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## **Subsidiary Body for Implementation**

### **Sixty-second session**

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Item 5 of the provisional agenda

### **Reporting and review pursuant to Article 13 of the Paris**

**Agreement: provision of financial and technical support  
to developing country Parties for reporting and  
capacity-building**

## **Progress, best practices and remaining challenges related to implementing Article 13 of Paris Agreement**

### **Synthesis report by the secretariat**

#### *Summary*

This report synthesizes views submitted by Parties on their experience and challenges related to implementing Article 13 of the Paris Agreement, including in relation to establishing or enhancing their institutional capacity and national reporting systems, as well as information reported by developing country Parties in the first biennial transparency reports. A facilitative dialogue to discuss the report will be held at the sixty-second session of the Subsidiary Body for Implementation.



## Abbreviations and acronyms

BTR	biennial transparency report
CGE	Consultative Group of Experts
CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
CRT	common reporting table
CTF	common tabular format
ETF	enhanced transparency framework under the Paris Agreement
GEF	Global Environment Facility
GHG	greenhouse gas
MPGs	modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement
MRV	measurement, reporting and verification
NDC	nationally determined contribution
QA/QC	quality assurance/quality control
REDD+	reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks (decision 1/CP.16, para. 70)
SBI	Subsidiary Body for Implementation

# I. Introduction

## A. Background and mandate

1. Article 13 of the Paris Agreement established an enhanced transparency framework for action and support, building on and enhancing the existing MRV arrangements under the Convention.<sup>1</sup> The implementation of Article 13 is a cornerstone of global efforts to build mutual trust and confidence among Parties and promote effective implementation of action and support. As developing country Parties prepare and submit their BTR1s, understanding their experience in implementing Article 13 and the ETF, including enabling factors and remaining challenges, is crucial.

2. CMA 1 decided that Parties shall submit their BTR1 and national inventory report, if submitted as a stand-alone report, in accordance with the MPGs,<sup>2</sup> at the latest by 31 December 2024, and that the least developed countries and small island developing States may submit the information referred to in Article 13, paragraphs 7, 8, 9 and 10, of the Paris Agreement at their discretion.<sup>3</sup>

3. According to Article 13, paragraph 14, of the Paris Agreement, support shall be provided to developing country Parties for implementing Article 13 of the Paris Agreement, and according to Article 13, paragraph 15, support shall also be provided for building the transparency-related capacity of developing country Parties on a continuous basis.

4. CMA 5 invited Parties to submit information on their experience and challenges related to implementing Article 13 of the Paris Agreement, including in relation to establishing or enhancing their institutional capacity and national reporting systems, and requested the secretariat to prepare a synthesis report, by no later than three weeks prior to SBI 62, reflecting information on progress, best practices and remaining challenges contained in those submissions, as well as information reported in developing country Parties' BTR1s, as applicable.<sup>4</sup> CMA 5 also requested the secretariat to organize a facilitative dialogue,<sup>5</sup> to be held at SBI 62, to discuss the synthesis report.<sup>6</sup>

## B. Scope

5. This report synthesizes information submitted by 11 Parties<sup>7</sup> and six groups of Parties<sup>8</sup> in response to the invitation referred to in paragraph 4 above,<sup>9</sup> as well as information reported in developing country Parties' BTR1s,<sup>10</sup> as at 16 May 2025.

6. It is important to note that this report does not capture the full scope or nuance of each of the submissions or BTR1s referred to in paragraph 5 above. For a more comprehensive overview of the information synthesized in this report, the report should be read in conjunction with those submissions and the BTR1s.

<sup>1</sup> The MPGs for the ETF are contained in the annex to decision [18/CMA.1](#). Guidance for operationalizing the MPGs, as well as the corresponding CRTs, CTFs and outlines for reporting, can be found in decision [5/CMA.3](#) and its annexes. Guidance pertaining to reviews of the information reported pursuant to chap. IV of the annex to decision [18/CMA.1](#) is available in decision [9/CMA.4](#).

<sup>2</sup> Decision [18/CMA.1](#), annex.

<sup>3</sup> Decision [18/CMA.1](#), paras. 3-4.

<sup>4</sup> Decision [18/CMA.5](#), paras. 17-18.

<sup>5</sup> See <https://unfccc.int/event/facilitative-dialogue-to-discuss-the-synthesis-report-reflecting-information-on-progress-best>.

<sup>6</sup> Decision [18/CMA.5](#), para. 19.

<sup>7</sup> Australia, Canada, China, Japan, Mauritius, Morocco, Philippines, Serbia, South Africa, Switzerland and United Kingdom of Great Britain and Northern Ireland.

<sup>8</sup> Alliance of Small Island States, European Union, Group of 77 and China, Independent Association for Latin America and the Caribbean, least developed countries and Like-minded Developing Countries.

<sup>9</sup> The submissions are available at <https://www4.unfccc.int/sites/submissionsstaging/Pages/Home.aspx> (in the search field, type "Article 13").

<sup>10</sup> Available at <https://unfccc.int/first-biennial-transparency-reports>.

## **II. Synthesis of views and information related to implementing Article 13 of the Paris Agreement**

### **A. Progress and best practices**

#### **1. Taking into account cross-cutting areas**

7. Many<sup>11</sup> developed country Parties shared that the implementation of the ETF fosters enhanced climate ambition, strengthens accountability for reporting and encourages cooperation among stakeholders and Parties. They emphasized that preparing their BTRs and participating in the technical expert review of BTRs and facilitative, multilateral consideration of progress are essential for tracking progress towards achieving NDCs, building trust and collective confidence among Parties in the process and identifying areas requiring enhanced climate action.

8. A few developed country Parties shared that their experience in preparing national communications and biennial reports proved helpful in interpreting the MPGs owing to the similarities in the relevant reporting provisions. They noted the use of broad terms in the MPGs that are open to interpretation, with one Party opting to address this issue by explaining in its BTR how it had interpreted those terms and consistently applying the interpretations throughout the BTR. The materials from the UNFCCC training programme for technical experts participating in the technical expert review process were also used to aid interpretation of the provisions in the MPGs, where needed.

9. Most developed and developing country Parties recognized that they are at different starting points in terms of their capacity for and experience in preparing for implementing the ETF. One developed country Party, recognizing its own starting point when approaching the preparation of BTR1, conducted an analysis of the provisions of the MPGs to establish a clear plan for collecting the required data and preparing the relevant information for the BTR. The plan set out key milestones and timelines and contained a checklist outlining all reporting provisions by BTR chapter, including the nature of each provision (whether it is a “shall”, “should” or “may” provision) and the roles and responsibilities of stakeholders involved in meeting each provision.

10. Most developing country Parties expressed appreciation for the support provided by the CGE, United Nations entities and partner organizations for preparing their BTR1 but emphasized that the CGE and the secretariat require increased funding to provide the level of support required. A developing country Party expressed that more in-person training and capacity-building support, including at the subregional level, for implementing the ETF should be provided by the CGE with the support of relevant partners.

11. The importance of the GEF and its implementing agencies for assisting developing country Parties in establishing or enhancing their national reporting systems and meeting their reporting obligations under the UNFCCC process was emphasized by most developing country Parties.

12. Most developing country Parties emphasized the need for improved coordination and efficiency in the provision and access of financial support for climate change reporting and building capacity for reporting over time. To address this, the establishment of a structured, country-driven mechanism was proposed. Such a mechanism would help to align financial support with national priorities and minimize duplication of efforts in the provision of support. Through this mechanism, Parties could determine the sequencing of support across thematic areas and incorporate indicators to measure progress in climate change reporting and building capacity for reporting over time. This would enhance predictability, transparency and coordination among donors while supporting long-term planning by

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<sup>11</sup> The following terms are used in this report to indicate the percentage of Parties, separately for developed and developing country Parties, whose submissions or BTRs mention particular information: “a few” for less than 10 per cent, “some” for 10–40 per cent, “many” for 41–70 per cent, “most” for 71–90 per cent and “almost all” for more than 90 per cent. Regarding the submissions by groups of Parties, each Party in the group was counted separately.

national institutions. Donors, in turn, could utilize the mechanism to align their support packages with national priorities, guided by clearly defined country road maps for reporting and reporting-related capacity-building. This approach would facilitate the delivery of larger financial packages through phased disbursements tied to the achievement of specific milestones.

13. Most developing country Parties highlighted improvements in their reporting under the Convention over time, which have contributed to enhanced institutional capacity and more effective reporting. For example, they noted the development and use of more advanced reporting tools and methodologies for preparing GHG emission inventories and reporting on adaptation and mitigation actions thanks to technical and financial support received.

14. Many developing country Parties called for continued and increased support from the GEF and its implementing agencies to ensure developing country Parties can meet their commitments under the Paris Agreement, particularly highlighting the need for equitable financial support and enhanced capacity-building to meet long-term climate goals and climate reporting obligations. Some highlighted that adherence to the principle of common but differentiated responsibilities, coupled with ensuring the provision of adequate, predictable and sustainable financial, technology development and transfer, and capacity-building support by developed country Parties, is fundamental to enabling developing country Parties to fulfil their reporting and review obligations under the Convention and the Paris Agreement. Some noted having estimated the costs of establishing or improving and maintaining their national reporting systems and preparing each BTR, which revealed a gap between financial support needed and received.

15. Implementing the ETF was noted by some developing country Parties as having fostered inter-institutional dialogues on climate change reporting, strengthened their climate governance, even amid periods of instability, created space for the participation of non-governmental actors, including Indigenous Peoples, in reporting on climate change and encouraged the development of digital platforms aimed at enhancing the transparency and traceability of climate policies and actions. However, it was underlined that ongoing progress in implementing the ETF will depend on adequate, predictable, and sustainable financial and technical support, long-term institutional capacity-building and improved coordination across climate planning instruments.

16. Some developing country Parties highlighted that regional exchanges of experience and best practices pertaining to climate reporting, as well as peer-to-peer learning, have proven highly valuable in developing technical solutions for and fostering innovation in national reporting systems and therefore the regional cooperation should continue to be strengthened.

17. Some developing country Parties noted that their BTR1 offered a means to share their unique challenges relating to vulnerability to climate change and adaptation, adding that this information was used to inform their national development policy and secure the support necessary for overcoming those challenges and contributing to global efforts to address climate change.

18. A few developing country Parties also mentioned private sector collaboration and public-private partnerships as key to leveraging resources and expertise for climate reporting. One Party expressed the view that there is a need to continue fostering dialogue on and exchange of best practices among all Parties, facilitated by the secretariat, with the aim of enabling Parties to learn from the collective experience of preparing BTRs gathered with each cycle, thus contributing to improved reporting over time.

19. The following additional best practices pertaining to taking cross-cutting areas into account in implementing Article 13 of the Paris Agreement were each shared by a few developing country Parties:

(a) Developing standardized monitoring and evaluation frameworks for mitigation and adaptation actions and improving them over time with a view to facilitating the tracking of progress towards implementing those actions and reporting thereon in the BTR;

(b) Putting in place systems to ensure the availability, quality and uptake of climate-related data and information, such as systems for meteorological and hydrological monitoring, data collection and information dissemination;

(c) Incorporating climate action into planning and budgeting processes in order to ensure that climate resilience and environmental sustainability are embedded across all levels of governance.

## **2. Establishing or enhancing institutional arrangements for implementing the enhanced transparency framework**

20. Most developed country Parties highlighted the importance of having a centralized government agency, unit or body with the authority and obligation to advise on, coordinate and manage climate change related matters, including reporting thereon, and to ensure that the national reporting system is aligned with global best practices, the Convention, and the Paris Agreement. Many also highlighted that formalizing the role and responsibilities of stakeholders pertaining to implementing the ETF has proven useful for ensuring stakeholder buy-in, leveraging technical resources, and fostering closer collaboration between experts and data providers to improve data collection, quality, and consistency. One developed country Party emphasized that effective communication with relevant stakeholders was key to the timely submission of its BTR1.

21. Further, many developed country Parties underlined that robust institutional arrangements are key to enhancing the quality of reporting under the ETF on a continuous basis, with one emphasizing that establishing and gradually improving such arrangements will take time. It was also noted that reporting systems should be designed to provide data and information that can be used to inform the formulation of domestic policy pertaining to climate change and implementation of climate action.

22. One developed country Party mentioned that, instead of an advanced information technology system, it used a simple system for collecting data and preparing information for reporting under the ETF, involving storing and accessing Microsoft Excel spreadsheets and exchanging emails with stakeholders for sharing data and information.

23. Most developing country Parties reported benefiting from the Capacity-building Initiative for Transparency or other bilateral or multilateral support initiatives and receiving GEF funding for the preparation of their BTR1, both of which have been critical for improving their institutional arrangements and technical capacity for climate reporting.

24. Additionally, most developing country Parties noted that the following best practices could be considered for effectively implementing the ETF: (1) securing increased financial support and technology transfer from developed country Parties to scale up national reporting system infrastructure and address technical challenges; (2) increasing the provision of technical training and capacity-building to stakeholders in order to improve data collection and accuracy; (3) undertaking institutional reforms to streamline and improve effectiveness of climate reporting; and (4) strengthening partnerships with local communities, academic institutions and the private sector to facilitate data collection and verification, thereby reinforcing the overall credibility of the climate reporting process.

25. Some developing country Parties reported establishing or strengthening interministerial bodies to coordinate their climate reporting efforts and consolidate data from stakeholders from key sectors such as energy, agriculture and finance. Conducting training sessions on data collection for climate reporting was highlighted as beneficial for equipping stakeholders with the necessary tools and skills.

26. A few developing country Parties reported applying best practices and lessons learned from previous reporting cycles under the Convention to develop BTR preparation road maps, which provided a breakdown of tasks to be undertaken, the stakeholders involved in each task and the related time frames.

27. A few developing country Parties indicated that they have adjusted their national plans for preparing climate change reports, such as national communications, adaptation communications and BTRs, with a view to establishing a coherent and time-bound framework in order to improve institutional coordination with regard to collecting and

analysing the data needed, enhance clarity in terms of timelines for the different reporting steps and optimize resource allocation.

28. The following additional best practices regarding institutional arrangements were each noted by a few developing country Parties:

(a) Formalizing the roles and responsibilities pertaining to reporting obligations of different stakeholders in legislative or other government frameworks with a view to providing legal clarity regarding MRV arrangements, tracking of NDC implementation and GHG inventory reporting;

(b) Strengthening human resources and preserving institutional knowledge for the preparation of climate reports by developing staff training programmes, thematic task forces, knowledge-sharing platforms, and formalized learning strategies, especially in the context of high staff turnover rates and political instability;

(c) Establishing working groups, interministerial committees and coordination platforms to ensure consistency of data-sharing and reporting among ministries, local authorities and other stakeholders.

### **3. Preparing national inventory reports**

29. Most developed country Parties shared that they have developed a centralized database for collecting data for national GHG inventory reporting. In addition, they reported developing guidelines, tools and methodologies for collecting and analysing the related data and sharing them with stakeholders to enhance data comparability and consistency.

30. The use of advanced technologies in national reporting systems, supported by multilateral or bilateral funding, was reported by a few developing country Parties. These include cloud-based solutions, automated data entry systems and automated reporting tools aimed at streamlining the collection and management of climate data. These Parties highlighted that, by using these technologies, data accessibility has been improved and the quality of reporting enhanced.

31. The following additional best practices regarding the preparation of national inventory reports were each noted by a few developing country Parties:

(a) Developing an inventory improvement plan addressing both outstanding issues from previous reports and new challenges identified, with timelines and priority levels specified and responsibilities assigned to relevant agencies;

(b) Improving the accuracy of activity data and automating the collection thereof by conducting periodic sector-specific surveys and censuses;

(c) Establishing partnerships with stakeholders from academia and research institutions to refine data-collection methodologies and guidelines.

### **4. Reporting on progress in achieving nationally determined contributions**

32. Most developed country Parties highlighted measures they have taken to enhance their tracking and reporting of progress towards implementing and achieving their NDCs, including assigning authority to a centralized climate change unit to regularly assess and report on such progress, applying a methodology that considers sector-specific data for tracking emission reductions against climate commitments, integrating NDC monitoring into the broader climate policy framework, using data from the national inventory system to track progress towards achieving both mitigation and adaptation goals, and applying the terms used in the MPGs consistently throughout the narrative sections of the BTR and the CTFs.

33. The establishment of robust systems or centralized databases for tracking progress towards implementing NDCs was reported by a few developing country Parties. Such systems and databases provide a clear framework for monitoring the implementation of mitigation and adaptation actions and for reviewing and consequently updating, as needed, related targets.

34. A few developing country Parties noted that, in defining indicators to track progress towards the achievement of NDC targets or policies, consideration must be given to the costs

associated with collecting the data needed for the indicator to decide whether it can be used or not.

## **5. Reporting on climate change impacts and adaptation**

35. Most developed country Parties highlighted their progress in adaptation reporting, including the development of a platform for reporting progress in implementing adaptation actions and sharing best practices in this regard; the preparation of a national adaptation plan highlighting how climate change impacts and vulnerabilities will be addressed and how progress will be tracked; the integration of adaptation actions into a nationwide climate strategy; and the alignment of adaptation actions with the long-term goals of the Paris Agreement.

36. Strengthening training and capacity-building for technical teams for preparing the adaptation section of the BTR and understanding the adaptation-related provisions of the MPGs was highlighted as essential by most developing country Parties.

37. A few developing country Parties noted having developed monitoring, evaluation and learning systems considering the global goal on adaptation and national adaptation goals. Such systems are aimed at standardizing the tracking of adaptation initiatives, addressing data gaps and enabling more effective prioritization of adaptation needs and better alignment with national adaptation priorities.

38. A few developing country Parties noted the importance of identifying adaptation indicators that can be monitored and aligned with national adaptation priorities, and a few others underlined the usefulness of combining qualitative and quantitative approaches to monitoring, evaluation and learning pertaining to implementation of adaptation actions.

## **6. Reporting on financial, technology development and transfer, and capacity-building support**

39. Most developed country Parties indicated that over time they have established systems for tracking climate finance flows both domestically and internationally, including from national climate funds and multilateral climate finance channels, and for reporting on commitments and contributions to bilateral and multilateral financial support channels.

40. Some developing country Parties noted that they have been able to enhance their reporting under the ETF on technology development and transfer and capacity-building support needed or received by aligning that reporting with their reporting under the Technology Mechanism on technology transfer and development.

41. The following additional best practices regarding reporting on support needed and received were each noted by a few developing country Parties:

(a) Embedding climate finance tracking into existing national financial systems to enhance data reliability and the long-term sustainability of reporting;

(b) Developing and implementing a climate budget tagging system to identify and classify climate-relevant expenditures;

(c) Establishing a national system for tracking financial, technology and capacity-building support that strengthens the ability to comply with the MPGs by enabling a more precise assessment of support needs, effective tracking of support received and enhanced overall transparency.

## **B. Remaining challenges**

### **1. Taking into account cross-cutting areas**

42. One developed country Party mentioned that applying the MPGs and preparing the BTR1 was a learning experience, and that challenges were faced in securing sufficient technical resources at a time of high staff turnover and in meeting the increased need for better coordination with line ministries and other stakeholders to collect the required data.



43. Most developing country Parties underlined a lack of support received for preparing for participation in the technical expert review of BTRs and the facilitative, multilateral consideration of progress.

44. Many developing country Parties expressed concerns about the adequacy, timeliness, sustainability, and predictability of available reporting-related capacity-building support and highlighted the need for developed country Parties to demonstrate stronger commitment to and more visible leadership in its provision. Systemic challenges, including weak institutional capacity, poor data management capability and high staff turnover, were identified as undermining efforts to prepare national communications and BTRs on a continuous basis, making the provision of long-term, predictable support and the establishment and maintenance of national reporting systems critical for strengthening reporting-related capacity.

45. A few developing country Parties noted challenges in other cross-cutting areas, such as in integrating gender considerations into and involving Indigenous Peoples in implementing the ETF, which requires inclusive consultations, financial and technical support, and coordination with ministries and other stakeholders; and in navigating the multiple sources of support available for implementing the ETF, as support is often fragmented and directed through various channels, which complicates efforts to build sustainable and coherent national capacity for this purpose.

46. Further, a few developing country Parties indicated that their application of the flexibility provisions detailed in the MPGs in the light of their capacities was closely tied to factors such as lack of national data, institutional capacity and financial resources. Their ability to improve their BTRs on a continuous basis will depend on how effectively they can address these factors.

47. Most developing country Parties highlighted challenges in relation to the support provided for reporting and capacity-building by the GEF and its implementing agencies, noting, for example, that:

(a) With respect to funding received:

(i) There has been a need to supplement GEF funds with resources from other donors or national budgets to cover the full scope of reporting under the MPGs;

(ii) The current resources available under the GEF and its implementing agencies are insufficient to meet the transparency-related needs of developing country Parties in a stable manner, noting that the ability of the GEF to provide timely, adequate and predictable support depends on sufficient and consistent replenishment of its funding;

(iii) There is a need for dedicated funding for reporting on activities that are not mandatory under the MPGs. For example, REDD+ activities are not mandatory to report on in BTRs under the MPGs, meaning there is no corresponding increase in financial support under the GEF for reporting thereon, so Parties that wish to include these activities in their BTRs must do so under the existing resource allocation;

(iv) To achieve the scale and ambition with which transparency of action and support is reflected in Article 13 of the Paris Agreement, financing models need to extend beyond project-based approaches to preparing BTRs and address long-term institutional needs;

(b) With respect to access to or disbursement of funding:

(i) The complexity and length of the processes for accessing GEF funding has led to delays of up to two years from proposal submission to disbursement of funds, which affects the planning and preparation of BTRs;

(ii) The fact that each of the GEF implementing and executing agencies has different modalities and procedures often leads to confusion, delays and perceptions of unequal treatment among developing country Parties;

(c) With respect to procedures and modalities:

- (i) There is need for greater involvement of national Governments in communications between the GEF and its implementing agencies to ensure that country-specific perspectives with respect to support and capacity-building for climate reporting are considered and administrative obstacles are resolved more swiftly;
- (ii) GEF modalities and procedures could be more flexible and adapted to the national context, for example they could be adjusted with a view to preventing funding gaps between reporting cycles to ensure continuity of staff in national technical teams;
- (iii) There is a need to strengthen the global climate finance architecture in the area of climate reporting;
- (iv) Closer cooperation among the GEF, the CGE and relevant United Nations entities and partners on addressing remaining gaps in financial and technical support could help to ensure that developing country Parties are fully equipped with the expertise and capacity they need to implement the ETF.

48. Most developed and developing country Parties reported challenges related to using the ETF reporting tools and expressed the following suggestions for addressing them:

- (a) Building capacity to use the tools, including by preparing guidance documents on matters such as the number of characters allowed in text input fields, completeness checks and error messages; and providing hands-on training;
- (b) Improving the usability of the tools, such as by making them available in multiple languages in order to make data input more efficient and user-friendly; enhancing their user-friendliness, particularly with a view to simplifying completion of the CRTs; creating a forum in which users can share experience of using the tools and seek assistance from other users regarding any issues encountered; improving communication by the secretariat on changes or updates to the tools; and providing Parties with the opportunity to share with the secretariat feedback and input on the tools, including areas for technical improvement;
- (c) Improving the functionality and performance of the tools, such as by enabling multiple tables and data to be uploaded and validated at once; shortening the loading time for manual data input and the system response time; adding functionalities to avoid errors when inputting data and database system crashes that may occur when, for example, entering comments or explanations for the use of notation keys; refining the completeness checks to prevent uncompleted optional documentation fields from generating error codes; and adding a functionality enabling the direct submission of CTFs and CRTs to the secretariat.

## **2. Establishing or enhancing institutional arrangements for implementing the enhanced transparency framework**

49. Most developed country Parties shared ongoing challenges in building institutional capacity to implement the ETF. One common challenge related to facilitating coordination between the central agency for climate reporting and subnational or municipal authorities and line ministries, which often have their own reporting systems, standards and methodologies in place, leading to a lack of common rules for reporting and difficulties in resolving issues pertaining to, for example, data consistency and data management, all of which contributes to delays in preparing national climate reports.

50. Most developing country Parties expressed a lack of national capacity to establish and maintain a domestic MRV system, more specifically a lack of up-to-date and reliable data and methodologies, national monitoring, evaluation and learning systems for adaptation measures, and support and institutional arrangements for the long-term development and retention of qualified technical staff tasked with elaborating and improving long-term GHG scenarios and mitigation pathways.

## **3. Preparing national inventory reports**

51. Most developed country Parties highlighted challenges in preparing national inventory reports, such as those relating to consistency in how data are collected across

subnational and municipal authorities; timeliness of data submission by stakeholders; standardization of data-collection and data management methodologies; and integration of sector-specific data into a cohesive national reporting framework.

52. Most developing country Parties underlined significant gaps in data for several sectors, particularly the agriculture, forestry and other land use sector, resulting in ongoing challenges in ensuring completeness of data and using data from other sources to fill data gaps pertaining to a certain sector in national inventory reports.

53. The limited availability and poor quality of regional or local GHG emission factors, particularly for key sectors such as agriculture and land use, were also noted by most developing country Parties as a challenge, as was the limited capacity to develop and apply country-specific emission factors that best fit the national circumstances.

54. Most developing country Parties reported having limited access to and capacity to use digital technologies for enhancing national reporting systems, including digital MRV systems, geographic information systems and artificial intelligence, noting that such technologies are crucial for efficient data collection, processing, management and archiving.

55. A few developing country Parties mentioned that their limited capacity to consistently collect, process and manage activity data remains a significant challenge, and others mentioned their need to strengthen national capacities for conducting QA/QC activities and completing the CRTs.

56. Challenges in using the Intergovernmental Panel on Climate Change inventory software and ETF reporting tools were reported by most developing country Parties, including lack of consistency in emission and removal category names between the software and tools, insufficient technical expertise in and limited human resources allocated to applying the software and tools for inventory preparation, difficulties in using interoperability between the software and the tools, and lack of capability to connect the inventory reporting module of the ETF reporting tool to national systems.

57. A few developing country Parties noted other challenges in preparing national inventory reports, such as lack of technical capacity for applying higher-tier methodologies for estimating emissions for key categories, improving uncertainty analyses and QA/QC processes, and developing GHG emission projections.

#### **4. Reporting on progress in achieving nationally determined contributions**

58. Most developed country Parties expressed challenges pertaining to setting appropriate NDC targets, especially in the context of uncertainty surrounding economic growth and shifts in sectoral activity, which might affect their ability to meet those targets, and projecting long-term trends in emission reductions, particularly given the volatility in sectoral emissions.

59. Many developing country Parties highlighted that tracking progress in implementing their NDCs has been difficult owing to a lack of standardized metrics and insufficient data being available. A few others reported that the lack of linkages between their NDC and national development policy framework makes it difficult to assess implementation of the NDC; as such, they have prioritized the development of robust information systems to track NDC implementation and the integration of NDCs into national and subnational development planning.

60. Some developing country Parties highlighted their concerns about funding being insufficient to enable them to enhance their reporting on progress towards achieving NDCs, in particular funding for developing relevant indicators for monitoring such progress.

61. Other challenges were also shared by developing country Parties, including in relation to enhancing technical capacity and developing standardized methodologies for assessing and quantifying the co-benefits of implementing NDCs, such as improved public health, reduced air pollution and enhanced economic development; obtaining the data and developing the tools and methodologies necessary for accurately estimating the impacts of mitigation policies and measures on GHG removal and emission projections under various scenarios; and establishing a system for monitoring progress towards achieving NDC targets,

involving conducting regular reviews of climate change strategies and making adjustments to them on the basis of the results of those reviews.

## **5. Reporting on climate change impacts and adaptation**

62. Most developed country Parties highlighted that enhancing their adaptation reporting in areas such as biodiversity and water resources remains a challenge owing to regional disparities in capacity, resources and data availability, complicating data collection and measurement of the effectiveness of adaptation actions; that there is a need to ensure that data-sharing processes are coordinated across sectors to prevent delays in adaptation reporting; and that challenges exist in measuring the effectiveness of adaptation measures at the national level, particularly owing to a lack of adaptation indicators that can be monitored and the often inadequate reflection of local-level adaptation actions in national reports.

63. Most developing country Parties noted that gaps in data and lack of high-quality data, as well as resource constraints, prevented them from reporting the necessary information in the BTR1 in more detail. The most common challenge faced in reporting on climate change impacts and adaptation was collecting the data necessary for analysing the impacts of climate change on specific sectors and the vulnerability of specific sectors to climate change. In addition, data on averting, minimizing, and addressing loss and damage associated with climate change impacts were gathered from diverse data sources, making data collation and analysis a complicated task.

64. The lack of knowledge, tools, and models for systematically and periodically assessing climate risks at appropriate scales and using climate change scenarios from common global models was reported by most developing country Parties. Other challenges expressed included gaining an understanding of and the ability to record the impacts of climate change on vulnerable groups; identifying, improving and using indicators for measuring progress in the implementation of adaptation actions; conducting relevant capacity-building activities, including for assessing the impacts of observed climate change on natural ecosystems, socioeconomic systems and vulnerable regions; conducting climate change impact and risk assessments for key sectors and regions; developing methodologies for monitoring and evaluating the implementation and impacts of adaptation policies and actions; conducting research on nature-based solutions; and assessing the progress of implementing adaptation action at the international level.

65. Most developing country Parties underlined challenges in assessing and reporting information on averting, minimizing, and addressing loss and damage associated with climate change impacts and in establishing institutional arrangements to enable such assessment and reporting. These challenges were cited as being attributable to the absence of systematic frameworks for monitoring the implementation and effectiveness of activities related to averting, minimizing, and addressing loss and damage associated with climate change impacts, making it difficult to integrate loss and damage reporting into BTRs.

66. In addition, many developing country Parties faced difficulties in creating standardized adaptation and loss and damage metrics and quantifying climate resilience in order to meet the transparency-related reporting requirements, with lack of tools and standardized methodologies for assessing climate risks systematically also highlighted as a major challenge. One developing country Party reported challenges in identifying and recording the impacts of climate change on vulnerable communities and sectors. A few mentioned the need to develop appropriate metrics and data to track the risk-driving factors and the effectiveness of adaptation measures, and the need to strengthen monitoring and evaluation processes, including by developing reliable indicators for vulnerability and adaptation assessments, as also highlighted.

## **6. Reporting on financial, technology development and transfer, and capacity-building support**

67. Most developed country Parties highlighted challenges in effectively tracking private sector contributions to climate finance and including private sector finance flows in national communications and BTRs; ensuring that all finance flows are properly categorized; and

aligning domestic financing mechanisms with international climate finance reporting standards, particularly in relation to private sector financing and non-governmental flows.

68. Most developing country Parties reported difficulties in tracking financial, technology transfer and capacity-building support owing, for example, to a lack of capacity to coordinate the reporting of that support, which is often directed via multiple channels, across stakeholders. Some others highlighted that tracking the effectiveness of capacity-building programmes continues to be challenging, because there are few systems in place for doing so.

69. In addition, most developing country Parties highlighted the lack of a clear definition of climate finance for reporting on financial support needed and received, as well as the limited statistics and accounting and reporting methodologies for reporting on financial, technology development and transfer, and capacity-building support needed and received.

70. A few developing country Parties noted other challenges pertaining to reporting on financial, technology development and transfer, and capacity-building support, such as lack of capacity to formulate project proposals for climate action that are likely to attract the interest of donors or potential partners; lack of capacity to assess the alignment of climate projects with national climate strategies and to monitor the implementation and analyse the impacts of those projects; and difficulties in strengthening the technical capacities of national experts to apply methodologies and tools for identifying financial, technology development and transfer, and capacity-building support needs, and estimating and reporting on support needed and received.

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