



United Nations

FCCC/TP/2023/5



Framework Convention on
Climate Change

Distr.: General
16 October 2023

English only

Problems, constraints, lessons learned and capacity-building needs in preparing national communications and biennial update reports

Updated technical paper by the Consultative Group of Experts

Summary

This updated technical paper compiles and synthesizes information on problems, constraints, lessons learned and capacity-building needs identified in the process of preparing national communications and biennial update reports of developing country Parties. The paper will continue to inform the work of the Consultative Group of Experts in identifying and providing technical assistance to address the needs of developing country Parties in this regard and serve as a source of lessons learned for those Parties.



Abbreviations and acronyms

BTR	biennial transparency report
BUR	biennial update report
CGE	Consultative Group of Experts
ETF	enhanced transparency framework under the Paris Agreement
GHG	greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
LDC	least developed country
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
NC	national communication
NDC	nationally determined contribution
QA/QC	quality assurance/quality control
SIDS	small island developing State(s)
TASR*	summary report on the technical analysis of biennial update reports

* Used exclusively in figure 1.

I. Introduction

A. Mandate

1. The Conference of the Parties, at its twenty-sixth session, adopted the revised terms of reference of the CGE¹ and reaffirmed that, in fulfilling its mandate to support implementation of the ETF, the CGE shall:²

(a) Facilitate the provision of technical advice and support to developing country Parties, as applicable, including for the preparation and submission of their BTRs, and facilitate improved reporting over time in accordance with the MPGs;

(b) Provide technical advice to the secretariat on the implementation of the training for technical expert review teams referred to in decision 18/CMA.1, paragraph 12(c).

2. As per the revised terms of reference, the CGE, in providing technical advice and support, should, to the extent possible, identify and take into account, as appropriate, lessons learned and best practices, and the challenges, constraints and needs of developing country Parties in preparing, as appropriate, NCs, BURs, national GHG inventories and BTRs, including in relation to financial and other support available, as well as the areas for improvement and capacity-building needs identified in the technical analyses of BURs and the technical expert reviews of BTRs.³

B. Scope of the paper

3. In response to the mandate above and as part of its workplan for 2023,⁴ the CGE agreed to continue conducting an assessment of the existing and emerging problems, constraints, challenges, lessons learned and capacity-building needs of developing country Parties in implementing the existing MRV arrangements under the Convention and preparing for the ETF, and to update the technical paper prepared in 2022.⁵

4. This updated technical paper takes into account the following sources of information in addition to those consulted previously:

(a) The 20 NCs and 21 BURs submitted between 1 July 2022 and 30 June 2023;

(b) The 28 summary reports on the technical analysis of BURs published between 1 July 2022 and 30 June 2023;

(c) An online survey⁶ conducted by the CGE from 1 April to 15 July 2023 with a view to gathering up-to-date feedback from developing country Parties on the status of implementation of the existing MRV arrangements and preparation for the ETF, including institutional arrangements in place at the national level, associated problems and constraints, lessons learned and capacity-building needs.

5. This paper draws on the most recent 152 NCs and 90 BURs that had been submitted by 152 developing country Parties as at 30 June 2023 and the 59 summary reports on the technical analysis of BURs that had been published as at the same date. In effect, the challenges and needs reported in previous NCs and BURs have been superseded with information from a more recent report, if available. The reporting cycles of the reports compiled and synthesized range from NC1 to NC6, from first to fifth BUR, and from first to fourth summary report on the technical analysis of BURs. Figure 1 provides an overview of the reports compiled and synthesized, by reporting cycle and region.

¹ Decision 14/CP.26, para. 1. The revised terms of reference are contained in the annex to the decision.

² Decision 14/CP.26, annex, para. 3.

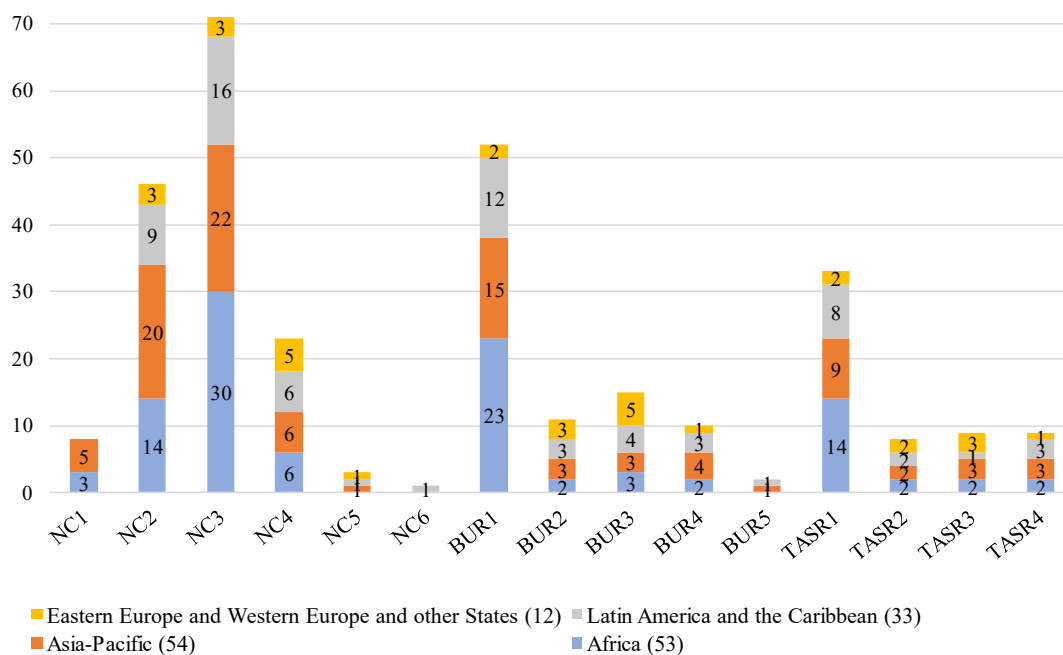
³ Decision 14/CP.26, annex, para. 4(b).

⁴ Available at <https://unfccc.int/CGE>.

⁵ FCCC/SBI/2022/INF.12.

⁶ The report on the survey is available at <https://unfccc.int/documents/631212>.

Figure 1
Number of most recent reports compiled and synthesized for this paper by reporting cycle and region



Note: The figures in parentheses specify the number of developing country Parties whose reports were compiled and synthesized for each region.

C. Possible action by the Subsidiary Body for Implementation

6. The Subsidiary Body for Implementation will be invited to consider this paper and to provide guidance, as appropriate, to the CGE.

II. Approach to the compilation and synthesis

7. Between 1 July 2022 and 30 June 2023, the CGE compiled and synthesized information on problems and constraints faced and lessons learned by developing country Parties in the process of preparing NCs and BURs, including the challenges and needs they reported in their most recent NCs and BURs and the capacity-building needs identified in the summary reports on the technical analysis of BURs.

8. Developing country Parties reported their challenges and needs in various ways, using terms such as “problem”, “constraint”, “gap”, “barrier”, “opportunity for improvement” and “lack of” something. Incorporating information reported in a wide variety of ways into a specific data structure requires a strong analytical framework. The compilation and synthesis was therefore undertaken taking into account the following aspects of the challenges and needs reported:

(a) Theme: as per the mandatory information to be reported in NCs and BURs under the existing MRV arrangements, challenges and needs were compiled and synthesized under the following themes:

- (i) Preparing national GHG inventories;
- (ii) Reporting on mitigation actions;
- (iii) Reporting on climate change impacts and adaptation;
- (iv) Reporting on support needed and received;

(v) Cross-cutting issues relating to transparency at the national level, such as raising awareness of, or political buy-in to addressing, transparency issues and developing or strengthening corresponding national systems. In particular, issues that were not classified by a Party under any of the themes listed in the subparagraphs above were categorized under this theme;

(b) Area: a developing country Party may identify and report a need when there is a gap between the current state and the optimal state, namely the minimum conditions needed to sufficiently meet the reporting requirements. Barriers to addressing such a gap may exist in different areas and can be addressed by adopting different approaches. For the purpose of the compilation and synthesis, these approaches were categorized under the following areas:

(i) Institutional arrangements, which refers to national systems, arrangements and processes to support implementation of the existing MRV arrangements, such as the engagement of all relevant stakeholders. Issues categorized under this area include establishing and formalizing a process or working mechanism for defining roles and responsibilities and coordinating action across stakeholders; creating a designated agency or focal point to lead transparency activities; creating and strengthening stakeholder awareness of transparency; creating enabling environments such as through policy or legal arrangements that mandate the preparation of national reports; and strengthening institutional capacity to sustain and improve the transparency process over time;

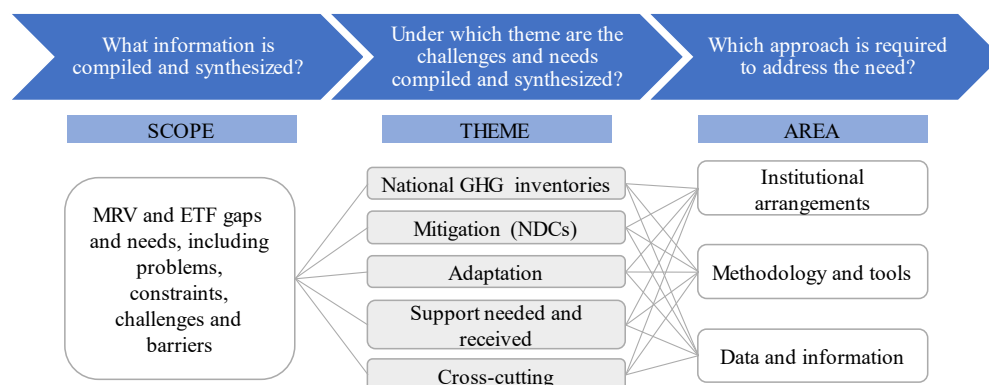
(ii) Methodology and tools, which refers to the means used to enhance the technical and knowledge capacity required to prepare and report information relating to the themes. Such means include practical and easy-to-apply guidance, tools and methods; training relevant national experts to apply existing guidelines, guidance, tools and methods; and interpreting and analysing information gathered using tools and methods and translating it into information that meets the requirements of the relevant reporting guidelines. This area also covers the technological infrastructure necessary for generating the required data, such as stations, networks and equipment for monitoring, observing and technical backstopping, including scientific research and studies on developing practical country-specific tools and methods, and generating necessary data;

(iii) Data and information, which addresses various issues relating to data, ranging from availability of quality data and accessibility of data (owing to confidentiality issues) to data-collection and data management processes. Issues pertaining to data-collection processes relate to establishing and enhancing databases and data-sharing platforms and systems, while issues relating to data management processes are associated with documenting and archiving data, developing and improving QA/QC procedures, and managing uncertainty.

9. Figure 2 provides an overview of the approach to the compilation and synthesis, including the scope and aspects of the information examined.

Figure 2

Analytical framework for the compilation and synthesis of challenges and needs reported by developing country Parties



10. To examine the aspects of the challenges and needs reported, as outlined in paragraph 8 above, developing country Parties were considered as follows:

- (a) As a group (referred to as “Global” in figures 3–5 and 7–11 below);
- (b) By geographical region: Africa, Asia-Pacific, Latin America and the Caribbean, and Eastern Europe and Western Europe and other States;
- (c) By taking into account the special circumstances of the LDCs and SIDS: one group consisting of the LDCs and SIDS, and one group consisting of other developing country Parties that are not LDCs or SIDS.

11. The findings from the 2023 CGE survey referred to in paragraph 4(c) above were summarized and included in this compilation and synthesis, where applicable.

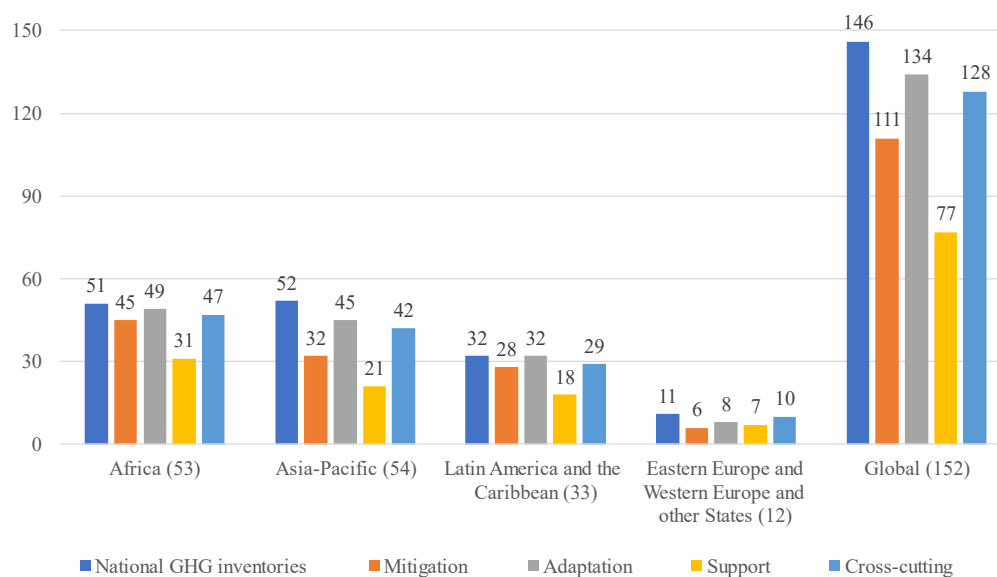
III. Results of the compilation and synthesis

A. Challenges and needs reported by developing country Parties

12. This subchapter provides an overview of the challenges and needs reported by developing country Parties, broken down by theme and area and disaggregated by group of developing country Parties listed in paragraph 10 above.

13. Figure 3 shows the number of developing country Parties that reported one or more challenges and needs under each theme by region and globally. At the global level, challenges and needs related to preparing national GHG inventories were reported by the largest number of Parties (146, or 96 per cent of the Parties whose reports were compiled), followed by challenges and needs related to reporting on climate change impacts and adaptation (134 Parties, or 88 per cent) and to cross-cutting issues (128 Parties, or 84 per cent). At the regional level, challenges and needs associated with national GHG inventories, climate change impacts and adaptation, and cross-cutting issues featured more strongly than mitigation and support themes.

Figure 3
Number of developing country Parties that reported one or more challenges and needs under each theme, by region and globally

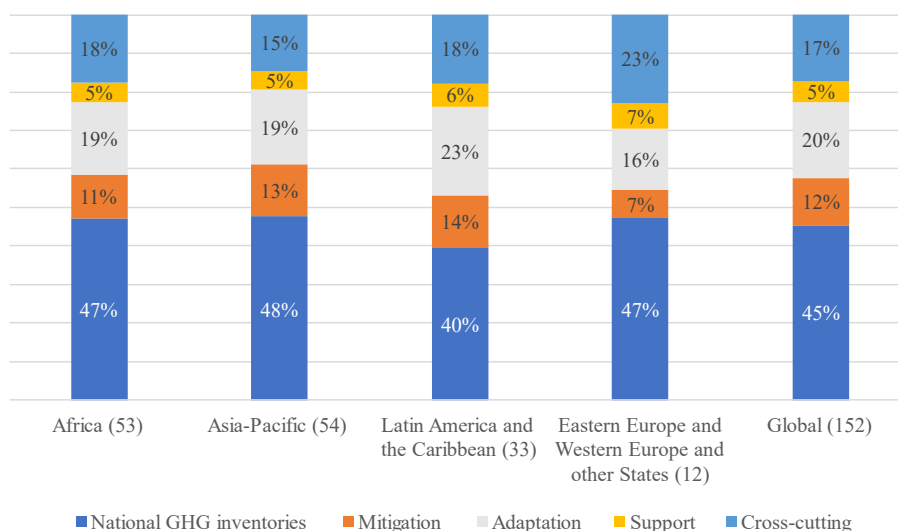


Note: The figures in parentheses specify the number of developing country Parties whose reports were compiled and synthesized.

14. Figure 4 shows the thematic breakdown of the challenges and needs reported by developing country Parties by region and globally. Although there were similar patterns in the order by frequency of the reporting of challenges and needs under the different themes,

the exact share of each theme as a percentage of the total challenges and needs identified varied across the regions. While countries in all regions reported the highest percentage of challenges and needs as being those related to national GHG inventories, this was followed by challenges and needs pertaining to climate change impacts and adaptation for Africa, Asia and the Pacific, and Latin America and the Caribbean, and needs and challenges pertaining to cross-cutting issues for Eastern Europe and Western Europe and other States.

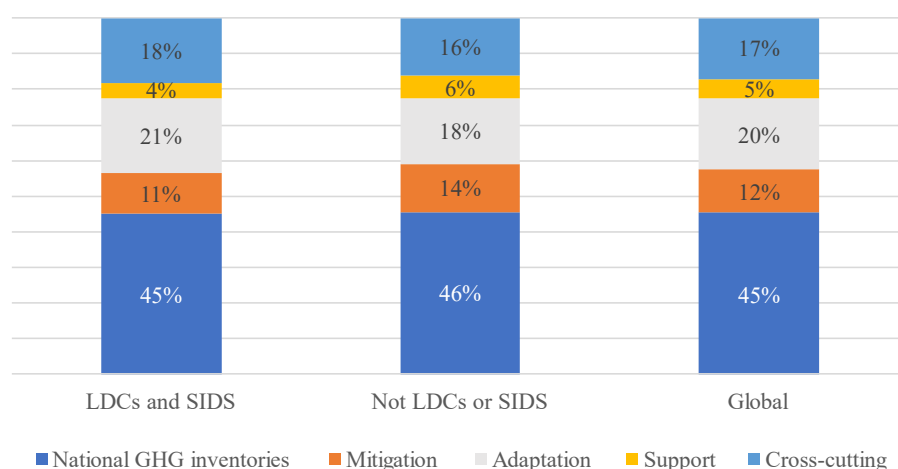
Figure 4
Thematic breakdown of challenges and needs reported, by region and globally



Note: The total percentages were calculated using exact (not rounded) values and may therefore differ from the total percentages calculated with the rounded thematic-level percentages provided in the figure.

15. Figure 5 shows the thematic breakdown of the challenges and needs reported by developing country Party group and globally. The thematic breakdown of challenges and needs reported differed between the LDCs and SIDS and other developing country Parties that are not LDCs or SIDS. For example, the LDCs and SIDS reported a 3 per cent higher share of challenges and needs associated with reporting on climate change impacts and adaptation than other developing country Parties.

Figure 5
Thematic breakdown of challenges and needs reported, by developing country Party group and globally

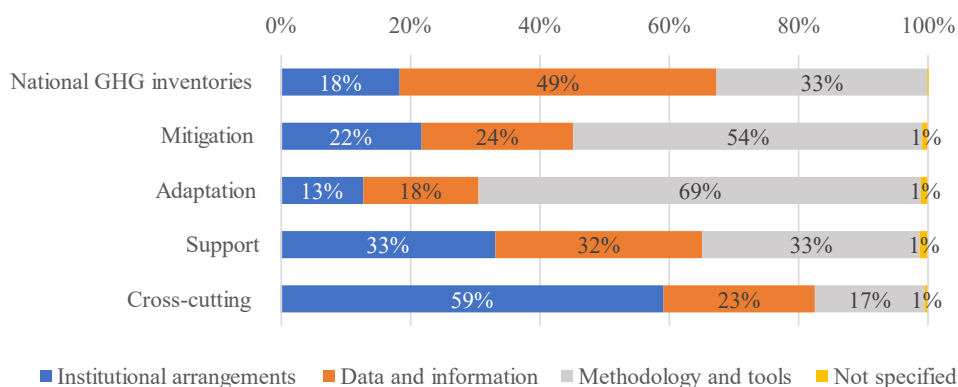


Note: The total percentages were calculated using exact (not rounded) values and may therefore differ from the total percentages calculated with the rounded thematic-level percentages provided in the figure.

16. The breakdown of areas in which challenges and needs were identified also differed by theme, as shown in figure 6. For challenges and needs associated with national GHG inventories, a substantial portion (49 per cent) were in the area data and information; for challenges and needs associated with reporting on mitigation actions and on climate change impacts and adaptation, the majority (54 and 69 per cent respectively) were in the area methodology and tools; and for cross-cutting challenges and needs, the majority (59 per cent) were in the area institutional arrangements. The challenges and needs reported in relation to support needed and received were more evenly spread across the different areas.

Figure 6

Breakdown of areas in which challenges and needs were identified by developing country Parties, by theme



Note: The total percentages were calculated using exact (not rounded) values and may therefore differ from the total percentages calculated with the rounded area-level percentages provided in the figure.

B. Preparing national greenhouse gas inventories

17. With regard to preparing national GHG inventories, most of the challenges and needs reported related to the area data and information (49 per cent), followed by the areas methodology and tools (33 per cent) and institutional arrangements (18 per cent). The three most frequently reported categories of issues were availability of quality data (22 per cent), data-collection process (18 per cent) and technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training (13 per cent). Table 1 summarizes by category the identified issues in preparing national GHG inventories.

Table 1

Categories of identified issues in preparing national greenhouse gas inventories

Area and category of issues (lack thereof or insufficient)	Percentage of total reported issues under theme ^a
Data and information	49
Availability of quality data	22
Data-collection process (including establishment of a database, data-sharing system and web-based knowledge management platform)	18
Data management process (including documentation, archiving, QA/QC protocols and uncertainty management procedures)	8
Accessibility of data (owing to confidentiality issues)	1
Methodology and tools	33
Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training	13
Technical backstopping	12
Practical guidance, tools and methods	5
Technical (knowledge) capacity to interpret, analyse and translate data and information gathered using tools and methods, etc., including training	2

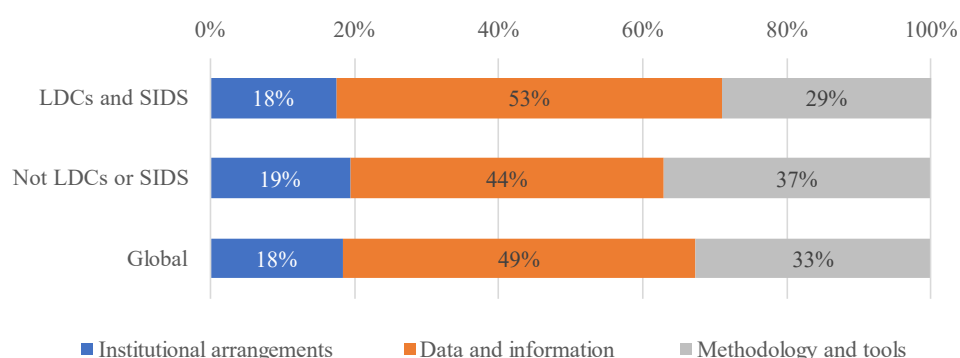
Area and category of issues (lack thereof or insufficient)	Percentage of total reported issues under theme ^a
Technological infrastructure	1
Institutional arrangements	18
Institutional capacity to sustain and improve the MRV and transparency process over time	6
Coordination across sectors and institutions to collect and share data	6
Policy or legal arrangements that mandate the preparation of national reports	3
Leadership (e.g. an entity appointed to undertake and coordinate data collection and data-sharing)	1
Stakeholder awareness, especially in the private sector	1
Definition of roles and responsibilities across the institutions involved	1
Total	100

^a The total and area-level percentages were calculated using exact (not rounded) values and may therefore differ from the total percentages calculated with the rounded category-level percentages provided in the table.

18. The percentage breakdown by area of reported challenges and needs related to preparing national GHG inventories differed by developing country Party group, although there were similar patterns in the order by frequency of the reporting of challenges and needs in those areas. Notably, the LDCs and SIDS reported a 9 per cent higher share of challenges and needs in the area data and information than other developing country Parties that are not LDCs or SIDS. Figure 7 provides a breakdown of the areas in which challenges and needs relating to preparing national GHG inventories were identified by the different groups of developing country Parties and globally. Box 1 provides examples from the categories with the three highest shares of the identified issues associated with preparing national GHG inventories.

Figure 7

Breakdown of areas in which challenges and needs relating to preparing national greenhouse gas inventories were identified, by developing country Party group and globally



Note: The total percentages were calculated using exact (not rounded) values and may therefore differ from the total percentages calculated with the rounded area-level percentages provided in the figure.

Box 1

Examples from categories of issues associated with preparing national greenhouse gas inventories

Availability of quality data: Many developing country Parties reported substantial challenges posed by the poor quality and availability of data (e.g. historical data, disaggregated activity data, data for the complete time series, data consistent with IPCC guidelines), impeding the preparation of their national GHG inventories. They underscored that enhanced data availability and quality would substantially improve their national GHG inventories by allowing them to conduct uncertainty

analyses (including QA/QC procedures), develop country-specific correction and emission factors and use higher-tier IPCC methodologies.

Data-collection process: This process was reported as challenging by many developing country Parties. Some of these Parties identified the need to establish or improve the national system for collecting data and information pertaining to the GHG inventory, to sustain the national GHG inventory team and experts, and to strengthen the capacity of relevant institutions and data providers for data collection and entry. Data collection on a continuous basis through, for example, enhancing coordination, standardizing systems or methods, and conducting surveys and consultations was considered crucial to inventory preparation. Another major challenge reported by Parties was the collection of data in formats compatible with the IPCC guidelines.

Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training: Many developing country Parties expressed the need to enhance the technical capacity of national experts and institutions, particularly with regard to using IPCC guidelines, methodologies, tools and software and transitioning to higher-tier IPCC methodologies; conducting uncertainty assessments; and implementing QA/QC procedures. Parties also referred to the need for continued capacity-building with a view to keeping abreast with and applying best practices, new methodologies and latest technologies for GHG inventory preparation. A few Parties also mentioned the need for training on specific topics, for example remote sensing for land-use change monitoring.

C. Reporting on mitigation actions

19. With regard to reporting on mitigation actions, more than half of the challenges and needs reported related to the area methodology and tools (54 per cent), followed by the areas data and information (24 per cent) and institutional arrangements (22 per cent). In particular, challenges due to lack of practical guidance, tools and methods accounted for the largest share (20 per cent) of total reported issues under the theme, followed by challenges pertaining to lack of technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training (19 per cent) and challenges with the data-collection process (11 per cent). Table 2 summarizes by category the identified issues in reporting on mitigation actions.

Table 2

Categories of identified issues in reporting on mitigation actions

<i>Area and category of issues (lack thereof or insufficient)</i>	<i>Percentage of total reported issues under theme^a</i>
Methodology and tools	54
Practical guidance, tools and methods	20
Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training	19
Technical backstopping	8
Technical (knowledge) capacity to interpret, analyse and translate data and information gathered using tools and methods, etc., including training	6
Technological infrastructure	1
Data and information	24
Data-collection process (including establishment of a database, data-sharing system and web-based knowledge management platform)	11
Availability of quality data	9
Data management process (including documentation, archiving, QA/QC protocols and uncertainty management procedures)	4
Accessibility of data (owing to confidentiality issues)	0.4
Institutional arrangements	22
Institutional capacity to sustain and improve the MRV and transparency process over time	9

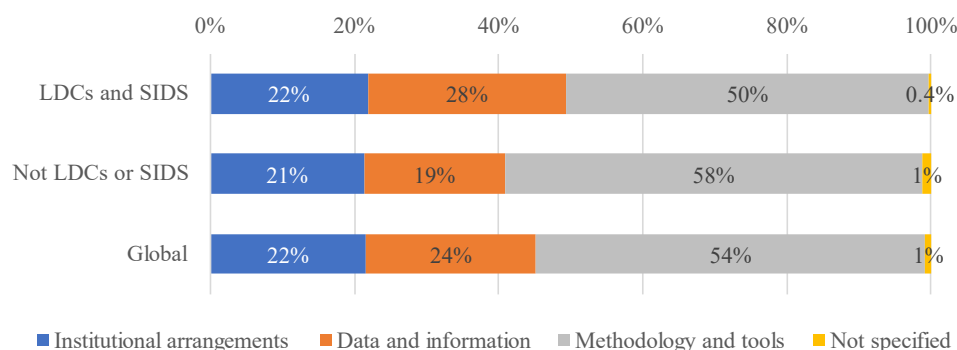
<i>Area and category of issues (lack thereof or insufficient)</i>	<i>Percentage of total reported issues under theme^a</i>
Coordination across sectors and institutions to collect and share data	5
Stakeholder awareness, especially in the private sector	3
Policy or legal arrangements that mandate the preparation of national reports	2
Definition of roles and responsibilities across the institutions involved	2
Leadership (e.g. an entity appointed to undertake and coordinate data collection and data-sharing)	1
Not specified	1
Total	100

^a The total and area-level percentages were calculated using exact (not rounded) values and may therefore differ from the total percentages calculated with the rounded category-level percentages provided in the table.

20. The percentage breakdown by area of reported challenges and needs related to reporting on mitigation actions differed by developing country Party group, although there were similar patterns in the order by frequency of the reporting of challenges and needs in those areas. The LDCs and SIDS reported a 9 per cent higher share of challenges and needs in the area data and information than other developing country Parties that are not LDCs or SIDS. Figure 8 provides a breakdown of the areas in which challenges and needs relating to reporting on mitigation actions were identified by the different groups of developing country Parties and globally. Box 2 provides examples from the categories with the three highest shares of the identified issues associated with reporting on mitigation actions.

Figure 8

Breakdown of areas in which challenges and needs relating to reporting on mitigation actions were identified, by developing country Party group and globally



Note: The total percentages were calculated using exact (not rounded) values and may therefore differ from the total percentages calculated with the rounded area-level percentages provided in the figure.

Box 2

Examples from categories of issues associated with reporting on mitigation actions

Practical guidance, tools and methods: Many developing country Parties highlighted the need to develop and apply guidance, tools and methods for assessing progress in implementing mitigation policies and actions and for estimating and reporting the associated emission reductions. More specifically, needs identified in this area include formulating or improving baselines; developing mitigation scenarios on the basis of policies and measures; conducting and analysing the results of emission reduction and co-benefit studies; assessing the socioeconomic and environmental impacts of mitigation actions; establishing indicators to facilitate the monitoring and reporting of progress, including progress in achieving the mitigation components of NDCs; and developing appropriate frameworks for tracking projects related to international market mechanisms.

Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training: Many developing country Parties reported technical capacity-building and training needs of national and sectoral experts in the use of tools and models for analysing mitigation measures, for example for identifying, assessing and prioritizing (including by conducting cost–benefit analysis) mitigation measures by sector and/or by type of gas; for assessing and quantifying the impacts of mitigation measures, including the establishment of baseline emission levels; for tracking the progress of implementation and assessing (ex post and ex ante) the outcomes of mitigation policies and measures, including those that are NDC targets; and for enhancing capacity to develop long-term mitigation projections and scenarios.

Data-collection process: Some developing country Parties do not have a centralized system for collecting mitigation-related data and therefore pointed out the need for mitigation databases for collating information on the implementation of mitigation actions by sector and for tracking progress in implementing and achieving NDCs. Some Parties expressed the need to strengthen their existing monitoring systems and information platforms to track progress towards implementing mitigation measures, such as by expanding the domestic MRV system to include all mitigation actions and enhancing national capacity to collect and report related information in accordance with the relevant guidelines. One Party mentioned that data-collection processes should be significantly strengthened to ensure that comprehensive, high-quality data are available for undertaking the detailed technical analysis required to define scenarios for a low-carbon development pathway.

D. Reporting on climate change impacts and adaptation

21. With regard to reporting on climate change impacts and adaptation, most challenges and needs reported related to the area methodology and tools (69 per cent), followed by the areas data and information (18 per cent) and institutional arrangements (13 per cent). In particular, the need for technical backstopping, accounted for the largest share (26 per cent) of total reported issues under the theme, followed by the needs for practical guidance, tools and methods (16 per cent) and technological infrastructure (15 per cent). Table 3 summarizes by category the identified issues in reporting on climate change impacts and adaptation.

Table 3

Categories of identified issues in reporting on climate change impacts and adaptation

<i>Area and category of issues (lack thereof or insufficient)</i>	<i>Percentage of total reported issues under theme^e</i>
Methodology and tools	69
Technical backstopping	26
Practical guidance, tools and methods	16
Technological infrastructure	15
Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training	9
Technical (knowledge) capacity to interpret, analyse and translate data and information gathered using tools and methods, etc., including training	3
Data and information	18
Data-collection process (including establishment of a database, data-sharing system and web-based knowledge management platform)	8
Availability of quality data	7
Data management process (including documentation, archiving, QA/QC protocols and uncertainty management procedures)	2
Institutional arrangements	13
Institutional capacity to sustain and improve the MRV and transparency process over time	4

<i>Area and category of issues (lack thereof or insufficient)</i>	<i>Percentage of total reported issues under theme^a</i>
Coordination across sectors and institutions to collect and share data	4
Stakeholder awareness, especially in the private sector	2
Leadership (e.g. an entity appointed to undertake and coordinate data collection and data-sharing)	1
Policy or legal arrangements that mandate the preparation of national reports	1
Definition of roles and responsibilities across the institutions involved	1
Not specified	1
Total	100

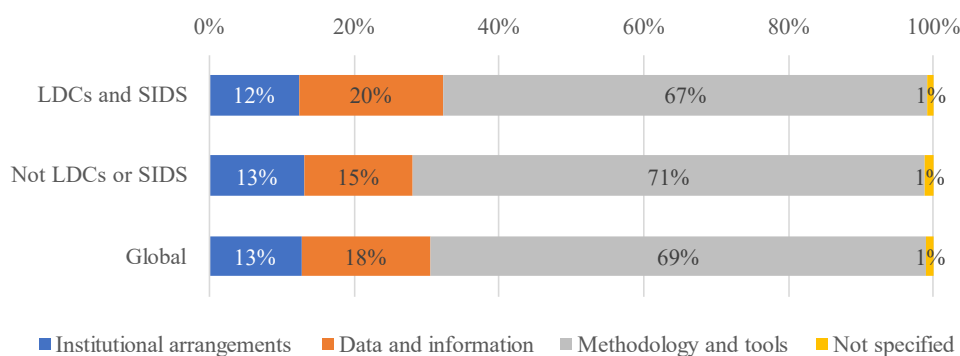
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^a The total and area-level percentages were calculated using exact (not rounded) values and may therefore differ from the total percentages calculated with the rounded category-level percentages provided in the table.

22. The percentage breakdown by area of reported challenges and needs related to reporting on climate change impacts and adaptation differed by developing country Party group, although there were similar patterns in the order by frequency of the reporting of challenges and needs in those areas. Challenges and needs associated with the area methodology and tools constituted the largest share of challenges and needs reported. Figure 9 provides a breakdown of the areas in which challenges and needs relating to reporting on climate change impacts and adaptation were identified by the different groups of developing country Parties and globally. Box 3 provides examples from the categories with the three highest shares of the identified issues associated with reporting on climate change impacts and adaptation.

Figure 9

Breakdown of areas in which challenges and needs relating to reporting on climate change impacts and adaptation were identified, by developing country Party group and globally



Note: The total percentages were calculated using exact (not rounded) values and may therefore differ from the total percentages calculated with the rounded area-level percentages provided in the figure.

Box 3

Examples from categories of issues associated with reporting on climate change impacts and adaptation

Technical backstopping: Many developing country Parties emphasized the need to enhance climate research that enables tailored, scaled-down climate modelling specific to the national and local contexts. The need to better understand the multifaceted impacts, including socioeconomic consequences, of climate change across sectors (including but not limited to agriculture, biodiversity, energy, fisheries, infrastructure, public health, human settlements, coastal areas and zones, and water) was identified. Improvement in vulnerability and risk assessment and management was also considered as essential. Some Parties pointed out the inadequacy of national funding and resource allocation dedicated to researching

climate change impacts and adaptation strategies. They noted that establishing a sustainable financing strategy for research activities is central to fostering sustainable development and enhancing climate resilience. A few Parties emphasized the need to enhance the research capacity of relevant stakeholders, such as governments, research institutions and local communities, and to foster cooperation among them.

Practical guidance, tools and methods: Many developing country Parties reported a lack of methodologies for consistently monitoring climate change impacts and assessing adaptation measures. This lack is particularly noticeable in national and local contexts and specific sectors, including but not limited to agriculture, coastal management, energy, forestry, infrastructure, public health, tourism, urban and rural settlements, and water. The needs include (1) tools for consistently collecting, managing and monitoring data in order to update data sets and databases and (2) modelling techniques, for example models for forecasting and tracking climate change impacts, risks and/or vulnerabilities across various sectors. These tools and models could be used alongside methods to design and prioritize adaptation actions. Some Parties emphasized the need to standardize methods (e.g. for performing vulnerability assessments and for defining tracking indicators) employed by national and/or sectoral institutions in order to enhance their consistency. One Party also underscored the need for quantitative and qualitative metrics that would help prioritize adaptation actions and to integrate them into national planning processes.

Technological infrastructure: Many developing country Parties expressed the need to establish, maintain or upgrade technological infrastructure for collecting climate data and monitoring meteorological, atmospheric, oceanographic and terrestrial variables related to climate change. Such infrastructure includes weather forecasting centres, hydrological stations, meteorological stations and climatological observation networks. Parties reported insufficient capacity to adequately represent temporal and spatial variability related to climate change at the national level. Several Parties mentioned a low density of climate observation networks and an uneven spatial distribution of stations at the national level, while others identified outdated meteorological service instruments in need of calibration or renewal. Parties also reported the lack of qualified human resources to operate these networks, as well as of financial and material resources to maintain them. Further, some Parties pointed to the need for automated recording equipment and instruments to generate consistent, reliable and real-time climate data.

E. Reporting on support needed and received

23. With regard to reporting on support needed and received, the challenges and needs reported were evenly spread across the different areas. The distribution was as follows: institutional arrangements (33 per cent), methodology and tools (33 per cent) and data and information (32 per cent). Under these areas, the need for practical guidance, tools and methods accounted for the largest share (23 per cent) of total reported issues under the theme, followed by the necessity to maintain institutional capacity to sustain and improve the MRV and transparency process over time (21 per cent) and challenges with the data-collection process (20 per cent). Table 4 summarizes by category the issues identified in reporting on support needed and received.

Table 4

Categories of identified issues in reporting on support needed and received

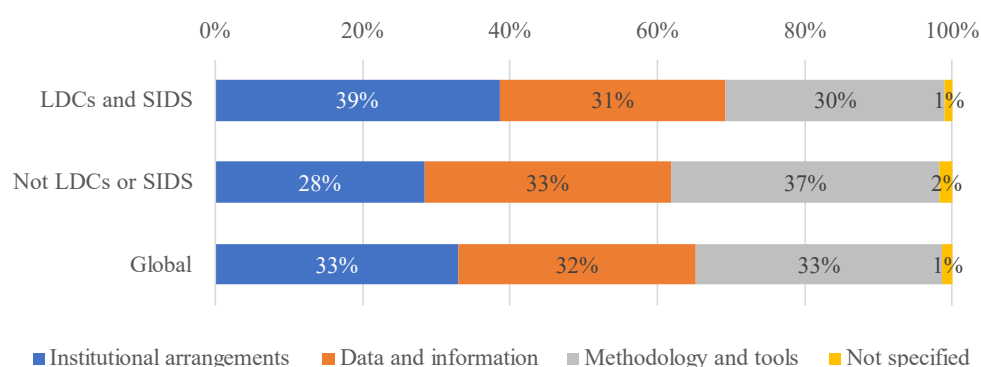
<i>Area and category of issues (lack thereof or insufficient)</i>	<i>Percentage of total reported issues under theme^a</i>
Institutional arrangements	33
Institutional capacity to sustain and improve the MRV and transparency process over time	21
Coordination across sectors and institutions to collect and share data	6

<i>Area and category of issues (lack thereof or insufficient)</i>	<i>Percentage of total reported issues under theme^a</i>
Leadership (e.g. an entity appointed to undertake and coordinate data collection and data-sharing)	4
Policy or legal arrangements that mandate the preparation of national reports	2
Stakeholder awareness, especially in the private sector	1
Methodology and tools	33
Practical guidance, tools and methods	23
Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training	7
Technical backstopping	3
Technical (knowledge) capacity to interpret, analyse and translate data and information gathered using tools and methods, etc., including training	0.5
Data and information	32
Data-collection process (including establishment of a database, data-sharing system and web-based knowledge management platform)	20
Availability of quality data	8
Data management process (including documentation, archiving, QA/QC protocols and uncertainty management procedures)	4
Accessibility of data (owing to confidentiality issues)	1
Not specified	1
Total	100

^a The total and area-level percentages were calculated using exact (not rounded) values and may therefore differ from the total percentages calculated with the rounded category-level percentages provided in the table.

24. The percentage breakdown by area of reported challenges and needs related to reporting on support needed and received differed by developing country Party group, although there were similar patterns in the order by frequency of the reporting of challenges and needs in those areas. The LDCs and SIDS reported an 11 per cent higher share of challenges and needs in the area institutional arrangements than other developing country Parties that are not LDCs or SIDS. Figure 10 provides a breakdown of the areas in which challenges and needs relating to reporting on support needed and received were identified by the different groups of developing country Parties and globally. Box 4 provides examples from the categories with the three highest shares of the identified issues associated with reporting on support needed and received.

Figure 10
Breakdown of areas in which challenges and needs relating to reporting on support needed and received were identified, by developing country Party group and globally



Note: The total percentages were calculated using exact (not rounded) values and may therefore differ from the total percentages calculated with the rounded area-level percentages provided in the figure.

Box 4

Examples from categories of issues associated with reporting on support needed and received

Practical guidance, tools and methods: Many developing country Parties mentioned the lack of guidelines, tools and efficient processes and systems for defining, identifying, tracking and reporting capacity-building, technical and financial support needed and received. Several developing country Parties noted that there is no coherent or common definition of climate finance or approach to classifying, monitoring and reporting on climate finance. In determining the amounts to be reported as climate finance, reporting entities usually rely on their own operational definitions, and differences can affect estimates of overall finance flows. Parties therefore noted the need to adopt methodologies and tools for defining climate finance in the national and international context and to ensure that stakeholders collect data on support needed and received appropriately.

Institutional capacity to sustain and improve the MRV and transparency process over time: Many developing country Parties reported capacity-building needs and challenges related to the application of guidelines and tools and the development and maintenance of systems for defining, identifying, tracking and reporting capacity-building, technical and financial support needed and received on a long-term basis. Some Parties emphasized the need to strengthen capacity-building efforts and secure funding for relevant agencies, as well as to promote collaboration among relevant stakeholders. One Party suggested that access to climate finance could be enhanced through transparent, structured and robust monitoring, reporting and verification of technical and financial support received.

Data-collection process: Many developing country Parties found it challenging to collect data and information on support needed and received owing to the lack of a standardized data-collection process and to the relevant data being dispersed across entities such as ministries, private sector organizations, research and academic institutions, and civil society organizations. Some Parties mentioned the need to develop a centralized data-collection platform to facilitate data exchange among ministries and other relevant actors, including information on finance flows from domestic and international sources.

F. Cross-cutting issues

25. With respect to cross-cutting issues, most challenges and needs reported related to the area institutional arrangements (59 per cent), followed by the areas data and information (23 per cent) and methodology and tools (17 per cent). In particular, challenges and needs pertaining to enhancing institutional capacity to sustain and improve the MRV and transparency process over time were most frequently reported (22 per cent), followed by those pertaining to enhancing the data-collection process (13 per cent) and enhancing coordination across sectors and institutions to collect and share data (12 per cent). Table 5 summarizes the identified cross-cutting issues by category.

Table 5
Categories of identified cross-cutting issues

<i>Area and category of issues (lack thereof or insufficient)</i>	<i>Percentage of total reported issues under theme^a</i>
Institutional arrangements	59
Institutional capacity to sustain and improve the MRV and transparency process over time	22
Coordination across sectors and institutions to collect and share data	12
Policy or legal arrangements that mandate the preparation of national reports	9
Leadership (e.g. an entity appointed to undertake and coordinate data collection and data-sharing)	7

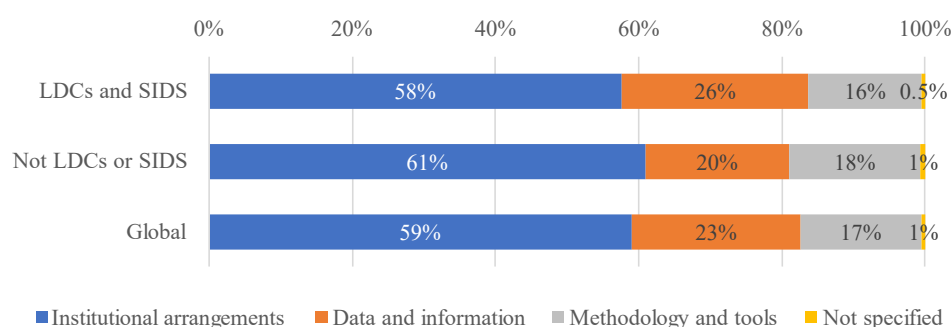
<i>Area and category of issues (lack thereof or insufficient)</i>	<i>Percentage of total reported issues under theme^a</i>
Stakeholder awareness, especially in the private sector	5
Definition of roles and responsibilities across the institutions involved	4
Data and information	23
Data-collection process (including establishment of a database, data-sharing system and web-based knowledge management platform)	13
Data management process (including documentation, archiving, QA/QC protocols and uncertainty management procedures)	7
Availability of quality data	3
Accessibility of data (owing to confidentiality issues)	1
Methodology and tools	17
Technical backstopping	5
Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training	4
Practical guidance, tools and methods	4
Technical (knowledge) capacity to interpret, analyse and translate data and information gathered using tools and methods, including training	2
Technological infrastructure	1
Not specified	1
Total	100

^a The total and area-level percentages were calculated using exact (not rounded) values and may therefore differ from the total percentages calculated with the rounded category-level percentages provided in the table.

26. The percentage breakdown by area of cross-cutting challenges and needs differed by developing country Party group, although there were similar patterns in the order by frequency of the reporting of challenges and needs in those areas. The LDCs and SIDS reported a 6 per cent higher share of challenges and needs in the area data and information than other developing country Parties that are not LDCs or SIDS. Figure 11 provides a breakdown of the areas in which challenges and needs relating to cross-cutting issues were identified by the different groups of developing country Parties and globally. Box 5 provides examples from the categories with the three highest shares of the identified cross-cutting issues.

Figure 11

Breakdown of areas in which challenges and needs relating to cross-cutting issues were identified, by developing country Party group and globally



Note: The total percentages were calculated using exact (not rounded) values and may therefore differ from the total percentages calculated with the rounded area-level percentages provided in the figure.

Box 5
Examples from categories of cross-cutting issues
Institutional capacity to sustain and improve the MRV and transparency process over time: Many developing country Parties reported challenges in

meeting reporting commitments due to limited capacity and insufficient technical and financial resources. Some countries indicated that they prepare national reports on an ad hoc basis and have not established a permanent process or team for report preparation. Some Parties emphasized the need for establishing a permanent framework for reporting that would enable them to produce timely reports, improve their reporting over time and comply with the enhanced reporting requirements under the ETF. Related needs include the creation or retention of expert teams, the continued provision of capacity-building and training for teams, and the development of a plan to counter high staff turnover and thus ensure technical capacity is sustained. In addition, addressing deficiencies in the technical capacity of line ministries and relevant stakeholders was considered crucial to enabling their active participation in national report preparation.

Data-collection process: Many developing country Parties expressed the need to strengthen national capacity in and enhance the processes for collecting data, encompassing the data necessary for preparing national GHG inventories and for reporting on mitigation actions, climate change impacts and adaptation, and support needed and received. Parties also identified the need to produce templates, standards and rules for data collection; digitize information records; address inadequacies in monitoring systems; and develop mechanisms allowing systematic, regular data collection and sharing by data providers, including government departments and private sector organizations.

Coordination across sectors and institutions to collect and share data: Many developing country Parties identified the need for coordination mechanisms for data-sharing. Stakeholders include government departments, private sector organizations and other data providers, as well as various other actors involved in preparing national GHG inventories and reporting on mitigation, adaptation and support needed and received. Some Parties expressed the view that a lack of coordination impacts the sustainable, timely preparation and submission of NCs and BURs, and that formalizing institutional arrangements for data provision will help enhance data quality and avoid delays in data submission. Some developing country Parties stressed the importance of conveying the benefits of reporting to stakeholders, thereby incentivizing their engagement and strengthening their commitment. Some Parties identified the need to improve institutional coordination structures at the ministerial level (horizontal coordination) and between national and subnational authorities (vertical coordination).

G. Emerging needs in relation to the enhanced transparency framework

27. The 2023 CGE survey included a section aimed at gauging the emerging needs of developing country Parties in relation to the ETF. Respondents were asked to indicate the following:

(a) The extent to which they are familiar with the MPGs: 21 respondents answered this question, with 67 per cent indicating that they are familiar with the MPGs but need more guidance and detailed information to identify needs in terms of implementing the ETF, 19 per cent indicating that they have limited knowledge of the MPGs and 14 per cent indicating that they are knowledgeable enough to identify needs and start planning for ETF implementation;

(b) The status of planning for reporting under the ETF: 73.0 per cent of 22 respondents indicated that their country has a lead entity that will coordinate preparation of BTRs with a permanent mandate, 13.5 per cent indicated that there is a lead entity with an ad hoc mandate, and 13.5 per cent indicated that their country does not have a lead entity for BTR preparation;

(c) Steps taken thus far in preparing the first BTR, which is due on or before 31 December 2024. The 19 respondents who described such steps mentioned the following:

(i) Regarding the involvement of external consultants or institutions in BTR preparation, 20 per cent of respondents indicated that they were involved to the full

extent, 25 per cent to a limited extent and 25 per cent not at all, while 30 per cent of respondents indicated that they have not yet decided on what the extent of their involvement will be;

(ii) Regarding a plan to allocate a domestic budget for compiling and submitting BTRs on a regular basis, including for maintaining a team of national experts, 4 per cent of respondents indicated that their country has a plan that is fully operational, 74 per cent indicated that a plan is under development and 22 per cent indicated that a plan has not yet been put in place;

(iii) Regarding a mechanism for obtaining funds from external sources to support the compilation and submission of BTRs on a regular basis, 22 per cent of respondents indicated that their country has a mechanism that is fully operational, 17 per cent indicated that a mechanism has been established but is not fully operational, 39 per cent indicated that a mechanism is under development and 22 per cent indicated that a mechanism has not yet been put in place;

(iv) Regarding report preparation, a total of 17 respondents indicated that their country is preparing its first BTR: 8 countries are at the conceptual stage, 6 countries have sent a proposal for funding preparation of the report to the Global Environment Facility, 2 countries are setting up a coordination body or expert groups, and 1 country is collecting data for or drafting components of the report;

(v) Regarding the planned submission date of the BTR, of the 23 respondents, 1 country indicated that it is planning to submit its first BTR in 2023, 14 countries plan to submit at the latest by 31 December 2024 and 8 countries plan to submit in 2025 or later (these latter countries are all LDCs and/or SIDS);

(d) The top three areas of capacity-building that can benefit their country in facilitating the implementation of the ETF. The most frequently selected capacity-building area was “Understanding of the MPGs, common tabular formats and common reporting tables for the ETF, including the flexibility provisions” (23 per cent), followed by “Methods and/or practical guidelines for tracking progress of implementation and achievement of NDCs” (20 per cent) and “Methods and/or practical guidelines for assessing climate change impacts and adaptation” (14 per cent).

H. Summary

28. Table 6 summarizes the two most frequently reported categories of issues identified in each area under each theme, as shown in tables 1–5. Areas and categories within each theme are listed by percentage in decreasing order.

Table 6

Two most frequently reported categories of issues identified by developing country Parties in each area under each theme

<i>Theme</i>	<i>Issues by area and category (lack thereof or insufficient)</i>
Preparing national GHG inventories	Data and information
	Availability of quality data
	Data-collection process (including establishment of a database, data-sharing system and web-based knowledge management platform)
	Methodology and tools
	Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training
	Technical backstopping
	Institutional arrangements
	Institutional capacity to sustain and improve the MRV and transparency process over time
	Coordination across sectors and institutions to collect and share data

<i>Theme</i>	<i>Issues by area and category (lack thereof or insufficient)</i>
Reporting on mitigation actions	<p>Methodology and tools</p> <p>Practical guidance, tools and methods</p> <p>Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training</p> <p>Data and information</p> <p>Data-collection process (including establishment of a database, data-sharing system and web-based knowledge management platform)</p> <p>Availability of quality data</p> <p>Institutional arrangements</p> <p>Institutional capacity to sustain and improve the MRV and transparency process over time</p> <p>Coordination across sectors and institutions to collect and share data</p>
Reporting on climate change impacts and adaptation	<p>Methodology and tools</p> <p>Technical backstopping</p> <p>Practical guidance, tools and methods</p> <p>Data and information</p> <p>Data-collection process (including establishment of a database, data-sharing system and web-based knowledge management platform)</p> <p>Availability of quality data</p> <p>Institutional arrangements</p> <p>Institutional capacity to sustain and improve the MRV and transparency process over time</p> <p>Coordination across sectors and institutions to collect and share data</p>
Reporting on support needed and received	<p>Institutional arrangements</p> <p>Institutional capacity to sustain and improve the MRV and transparency process over time</p> <p>Coordination across sectors and institutions to collect and share data</p> <p>Methodology and tools</p> <p>Practical guidance, tools and methods</p> <p>Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training</p> <p>Data and information</p> <p>Data-collection process (including establishment of a database, data-sharing system and web-based knowledge management platform)</p> <p>Availability of quality data</p>
Cross-cutting issues	<p>Institutional arrangements</p> <p>Institutional capacity to sustain and improve the MRV and transparency process over time</p> <p>Coordination across sectors and institutions to collect and share data</p> <p>Data and information</p> <p>Data-collection process (including establishment of a database, data-sharing system and web-based knowledge management platform)</p> <p>Data management process (including documentation, archiving, QA/QC protocols and uncertainty management procedures)</p> <p>Methodology and tools</p> <p>Technical backstopping</p> <p>Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training</p>