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Convention
Report of the Consultative Group of Experts

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 and preparation of 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.

Please recycle

Abbreviations and acronyms

BTR	biennial transparency report
BUR	biennial update report
CGE	Consultative Group of Experts
ETF	enhanced transparency framework
GHG	greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
LDC	least developed country
MRV	measurement, reporting and verification
NC	national communication
NDC	nationally determined contribution
QA/QC	quality assurance/quality control
SIDS	small island developing State(s)

I. Introduction

A. Mandate

1.   The Conference of the Parties, at its twenty-sixth session, adopted the revised terms of reference of the CGE[1] and reaffirmed that, in fulfilling its mandate to support implementation of the ETF under Article 13 of the Paris Agreement, 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 modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement;[3]

(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 review of BTRs.[4]

B. Scope of the paper

3.   In response to the mandate above and as part of its workplan for 2022,[5] the CGE agreed to continue conducting an assessment of the existing and emerging problems, constraints and 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 2021.[6]

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

(a)   The 12 NCs and 30 BURs submitted between 1 July 2021 and 30 June 2022;

(b)   The 11 summary reports on the technical analysis of BURs published between 1 July 2021 and 30 June 2022.

5.   This paper draws on the most recent 151 NCs and 79 BURs that had been submitted by 152 developing country Parties as at 30 June 2022 and the 38 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 fourth BURs; and from first to third summary reports on the technical analysis of BURs. Figure 1 provides an overview of the reports compiled and synthesized, by reporting cycle and region.

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[1] Decision 14/CP.26, annex.
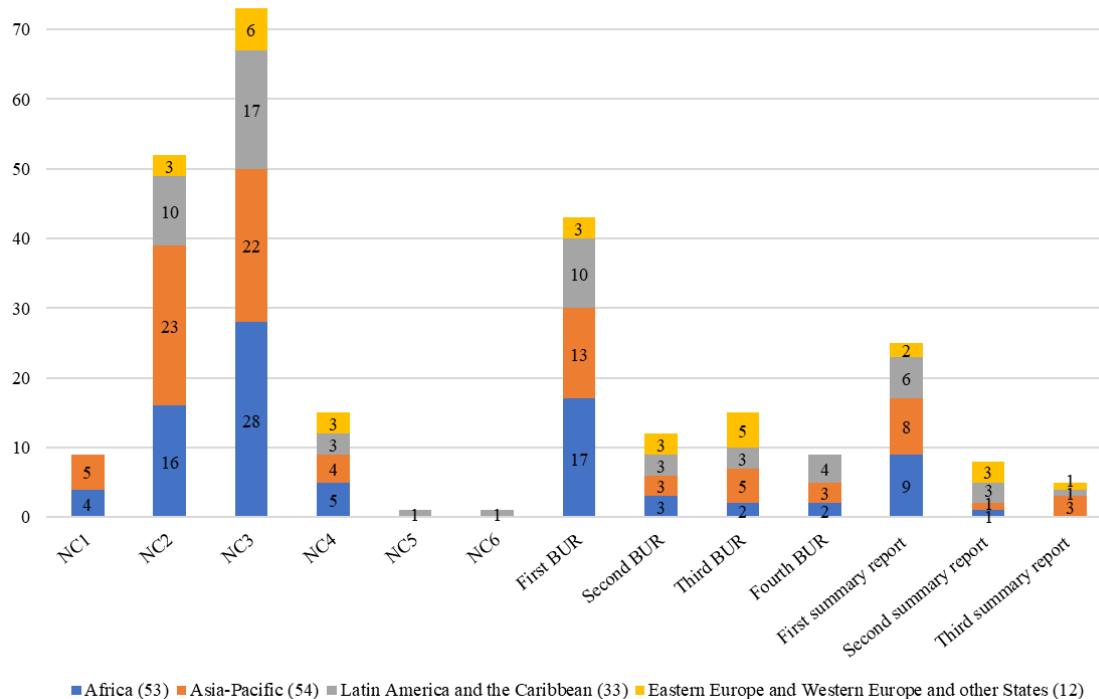[2] Decision 14/CP.26, annex, para. 3.
[3] Decision 18/CMA.1, annex.
[4] Decision 14/CP.26, annex, para. 4(b).
[5] Available at https://unfccc.int/CGE.
[6] FCCC/TP/2021/2.

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 2021 and 30 June 2022, the CGE compiled and synthesized information on problems and constraints faced and lessons learned by developing country Parties in the process and preparation of 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)　　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 paragraph 8(a)(i–iv) 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:
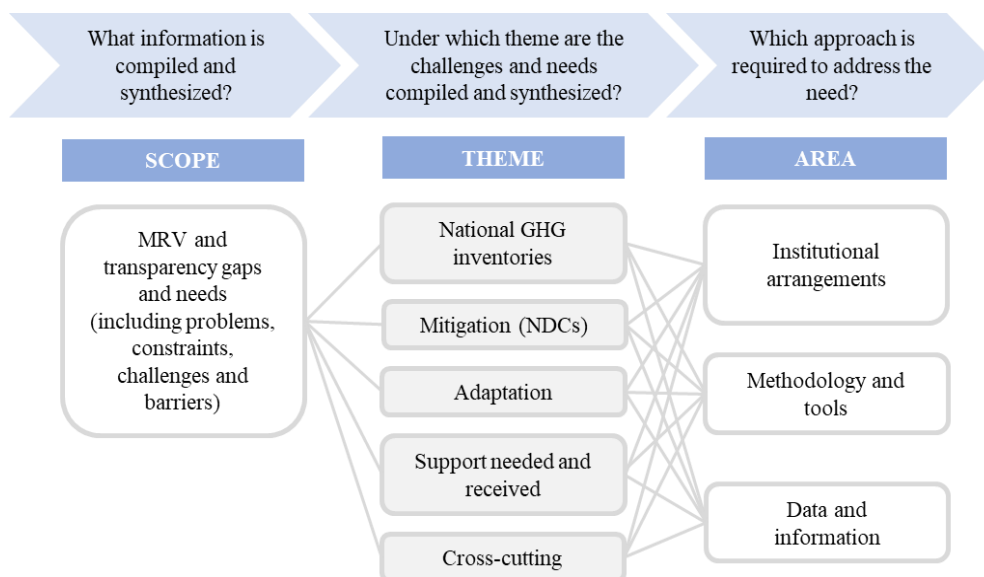
(i)　Institutional arrangements, which refers to national systems, arrangements and processes to support implementation of the existing MRV arrangements, such as the engagement of all relevant stakeholders. Issues categorized under this area include establishing and formalizing a process or working mechanism 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 (for confidentiality reasons) to data collection and 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 (referred to as a group in the figures below as "global") were grouped as follows:

(a)   By geographical region: Africa, Asia-Pacific, Latin America and the Caribbean, and Eastern Europe and Western Europe and other States;

(b)   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.

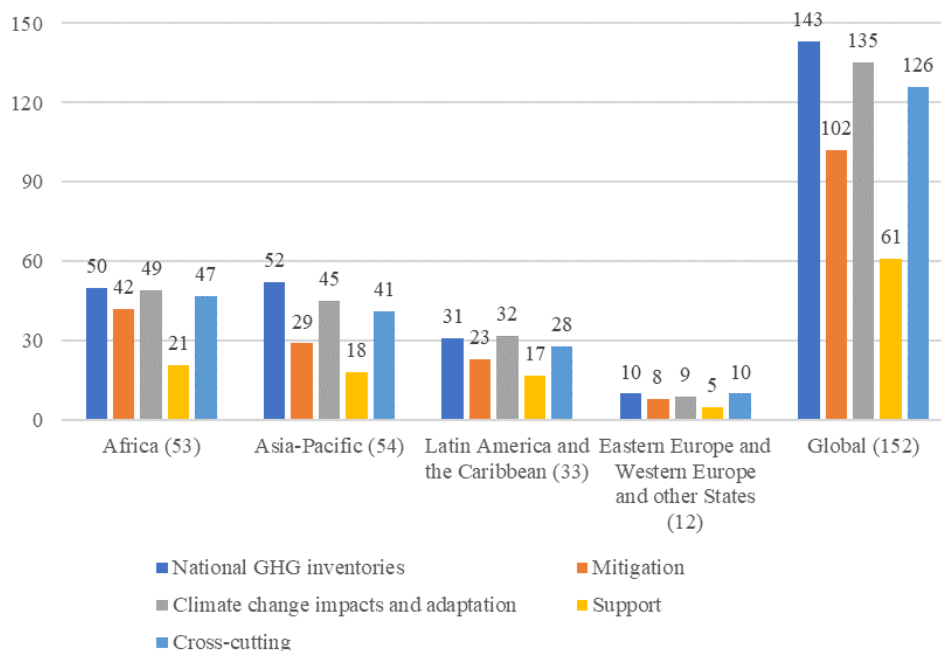## III.   Results of the compilation and synthesis

A.   Challenges and needs reported by developing country Parties

11.   This chapter provides an overview of the challenges and needs reported by developing country Parties, broken down by theme and area and with reference to the regions and developing country Party groups referred to in paragraph 10 above.

12.   During this round of compilation and synthesis it was observed that the granularity of the information on problems and constraints faced and lessons learned, including capacity-building needs and challenges, reported by developing country Parties in their NCs and BURs has increased compared with the previous round. More details on this, with issues broken down by theme and category, are provided in the tables and graphs below.

13.   Figure 3 shows the number of developing country Parties, both regionally and globally, that reported one or more challenges and needs under each theme. At the global level, challenges and needs related to national GHG inventories were reported by the highest number of Parties (143, or 94 per cent of the Parties whose reports were compiled), followed by reporting on climate change impacts and adaptation (135 Parties, or 89 per cent) and cross-cutting issues (126 Parties, or 83 per cent). Across all regions, challenges and needs associated with reporting on climate change impacts and adaptation, national GHG inventories and cross-cutting issues featured more strongly than support and mitigation themes.
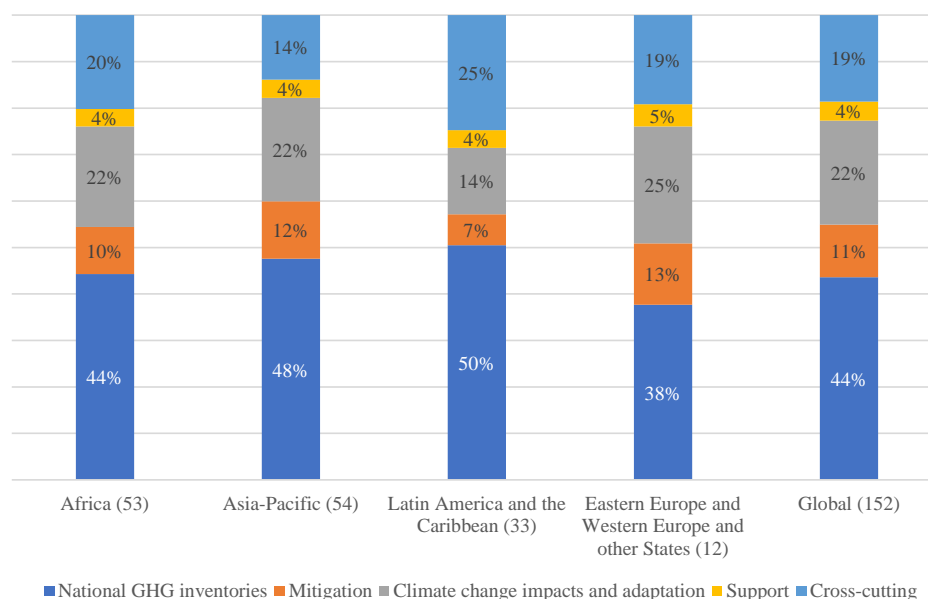
Figure 3
Number of developing country Parties that reported one or more challenges and needs under each theme, by region and globally

Note: The figures in parentheses specify the number of developing country Parties whose reports were compiled and synthesized, by region and globally.
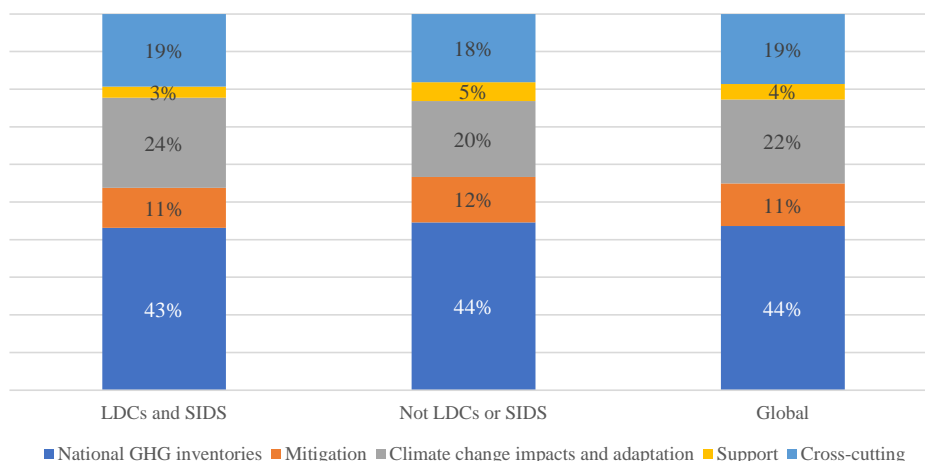
14.   Figure 4 shows the thematic breakdown of the challenges and needs reported by developing country Parties, by region and globally. Although there were similar patterns in the order by frequency of the reporting of challenges and needs under the different themes, the exact share of each theme as a percentage of the total challenges and needs identified varied across the regions. For example, countries in Latin America and the Caribbean reported a higher percentage of challenges and needs related to national GHG inventories (50 per cent), and cross-cutting issues (25 per cent), while other regions reported more challenges and needs pertaining to climate change impacts and adaptation.

Figure 4
Thematic breakdown of challenges and needs reported, by region and globally
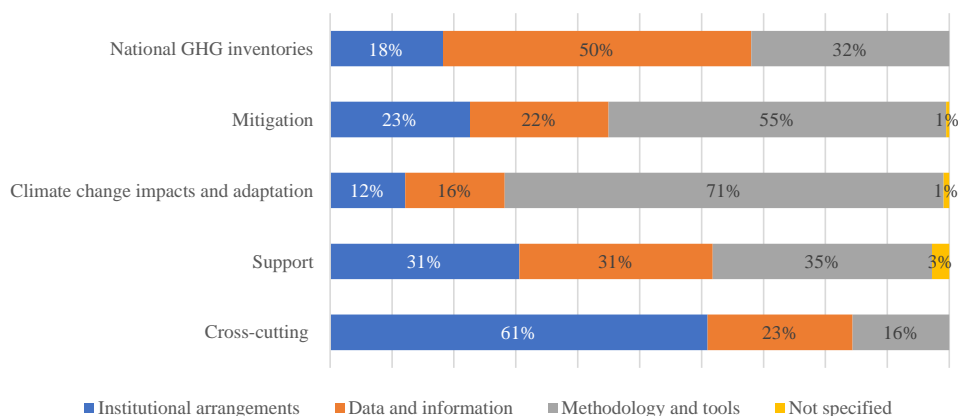
15.   Figure 5 shows the thematic breakdown of the challenges and needs reported by developing country Party group. The thematic breakdown of challenges and needs reported did not differ significantly between the LDCs and SIDS and other developing country Parties that are not LDCs or SIDS.

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

16.   The breakdown of areas in which challenges and needs were identified also differed by theme, as shown in figure 6. Many challenges and needs reported in the area of methodology and tools related to reporting on climate change impacts and adaptation (71 per cent) and mitigation actions (55 per cent); in the area of institutional arrangements to cross-cutting issues (61 per cent); and in the area of data and information to national GHG inventories (50 per cent). 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

B.   Preparing national greenhouse gas inventories

17.   With regard to preparing national GHG inventories, most of the challenges and needs reported were in the area of data and information, followed by the area of methodology and tools. In terms of data and information, 23 per cent of the challenges and needs reported related to availability of quality data and 18 per cent to the data collection process, while in the area of methodology and tools, 12 per cent of the challenges and needs pertained to issues related to technical capacity and 12 per cent to technical backstopping. Table 1 summarizes by category the identified issues in preparing national GHG inventories.
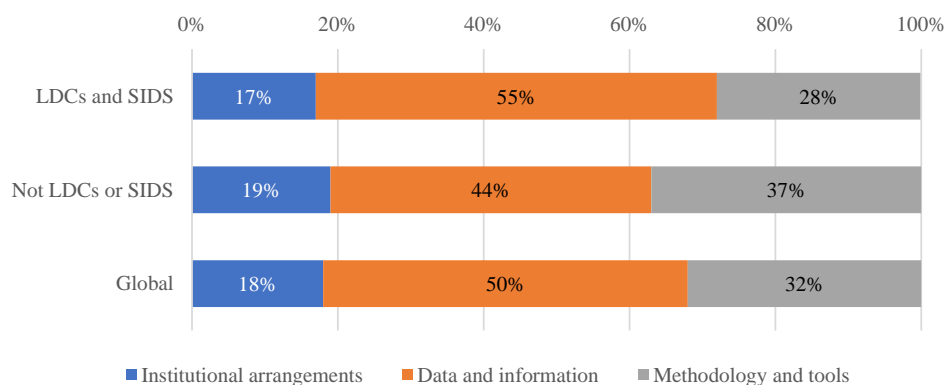
Table 1
Categories of identified issues in preparing national greenhouse gas inventories

Area and category of issues (lack thereof or insufficient)	Percentage of total reported issues under theme
Data and information	**50**
Availability of quality data	23
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)	7
Accessibility of data for confidentiality reasons	2
Methodology and tools	**32**
Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training	12
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
Technological infrastructure	1
Institutional arrangements	**18**
Coordination across sectors and institutions to collect and share data	6
Institutional capacity to sustain and improve the MRV and transparency process over time	5
Policy or legal arrangements that mandate the preparation of national reports	2
Definition of roles and responsibilities across the institutions involved	2
Stakeholder awareness, especially in the private sector	2
Leadership (e.g. an entity appointed to undertake and coordinate data collection and -sharing)	1
Total	**100**

18.   Figure 7 provides a breakdown of the areas in which challenges and needs related to preparing national GHG inventories were identified by the different groups of developing country Parties. The percentage breakdown by area of reported challenges and needs related to preparing national GHG inventories differed by developing country Party group. The LDCs and SIDS reported a higher share of issues related to data and information but a lower share of challenges and needs in the area of methodology and tools than other developing country Parties that are not LDCs or SIDS. 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 related to preparing national greenhouse gas inventories were identified, by developing country Party group and globally

Box 1
Examples from categories of issues associated with preparing national greenhouse gas inventories

Availability of quality data: many developing country Parties expressed that lack of quality data, including disaggregated activity data, historical data, high-quality data and complete time series, impeded the production of national GHG inventories, with several Parties reporting an inability to conduct uncertainty analyses for some categories owing to lack of activity data. In addition, several Parties reported that data and information are collected at the national aggregated level rather than from direct sources, which makes the use of higher-tier methodologies difficult. In some cases, Parties reported that data are collected from different sources and as such are received in a variety of formats that are often not compatible with the IPCC inventory software.

Data collection process: the data collection process was reported as challenging by many developing country Parties. Some stated the need to establish or improve the national system for collecting data and information pertaining to the GHG inventory, also emphasizing the need to strengthen the capacity of institutions to collect data on a continuous basis. Several Parties indicated that, since such data and information are collected in an ad hoc manner, mechanisms should be established for collecting disaggregated data. Other needs reported included conducting surveys to collect activity data and standardizing templates for and approaches to data collection.

Technical (knowledge) capacity to apply guidelines, guidance, tools, methods, including training: many developing country Parties expressed the need to enhance technical capacity through training national experts to understand and apply IPCC guidelines and tools, higher-tier methodologies, uncertainty analyses, different emission factors and QA/QC procedures, for example. A few Parties also indicated the need for training on 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 methodology and tools (55 per cent), followed by institutional arrangements (23 per cent) and data and information (22 per cent). In particular, the challenges due to lack of practical guidance, tools and methods accounted for 23 per cent, followed by issues pertaining to lack of technical capacity to apply guidelines, guidance, tools and methods (17 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

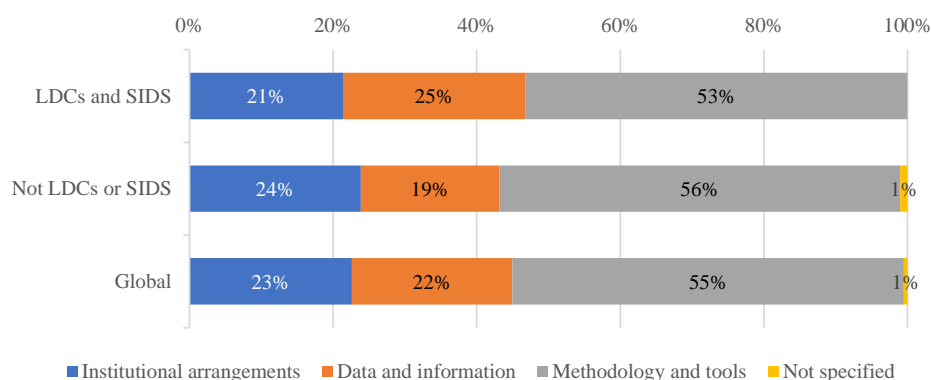| Area and category of issues (lack thereof or insufficient)	Percentage of total reported issues under theme[a]
Methodology and tools	**55**
Practical guidance, tools and methods	23
Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training	17
Technical backstopping	9
Technical (knowledge) capacity to interpret, analyse and translate data and information gathered using tools and methods, etc., including training	6
Technological infrastructure	1
Institutional arrangements	**23**
Institutional capacity to sustain and improve the MRV and transparency process over time	8
Coordination across sectors and institutions to collect and share data	7
Stakeholder awareness, especially in the private sector	3

Area and category of issues (lack thereof or insufficient)	Percentage of total reported issues under theme[a]
Leadership (e.g. an entity appointed to undertake and coordinate data collection and -sharing)	2
Definition of roles and responsibilities across the institutions involved	2
Policy or legal arrangements that mandate the preparation of national reports	2
Data and information	**22**
Data collection process (including establishment of a database, data-sharing system and web-based knowledge management platform)	10
Availability of quality data	8
Data management process (including documentation, archiving, QA/QC protocols and uncertainty management procedures)	4
Not specified	1
Total	**100**

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

20. The percentage breakdown by area of reported challenges and needs related to reporting on mitigation actions differed slightly 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. There is a consistent need to address issues around the use of methodologies and tools for mitigation assessment across the different groups of developing country Parties. Figure 8 provides a breakdown of the areas in which challenges and needs related to reporting on mitigation actions were identified by the different groups of developing country Parties. 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 related 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 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**: Some developing country Parties do not have sufficient guidance, tools or methods for assessing mitigation policies and impacts. For example, some Parties lack the country-specific models and associated assumptions needed to project emissions under different scenarios. Several Parties referred to the lack of guidance and tools for estimating the socioeconomic and environmental impacts of mitigation actions, while a few others expressed the need for tailored, country-specific training materials and methodologies for estimating the impacts of mitigation actions, for example in relation to energy efficiency.
>
> **Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training**: Some developing country Parties reported the need to enhance their national capacity to use tools and methodologies for formulating baselines, developing mitigation scenarios and analysing the effects and costs of mitigation actions. Some Parties highlighted the need for training and technical backstopping to build capacities to utilize simulation and modelling tools for developing baseline and mitigation scenarios and identifying mitigation actions and policies and measures appropriate to the national context.
>
> **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 in order to collect information on the implementation of mitigation actions by sector and track progress in implementing and achieving NDCs. Some Parties expressed the need to strengthen their existing monitoring systems and information platforms so as 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.

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 methodology and tools (71 per cent), followed by data and information (16 per cent) and institutional arrangements (12 per cent). In particular, the need for technical backstopping, including scientific research and studies, accounted for 27 per cent, followed by challenges with technological infrastructure (16 per cent) and the need for more practical guidance, tools and methods (16 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

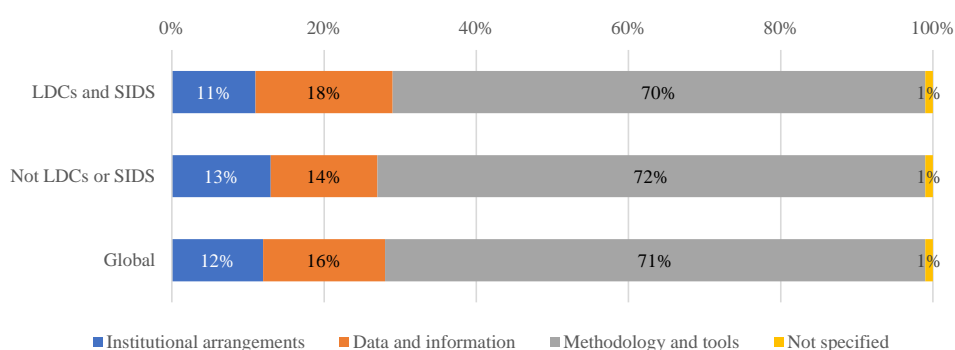| Area and category of issues (lack thereof or insufficient)	Percentage of total reported issues under theme[a]
Methodology and tools	**71**
Technical backstopping	27
Technological infrastructure	16
Practical guidance, tools and methods	16
Technical (knowledge) capacity to apply guidelines, guidance, 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	4
Data and information	**16**
Data collection process (including establishment of a database, data-sharing system and web-based knowledge management platform)	8
Availability of quality data	6
Data management process (including documentation, archiving, QA/QC protocols and uncertainty management procedures)	2

Area and category of issues *(lack thereof or insufficient)*	*Percentage of total* *reported issues* *under theme[a]*
Institutional arrangements	**12**
Coordination across sectors and institutions to collect and share data	4
Institutional capacity to sustain and improve the MRV and transparency process over time	4
Stakeholder awareness, especially in the private sector	2
Leadership (e.g. an entity appointed to undertake and coordinate data collection and -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

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

22. The percentage breakdown by area of challenges and needs related to reporting on climate change impacts and adaptation shows similar patterns in the order by frequency of the reporting of challenges and needs in those areas and across the different groups of developing country Parties. Notably, there is a consistent need to address issues pertaining to the use of methodologies and tools for reporting on climate change impacts and adaptation across all groups of developing country Parties. Figure 9 provides a breakdown of the areas in which challenges and needs related to reporting on climate change impacts and adaptation were identified by the different groups of developing country Parties. 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 related to reporting on climate change impacts and adaptation were identified, by developing country Party group and globally

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Box 3
Examples from categories of issues associated with reporting on climate change impacts and adaptation

Technical backstopping: Many developing country Parties highlighted the need to promote research with a view to better understanding the impacts of climate change in various sectors (e.g. biodiversity, health, water resources and agriculture) and improving impact and vulnerability assessments. Several Parties stated the need to enhance knowledge of specific climate vulnerabilities, impacts and risks at the subnational and national level. A few Parties mentioned the need to increase the involvement of members of research and academic institutions in discussions on climate change issues.

Technological infrastructure: Many developing country Parties reported the need to establish, maintain or improve 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. Several Parties mentioned a low density of climate observation networks and an inhomogeneous spatial distribution of stations at the national level, while others identified outdated meteorological service instruments in need of calibration or renewal.

Practical guidance, tools and methods: Some developing country Parties reported a lack of methodologies for consistently monitoring adaptation measures and assessing issues of vulnerability and adaptation applicable to certain sectors. Parties identified the need for training on identifying appropriate tools for climate risk assessment and carrying out vulnerability and impact assessments on climate change. Several Parties expressed the need to develop climate risk maps or a hazard zone index as diagnostic tools and enhance support for managing adaptation to climate change.

E. Reporting on support needed and received

23.   With regard to reporting on support needed and received, challenges and needs in the area of methodology and tools were reported most frequently (35 per cent), followed by those in the areas of institutional arrangements (31 per cent) and data and information (31 per cent). In particular, challenges due to lack of practical guidance, tools and methods (28 per cent) featured strongly, followed by lack of institutional capacity to sustain and improve the MRV and transparency process over time (22 per cent) and the data collection process (21 per cent). Table 4 summarizes by category the issues identified in reporting on support needed and received.

Table 4
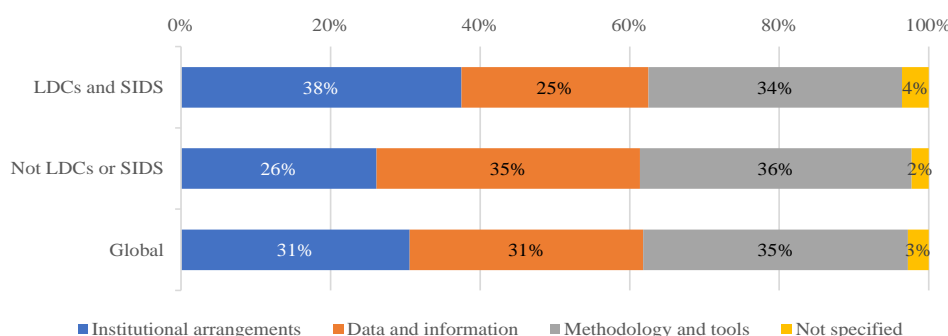**Categories of identified issues in reporting on support needed and received**

Area and category of issues (lack thereof or insufficient)	Percentage of total reported issues under theme[a]
Methodology and tools	**35**
Practical guidance, tools and methods	28
Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training	5
Technical backstopping	1
Technical (knowledge) capacity to interpret, analyse and translate data and information gathered using tools and methods, etc., including training	1
Institutional arrangements	**31**
Institutional capacity to sustain and improve the MRV and transparency process over time	22
Coordination across sectors and institutions to collect and share data	4
Leadership (e.g. an entity appointed to undertake and coordinate data collection and -sharing)	2
Policy or legal arrangements that mandate the preparation of national reports	2
Data and information	**31**
Data collection process (including establishment of a database, data-sharing system and web-based knowledge management platform)	21
Availability of quality data	6
Data management process (including documentation, archiving, QA/QC protocols and uncertainty management procedures)	3
Accessibility of data for confidentiality reasons	1
Not specified	**3**
Total	**100**

[a] The total and area-level percentages were calculated using exact (not rounded) values and may therefore differ from total percentages calculated with the rounded 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. Other developing country Parties that are not LDCs or SIDS reported a higher share of issues related to data and information but a lower share of issues pertaining to institutional arrangements than the LDCs and SIDS. Figure 10 provides a breakdown of the areas in which challenges and needs related to reporting on support needed and received were identified by the different groups of developing country Parties. 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 related 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 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: 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 ensuring that stakeholders collect data on support needed and received appropriately, which would also aid efforts to mobilize climate finance both domestically and internationally. Some Parties expressed the need to enhance national capacities to identify technology development and transfer needs in order to address climate change issues and facilitate reporting on support needed and received in this regard. Parties also noted a lack of knowledge on how to mobilize support needed, both from domestic and from international sources.

Institutional capacity to sustain and improve the MRV and transparency process over time: Several developing country Parties expressed the need to enhance institutional capacity to sustain and improve the MRV and transparency process over time. More specifically, some Parties highlighted the need to establish a pool of experts from different government ministries and the climate finance landscape, noting the need to provide to the experts training on tracking support needed and received and climate finance, including at the project level.

Data collection process: Many developing country Parties found it challenging to collect data and information on support needed and received owing to lack of a standardized data collection process and the relevant data being dispersed across various agencies (such as ministries, private sector organizations, research and academic institutes, and civil society organizations). Some Parties reported gaps in relation to detecting financial, technological and capacity-building needs and the importance of closing them in order to enhance reporting on support needed and received.

F. Cross-cutting issues

25.   With respect to cross-cutting issues, 61 per cent of the challenges and needs reported related to institutional arrangements, followed by data and information (23 per cent) and methodology and tools (16 per cent). In particular, challenges and needs pertaining to the need to enhance institutional capacity to sustain and improve the MRV and transparency process over time were most frequently reported (22 per cent), followed by lack of an adequate data collection process (14 per cent) and the need to enhance coordination across sectors and institutions to collect and share data (13 per cent). Table 5 summarizes the identified cross-cutting issues by category.
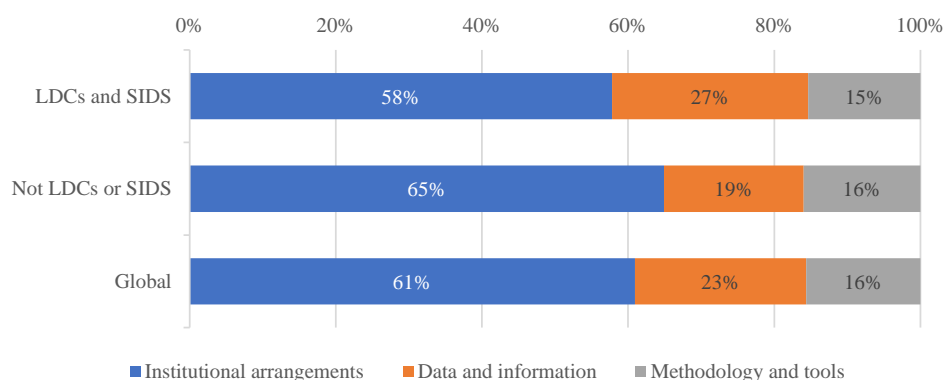
Table 5
Categories of identified cross-cutting issues

Area and category of issues (lack thereof or insufficient)	Percentage of total reported issues under theme[a]
Institutional arrangements	**61**
Institutional capacity to sustain and improve the MRV and transparency process over time	22
Coordination across sectors and institutions to collect and share data	13
Policy or legal arrangements that mandate the preparation of national reports	10
Leadership (e.g. an entity appointed to undertake and coordinate data collection and -sharing)	8
Definition of roles and responsibilities across the institutions involved	4
Stakeholder awareness, especially in the private sector	4
Data and information	**23**
Data collection process (including establishment of a database, data-sharing system and web-based knowledge management platform)	14
Data management process (including documentation, archiving, QA/QC protocols and uncertainty management procedures)	6
Availability of quality data	3
Accessibility of data for confidentiality reasons	1
Methodology and tools	**16**
Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training	4
Practical guidance, tools and methods	4
Technical backstopping	4
Technical (knowledge) capacity to interpret, analyse and translate data and information gathered using tools and methods, including training	2
Technological infrastructure	1
Total	**100**

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

26.   The percentage breakdown by area of challenges and needs reported under this theme differed by developing country Party group, although there were similar patterns in the order by frequency of the reporting of challenges and needs in the areas. Other developing country Parties that are not LDCs or SIDS reported a higher share of issues related to institutional arrangements than the LDCs and SIDS, while the LDCs and SIDS reported a higher share of issues with respect to data and information compared with other developing country Parties that are not LDCs or SIDS. Figure 11 provides a breakdown of the areas in which challenges and needs related to cross-cutting issues were identified by the different groups of developing country Parties. Box 5 provides examples from the categories of identified cross-cutting issues.

Figure 11

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

Box 5

Examples from categories of cross-cutting issues

Institutional arrangements: Many developing country Parties reported the need to further enhance existing institutional arrangements to meet future reporting needs, highlighting several key areas in this regard, including the need to secure adequate and predictable financial support; the need for training and mentoring, including technical backstopping, to develop the technical and managerial expertise required to stabilize related operations and enhance reporting over time; the need to ensure that policy and legal arrangements for stakeholder participation underpin collaboration and coordination with key stakeholders; and the need to develop capacity in areas required for reporting under the ETF, the need to develop indicators for tracking progress in implementing and achieving NDCs and integrate climate change issues into national policies, plans and programmes.

Data and information: Several developing country Parties expressed the need to further enhance the data collection process. Some of the key needs reported are to develop and maintain sectoral and centralized electronic databases into which data can be entered in the correct formats; collect more disaggregated data, for example gender-disaggregated data; actively involve government entities, research institutions, the public sector and non-governmental organizations in the data collection process; enhance data archiving and analysis processes to increase homogeneity and standardization; and implement QA/QC measures.

Methodology and tools: Parties reported an array of needs, predominantly in the areas of training national experts on preparing national inventory reports and conducting modelling and analysis of the different scenarios and aspects (e.g. of technical, economic and environmental scenarios) for deploying low-carbon technologies; and developing cross-sectoral climate change awareness programmes aimed at increasing understanding of the scientific basis of climate change, including sectoral impacts of climate change actions and available or emerging options for climate change mitigation and adaptation measures.

G. Summary

27.   Table 6 summarizes the two most frequently reported categories of issues identified in each area, as shown in tables 1–5.

Table 6
Two most frequently reported categories of issues identified by developing country Parties in each area

Theme	*Issues by area and category (lack thereof or insufficient)*
Preparing national greenhouse gas inventories	**1. Data and information** Availability of quality data Data collection process (including establishment of a database, data-sharing system and web-based knowledge management platform) **2. Methodology and tools** Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training Technical backstopping **3. Institutional arrangements** Coordination across sectors and institutions to collect and share data Institutional capacity to sustain and improve the MRV and transparency process over time
Reporting on mitigation actions	**1. Methodology and tools** Practical guidance, tools and methods Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training **2. 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 **3. Data and information** Data collection process (including establishment of a database, data-sharing system and web-based knowledge management platform) Availability of quality data
Reporting on climate change impacts and adaptation	**1. Methodology and tools** Technical backstopping Technological infrastructure **2. Data and information** Data collection process (including establishment of a database, data-sharing system and web-based knowledge management platform) Availability of quality data **3. Institutional arrangements** Coordination across sectors and institutions to collect and share data Institutional capacity to sustain and improve the MRV and transparency process over time
Reporting on support needed and received	**1. Methodology and tools** Practical guidance, tools and methods Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training **2. Institutional arrangements** Institutional capacity to sustain and improve the MRV and transparency process over time

Theme	Issues by area and category (lack thereof or insufficient)
	Coordination across sectors and institutions to collect and share data
	3. Data and information
	Data collection process (including establishment of a database, data-sharing system and web-based knowledge management platform)
	Availability of quality data
Cross-cutting issues	**1. 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
	2. Data and information
	Data collection process (including establishment of a database, data-sharing system and web-based knowledge management platform)
	Data management process (including documentation, archiving, QA/QC protocols and uncertainty management procedures)
	3. Methodology and tools
	Technical (knowledge) capacity to apply guidelines, guidance, tools and methods, including training
	Practical guidance, tools and methods