were each selected by around a third of Parties who responded to the survey. These exchanges will provide valuable learning opportunities without the need to further develop guidance or training materials.	One or more peer-to-peer exchanges per year starting in 2025	LEG, CGE, RCCs
4	**In-person trainings or in-depth technical papers as needed** The AC may wish to consider the need for in-person trainings or in-depth technical papers in the future if it becomes apparent that there is widespread need for more	The analysis in this paper suggests the need for a wide range of training and guidance needs, many of which are highly technical and	As needed	LEG, CGE, PCCB other topic or region specific partners

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comprehensive support that the AC is well suited to provide. The AC can take stock of progress and assess the need for such additional activities on an annual basis.	require in-country support for which other organizations may be better placed to provide.	

(a) The AC can learn from the experiences of existing online courses that have been prepared by other bodies and the secretariat. See (1) https://unccelearn.org/course/view.php?id=136&page=overview (2) https://www.learningfornture.org/en/courses/operationalizing-article-6-2-of-the-paris-agreement-achieving-ambitious-climate-action-through-cooperative-approaches/

6. Next steps

70. The AC, at AC 27, may wish to:

a) Agree on its approach to making available the resources contained in the mapping of existing technical guidance and training materials. This approach may be informed by the options presented in table 3;

b) Agree on an initial set of deliverables to develop in order to respond to the mandated contained in para. 44 of decision 2/CMA.5, informed by both the analysis contained in the strategy paper above and the proposals contained in table 5. To ensure effective implementation of these deliverables, the AC may further wish to:

i) Incorporate the agreed deliverables in its flexible 2025–2027 workplan; and

ii) Request the secretariat to develop concept notes for each prioritized deliverable (containing e.g. a scope, objectives, options for their development, etc.) for consideration at AC 28.

c) Agree to initiate further consultations with the CGE and the LEG following AC 27. These consultations will involve sharing decisions taken by the AC and associated actions planned, exploring opportunities for collaboration, and an opportunity to learn any developments from the work of the CGE and the LEG that are relevant to the mandate.

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Annex I. Further information on the methodology behind the systematic review of academic literature

Method

A systematic literature review method was employed to analyze the needs for training and guidance materials related to adaptation as identified in academic literature. This method was chosen over meta-analysis due to the heterogeneous nature of the studies examined. The systematic review process, aligned with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, ensured transparency and rigor in the reporting process, providing an audit trail of evidence-based decisions. A review protocol, developed according to the review aims, detailed the search terms, databases, and screening criteria utilized in the study (Page et al., 2021). This systematic approach allowed for a detailed mapping of the literature, offering insights into the diverse training and technical guidance needs across different themes, stages of the adaptation cycle, and stakeholder levels.

Information Sources and Searches

Based on the established review protocol, an electronic search was conducted to identify relevant literature on May 7, 2024. The search was performed using the Scopus database, selected for its extensive coverage of literature in the social sciences (Mongeon & Paul-Hus, 2016). An iterative process was employed to refine the search keywords, ensuring they were highly relevant to the research questions. This process involved evaluating initial search results and adjusting the keywords accordingly. The final, refined list of keywords[1] was used for a comprehensive search on May 17, 2024. The research query targeted documents where the keywords appeared in the 'article title', 'abstract', or 'keywords' sections of the published literature.

Eligibility Criteria

The eligibility criteria for the literature review were meticulously defined to ensure relevance and comprehensiveness based on the research questions. The criteria included:

- Types of publications: Full-length journal articles, books, book series, trade journals, and conference proceedings written in English.
- Inclusion of non-peer-reviewed literature: non-peer-reviewed articles, notes, comments, book chapters, and conference proceedings were included to ensure a comprehensive assessment of available information.
- Publication year: Publications from 2016 (the entry into force of the Paris Agreement) to 2024 were included in the review.
- Study type: Both qualitative and quantitative studies were included to provide a holistic evaluation.
- Focus of studies: Eligible studies specifically addressed training gaps and needs for adaptation related to climate change.

This approach aimed to capture a broad spectrum of insights and perspectives, ensuring the review covered relevant aspects of the training and technical guidance needs for the implementation of the UAE Framework for Global Climate Resilience.

Study Selection

The initial search in the Scopus database yielded 17,020 results. After removing duplicate entries, the titles and abstracts of the remaining articles were screened, resulting in the exclusion of 12,000 articles due to their irrelevant focus and constructs that were unrelated to the present study. This process narrowed the selection to 5,020 articles, which were then subjected to a full-text review. During the full-text screening, 4,800 additional articles were excluded because they discussed perspectives on adaptation that did not pertain to training needs or guidance materials. This left a subset of 220 articles for detailed analysis. These 220 articles were then analyzed using qualitative content analysis, a robust method frequently employed by researchers in the fields of policy and social sciences to derive meaningful insights (Bouyssou & Marchant, 2011). Following this rigorous analysis, 51 articles met the inclusion criteria and were reviewed in the final stage. Out of these articles, a small subset provided explicit examples of training and guidance needs which could be relevant to the UAE Framework for Global Climate Resilience; these explicit references were extracted to inform the strategy paper. In addition, the articles found through the literature review were supplemented by a small number of articles found through scans of Google Scholar as well as from referenced literature in the contribution of IPCC's Working Group II to the Sixth Assessment Cycle.

Annex II. Institutions recommended by Parties that can be engaged to support the implementation of the UAE Framework for Global Climate Resilience with technical guidance and training materials

Party name	*Institution name*
Armenia	Hydrometeorology and Monitoring Center SNCO of the Ministry of Environment
Benin	University of Parakou: Faculty of Agronomy, Faculty of Geography
Benin	University of Abomey-Calavi: Faculty of Agronomy, Faculty of Geography
Benin	National University of Agriculture
Benin	National Water Institute
Benin	National Agriculture Institute of Benin
Brazil	National Institute for Space Research
Brazil	University of Brasilia
Brazil	University of São Paulo
Brazil	Ministry of Science, Technology and Innovation
Canada	Climate Risk Institute
Canada	International Institute for Sustainable Development
Canada	Intact Centre for Climate Adaptation
Canada	Canadian Climate Institute
Colombia	CODS: Centro de objetivos de desarrollo sostenible de la Universidad de los Andes
Colombia	IDEA: Instituto de Estudios Ambientales de la Universidad Nacional de Colombia
Colombia	Laboratorio de ecosistemas y cambio climático de la Universidad Javeriana de Colombia
Colombia	ICP: Instituto colombiano del petróleo
Colombia	IDEAM: Instituto de Hidrología, Meteorología y Estudios Ambientales
Colombia	INVEMAR: Instituto de Investigaciones Marinas y Costeras José Benito Vives de Andréis
Colombia	IAvH: Instituto Alexander Von Humboldt para la Biodiversidad
Colombia	IIAP: El Instituto de Investigaciones Ambientales del Pacífico John von Neumann
Colombia	SINCHI: Instituto Amazónico de Investigaciones Científicas
Colombia	CIOH: Centro de Investigaciones Oceanograficas e Hidrograficas
Eswatini	The University of Eswatini
France	AdaptAction initiative by the French Development Agency
Germany	Potsdam Institute for Climate Impact Research
Iraq	Al-Mustansiriya University, College of Science, Atmospheric Sciences Department

Jamaica	The University of the West Indies
Jamaica	The Nature Conservancy
Jamaica	Planning Institute of Jamaica
Jamaica	Caribbean Natural Resources Institute
Mauritius	University of Mauritius
Palestine	Environment quality authority
Panama	Argentina 1.5
Panama	Transforma
Panama	Slycan Trust
Paraguay	Investigación para el Desarrollo
Paraguay	Universidad Nacional de Asunción
Paraguay	Hub de cambio climático Arapy
Paraguay	Dirección de Meteorología e Hidrología
Peru	Instituto Geofísico del Perú
Philippines	University of the Philippines Los Baños - College of Human Ecology
Russian Federation	Center for Strategic Research (Moscow)
Suriname	Centre for Agricultuaral Research (CELOS)
Suriname	ADEK University
Suriname	The University of the West Indies
Suriname	CARICOM
The Netherlands	Wageningen University and Research
United Kingdom	AGWA
United Kingdom	Water Aid
United Kingdom	Water Witness
United Kingdom	Arup
United Kingdom	IRC WASH
United Kingdom	Bristol University
United Kingdom	Leeds University
United Kingdom	London School of Hygiene and Tropical Medicine
United Kingdom	ANEW
United Kingdom	IWMI
Yemen	Aden University
Yemen	Hadramout University
Yemen	Sana'a University