



DESIGNING THE ENHANCED TRANSPARENCY FRAMEWORK PART 1: REPORTING UNDER THE PARIS AGREEMENT

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EXECUTIVE SUMMARY

Highlights

- Parties to the UNFCCC are to design the modalities, procedures, and guidelines for reporting that are fit for purpose, follow the principles of the Paris Agreement, and enhance the current transparency system.
- This working paper unpacks the reporting requirements of the Paris Agreement; analyzes the current reporting system under the UNFCCC; and proposes approaches to designing the specific modalities, procedures, and guidelines for reporting.
- There is significant experience to build on within the current transparency system under the UNFCCC. Some current practices are effective and should continue under the enhanced transparency framework of the Paris Agreement, while other practices could be improved or new ones developed.
- The variety of vehicles now used for communicating or reporting means that Parties must clarify the functions of each reporting channel, streamline the process, and ensure coherence to avoid undue burden.
- Parties will need to weigh numerous approaches to designing the reporting system to assess which can best drive improvements in overall transparency and fulfill the objectives of the Paris Agreement. Capacity building will be critical for developing countries that need it.

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Context

Transparency is a crucial element of the international climate change regime. Since the adoption and entry into force of the Paris Agreement, in 2016, Parties have been negotiating to determine the modalities, procedures, and guidelines (MPGs) for the enhanced transparency framework established under the Agreement. The purpose of the framework is to provide a clear understanding of actions taken to mitigate and adapt to climate change; among other things, it will track progress toward implementing and achieving individual nationally determined contributions (NDCs) and improve clarity on support provided and received by relevant Parties.

This paper analyzes the reporting system under the United Nations Framework Convention on Climate Change (UNFCCC) and describes various approaches to improving it. It describes *what* should be reported, *when* it should be reported, and *how* it should be reported. (A companion paper addresses issues related to review procedures under the transparency framework.¹) Under the Paris Agreement, Parties are instructed to report on

- national inventories of anthropogenic greenhouse gas (GHG) emissions by sources and removals by sinks;²
- information necessary to track progress made in implementing and achieving nationally determined contributions under Article 4;³
- information related to climate change impacts and adaptation under Article 7;⁴
- information on financial, technology transfer, and capacity-building support provided to developing country Parties under Articles 9, 10, and 11⁵ in conjunction with information on support for developing country Parties provided and mobilized through public interventions⁶ and information on support to be provided;⁷ and
- information on financial, technology transfer, and capacity-building support provided to developing country Parties under Articles 9, 10, and 11.⁸

Information provided by Parties under the transparency framework will support four complementary processes: a technical expert review (TER); a facilitative, multilateral consideration of progress (FMCP); a global stocktake (GST) cycle, in which countries consider the state of implementation of the Agreement to assess collective progress toward

achieving the Agreement's purpose and its long-term goals every five years; and may inform the Article 15 committee. Not all information provided is necessarily required to inform all complementary processes.

Our Approach

This paper describes countries' experiences with reporting, lessons learned, and possible ways to increase transparency and support implementation of the Paris Agreement. We base our conclusions on a review of existing literature, Party submissions, and interviews with negotiators and technical experts. Our purpose is to recommend ways to design a robust, efficient, and purposeful reporting system that fulfills its purpose as outlined in the Paris Agreement; supports and complements review activities; and informs other relevant processes under the Paris Agreement.

The authors establish a list of criteria that should guide development of a reporting system to help compare approaches and identify suggested improvements. We offer views on how each approach meets or falls short of relevant criteria. We recognize the limitations and subjectivity of this method and note that many other lessons, experiences, and options also could be relevant. Our aim is not to provide a definitive proposal for reporting under the Paris Agreement, but instead to help unpack some of the complex questions and approaches Parties may encounter as they design the next phase of the reporting system.

Research Findings

The enhanced transparency framework must respond to the many requirements described in the Paris Agreement, but it will be difficult to fully meet these goals immediately. Requirements include adhering to the principles of transparency, accuracy, completeness, consistency, and comparability (TACCC); avoiding undue burden on Parties; preventing double-counting; providing flexibility for those developing country Parties that need it in the light of their capacities; maintaining the frequency and quality of reporting; ensuring environmental integrity; and facilitating improvement over time. Meeting these requirements will take time, as some Parties build their domestic reporting capacity. However, the process of implementing reporting and review requirements under the UNFCCC in pursuit of transparency should help build countries' capacities and improve their domestic transparency systems, as well as those at the international level.

Trade-offs may be unavoidable as Parties strive to achieve the various objectives and meet the many criteria for enhanced transparency in reporting. For example, pursuing the TACCC principles can increase the burden on Parties preparing reports if greater quality and quantity of reported data is required. Flexibility in reporting requirements can reduce the level of comparability and the ability to understand overall collective progress. Parties must navigate these diverse priorities, weigh trade-offs, and strive toward reporting approaches that accommodate as many purposes and fulfill as many criteria as possible.

Clear guidance is key if Parties are to implement the requirements as accurately and comprehensively as possible. In negotiating the new MPGs, Parties should develop guidance that provides detailed and unambiguous instruction. Experience with the current system has shown that unclear guidance can hinder implementation and challenge reviewers who must evaluate and understand the information provided by countries. Parties need to consider the reporting MPGs as a complete package. Each category of information may serve different purposes, but there also are common purposes, including support for the overall transparency framework. The complete set of MPGs for all categories of information should build a comprehensive approach to improve overall transparency while avoiding any unnecessary duplication or burdensome effort.

Suggested Approaches to Enhance Reporting under the Paris Agreement

This paper provides specific suggestions to enhance transparency concerning what, when, and how to report information in each category of reporting under the enhanced transparency framework. Where applicable, we also make suggestions for who should report the information. We highlight how all these suggestions conform to the criteria identified. As it is recommended that some existing practices should continue, Parties that are already following these reporting practices should focus on ways to further improve their reporting. Overall, the MPGs should encourage improvement by all Parties over time.

Reporting of national inventories: Over time, all Parties should be required to report the most accurate and comprehensive presentation of their GHG inventory data covering all seven GHG gases under the Kyoto Protocol, understanding that capacity-building efforts will be required to support developing country Parties. At a minimum, Parties should maintain their current frequency of reporting. Over time, more developing countries may be in a position to report annually, and

they should be encouraged to do so. Parties should report their inventories using common reporting format (CRF) tables, and all Parties with the capacity to do so should apply the most recent Intergovernmental Panel on Climate Change (IPCC) Guidelines. Capacity-building efforts should focus on providing training for the use of the CRF.

Information necessary to track progress:

All Parties should be required to report additional information on their NDCs for the basis of tracking progress, similar to the initial report under the Kyoto Protocol. Information reported on progress related to implementation and achievement by Parties should have common elements as well as elements that are specific to the NDC, as relevant. Capacity-building resources should be provided to support enhanced data needs, for example, projection methods. Parties should continue to report information relevant to progress every two years; it may be practical if information reported in a given year is tailored to the needs of that time period (e.g., greater detail on implementation before a GST) rather than comprehensively covering all types of information every two years. Parties should report using a CRF organized by sectors and GHGs covered by the NDC and include key methodological assumptions accompanied by the use of an accounting tracking format for GHG targets. Flexibility on how comprehensively the table is completed could be applied by those developing country Parties that need it in the light of their capacities.

Information on climate change impacts and adaptation:

Reporting should cover both forward-looking and backward-looking information as well as contextual information. A single set of guidance for adaptation communications under Article 7 and transparency reporting under Article 13 could streamline the reporting process. It should include practical instruction for the type of information that should be provided depending on when and how it is submitted, since Parties will retain the flexibility to choose a vehicle for reporting.

Information on support provided and mobilized:

We propose detailed suggestions for specific issues that advance the TACCC principles, ensure avoidance of double-counting, and allow for a full overview of aggregate financial support. We also recommend that Parties include a description of how the provision of support contributes to achieving the aims of the Paris Agreement as set out in Article 2 and a description of how, in accordance with Article 9, paragraph 4, the provision of scaled-up financial resources contributes to achieving a balance between adaptation and mitigation. Parties should report biennially, through enhanced

common tabular format (CTF) tables containing ex-post information on support provided, as well as communicating ex-ante information. Developed country Parties as well as other Parties that provide support should use the same MPGs.

Information on support needed and received:

Parties should pull information from other communications and planning activities, including NDCs, National Adaptation Plans (NAPs), National Adaptation Programmes of Action (NAPAs), Technology Needs Assessments (TNAs), assessments of adaptation needed, and other sources for reporting on support needs. Parties should apply a tiered system of reporting on support received, where information is provided according to capacities, with the aim of progressing toward more detailed reporting over time. They also could voluntarily report on finance from domestic budgets used for implementing the Paris Agreement and their NDCs, which would help in assessing progress toward the overall goals of the Agreement, including Article 2.1(c), and ensure they receive recognition for their efforts. Parties could align reporting periods for support received with those for support provided, enabling an assessment of gaps and inefficiencies.

To support all the suggestions noted above, it will be imperative that developing country Parties are provided adequate support to improve their reporting practices over time. The authors also highlight where additional methodological guidelines could be developed and internationally agreed upon to enhance the assessment and tracking of impacts of policies, actions, and financial flows, and facilitate the monitoring and evaluation of adaptation efforts. It will be imperative to ensure that reporting channels are responsive and complementary, balancing the need to avoid undue burden while ensuring that reporting is fit for purpose. The MPGs for reporting should enable all Parties to improve over time on the collective journey toward enhanced transparency.

1. INTRODUCTION

1.1 Overview

The system for reporting information under the United Nations Framework Convention on Climate Change (UNFCCC) has evolved in detail and complexity since 1992 (see Appendix A). Reporting obligations are contained in the text of the UNFCCC, and additional reporting requirements have been introduced through the Kyoto Protocol and subsequent decisions. Reporting and review procedures and requirements can be challenging for participating governments, but a robust transparency system is essential to an effective international climate governance system. Transparency builds trust and confidence that governments are fulfilling their commitments, and it helps stimulate further action.⁹ Equally, the act of participating in the transparency system builds countries' reporting capacity over time, which, in turn, increases transparency.

The information reported by Parties undergoes formal review processes organized by the UNFCCC Secretariat and conducted by teams of experts. For developed country Parties, this includes annual reviews of greenhouse gas (GHG) inventories, reviews under the Kyoto Protocol, and technical expert review (TER) and multilateral assessment (peer review). The purpose of these processes is to review the progress made in achieving emission reductions and assess the provision of financial, technological, and capacity-building support to developing country Parties. Developing country Parties undergo an analogous process, which includes a technical analysis and a facilitative sharing of views (FSV; peer review), with the aim of increasing the transparency of mitigation actions and their effects.¹⁰ The fact that the national reports, as well as the review reports, are publicly available on the UNFCCC website¹¹ is significant in that it allows other countries and the public to review and analyze the information provided.

The current reporting system has greatly increased the transparency of countries' climate activities and has helped build trust and confidence among Parties. However, the system offers room for improvement. Countries are now discussing how to build on their experience, enhance their reporting efforts, address the shortcomings of the current regime, and streamline the transparency process to support the effective implementation of the Paris Agreement.

1.2 Approach and Methodology

The objective of this paper is to identify suggestions for addressing the key issues facing countries that are negotiating the modalities, procedures, and guidelines (MPGs) for transparency under the Paris Agreement, which are to be adopted in 2018.¹² Readers may find the information in this paper helpful during the negotiations. The purposes of the reporting explored in this paper and the criteria (described below) may serve as useful tools when considering approaches and suggestions.

The following chapters will explore the five categories of information explicitly noted in Article 13 of the Paris Agreement (see Box 1) and highlight possible approaches to developing a reporting system that will support and complement review activities and inform other relevant processes under the Paris Agreement.

For each of these information categories, we explore the following:

- **The purpose and importance of reporting.** We highlight the types of information best suited to support the purposes of the transparency framework and other relevant processes under the Paris Agreement.
- **A comparison of the Paris Agreement's reporting requirements and current requirements under the UNFCCC and Kyoto Protocol.** The existing transparency system provides useful context as Parties are to build on and enhance existing practices. These comparisons are included in tables in Appendix B.
- **Experiences and lessons learned from reporting under current requirements.** The intention underlying the enhanced transparency framework under the Paris Agreement is to enhance existing arrangements under the Convention¹³ including national communications, and to build on and eventually supersede the measurement, reporting, and verification (MRV) system established by decision 1/CP.16, which includes biennial reports (BRs) and biennial update reports (BURs).¹⁴ It is therefore important to consider lessons learned and best practices from the current reporting rules and procedures. This paper considers how the existing reporting requirements can serve as a practical foundation for international transparency under the Paris Agreement while avoiding duplication of efforts or placing undue burden on countries. These

Box 1 | Information to Be Reported under the Paris Agreement's Transparency Framework

1. Each Party shall regularly provide the following information: a **national inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases**, prepared using good practice methodologies accepted by the Intergovernmental Panel on Climate Change and agreed upon by the Conference of the Parties serving as the meeting of the Parties to [the Paris] Agreement; (Article 13, paragraph 7[a])
2. Each Party shall regularly provide the following information: **information necessary to track progress made in implementing and achieving its nationally determined contribution under Article 4.** (Article 13, paragraph 7[b])
3. Each Party should also provide information related to **climate change impacts and adaptation** under Article 7, as appropriate. (Article 13, paragraph 8)
4. Developed country Parties shall, and other Parties that provide support should, provide information on **financial, technology transfer and capacity-building support provided** to developing country Parties under Articles 9, 10 and 11. (Article 13, paragraph 9)
5. Developing country Parties should provide information on **financial, technology transfer and capacity-building support needed and received** under Articles 9, 10 and 11. (Article 13, paragraph 10)

lessons apply at the international level and do not necessarily focus on national systems.

- **Approaches and suggestions for reporting information.** We explore technical approaches for reporting information in each category. The selected approaches are based on literature review and countries' submissions and are not comprehensive.

For each information category, we discuss *what* needs to be reported (content of reporting), *when* (frequency of reporting), *how* (format of reporting), and who is reporting the information, as appropriate. However, due to the diversity in current reporting and the wide array of issues in each category of information, sections do not necessarily contain the same level of detail or depth.

The focus of this paper is the future MPGs for all the reporting categories of Article 13 of the Paris Agreement; the authors therefore consider the entire package of reporting requirements under the UNFCCC. Experiences and lessons learned were drawn from a sampling of

resources, including country submissions and reports to the UNFCCC, synthesis documents and reports prepared by the UNFCCC Secretariat, interviews with transparency experts, and secondary literature. The paper does not provide a comprehensive overview of experiences and lessons, but they relate to key issues to be discussed by Parties at forthcoming negotiating sessions leading to the adoption of the MPGs in 2018.

To narrow down the many approaches that could be considered, the authors developed a set of evaluation criteria (see Figure 1). We explore possible approaches only if they support these criteria. The criteria include the specific conditions for the transparency MPGs as agreed upon by Parties and described in the Paris Agreement and its accompanying decision. Noting that there are likely to be trade-offs when attempting to meet all the criteria, we recommend approaches that can meet the greatest number of criteria. The paper provides examples of some of the pros and cons of different approaches when measured against these criteria. When existing practices already satisfy the criteria, it is our suggestion that these approaches should be maintained.

1.3 Reporting under the Paris Agreement

Under the Paris Agreement, countries established an enhanced transparency framework for action and support, which will build on and enhance existing transparency requirements.¹⁵ The enhanced transparency framework under Article 13 contains two basic functional pillars: reporting and review.

While Parties will adopt common MPGs to clarify the reporting requirements, it is unlikely that all countries will be able to apply the MPGs uniformly and immediately. Parties will have to decide how to build into the MPGs flexibility for those developing country Parties that need it in the light of their capacities. Achieving a balance between MPGs that are “common” while also providing “flexibility” will be a signature feature of the enhanced transparency framework, which shifts away from the previous approach of differentiated guidelines and processes for developed and developing country Parties and toward a system shared by all Parties.

Under the review pillar, there are two practical components: a technical expert review (TER) and a facilitative, multilateral consideration of progress

Figure 1 | **Criteria Used to Assess Reporting Approaches**

BE FIT FOR PURPOSE	Support the transparency framework (Article 13)	
	Support other relevant processes under the Paris Agreement (global stocktake and Article 15 committee)	
	Support additional purposes of reporting information*	
UPHOLD THE GUIDING PRINCIPLES	Be facilitative, nonintrusive, nonpunitive in manner, respectful of national sovereignty, and avoid placing undue burden on Parties (Art. 13.3)	Avoid duplication as well as undue burden on Parties and Secretariat (para 92d)
	Facilitate improved reporting and transparency over time (para 92a)	Ensure Parties maintain at least frequency and quality of reporting, in accordance with respective obligations (para 92e)
	Provide flexibility to those developing country Parties that need it in the light of their capacities (Art. 13.2 & para 92b)	Ensure double-counting is avoided (para 92f)
	Promote transparency, accuracy, completeness, consistency, and comparability (para 92c)	Ensure environmental integrity (para 92g)
ADDRESS CHALLENGES, LESSONS, AND NEEDS	Build on and enhance the transparency arrangements under the Convention	

* see Figure 2
Source: Authors.

(FMCP). The TER will cover, at a minimum, national inventories; the information necessary to track progress made in implementing and achieving nationally determined contributions (NDCs) under Article 4; and information on financial, technology transfer, and capacity-building support provided to developing country Parties. The facilitative, multilateral consideration of progress will cover Parties' efforts under Article 9 and the implementation and achievement of the NDCs. We explore these processes further in a companion paper on review processes under the Paris Agreement.¹⁶

Together, the components of the transparency framework will support other key elements of the Paris Agreement, including accounting, cooperative approaches, the global stocktake (GST), and the mechanism to facilitate implementation and promote compliance.¹⁷ For example, the GST will be an opportunity to assess implementation efforts and reflect on collective progress every five years. Reported information on needs will enhance capacity-building efforts to improve implementation and fulfillment of requirements under the Agreement. Reporting on progress toward NDCs will help inform updating of NDCs and raising of ambition, and ultimately, the achievement of the purpose of the Agreement and its long-term goals.

1.3.1. Purposes of Reporting

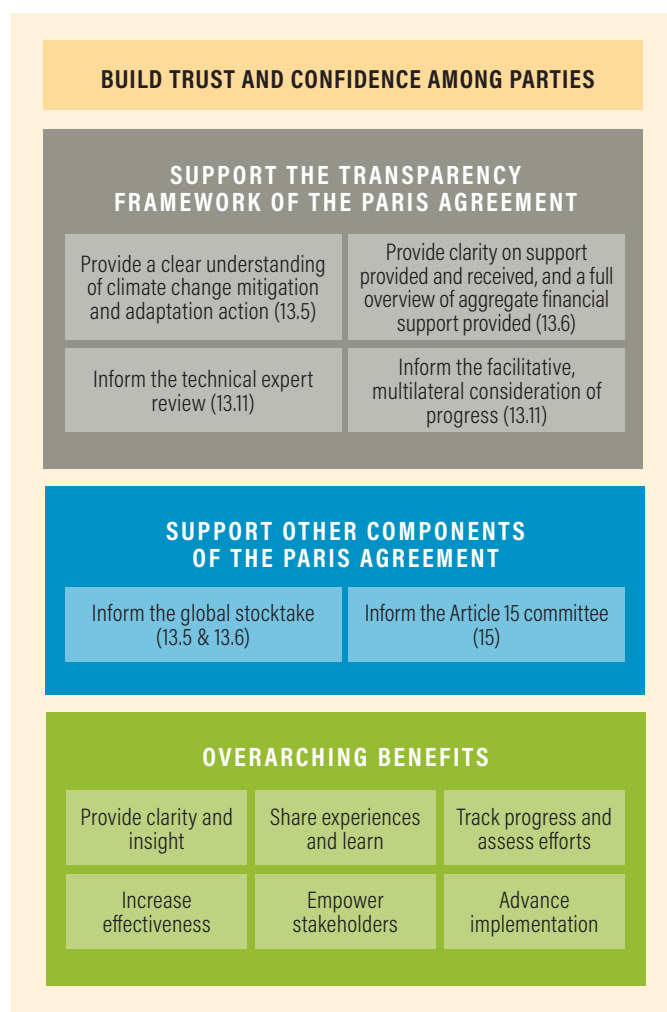
Reporting information under the five categories listed in Box 1 can fulfill specific purposes that contribute to enhancing transparency and advancing implementation. These purposes will determine the type of information to be provided (*what*), the vehicle to communicate that information and methodology for reporting (*how*), and the frequency at which it will be communicated (*when*). Figure 2 provides our overview of some of the purposes of reporting information on climate change action under the Paris Agreement.

Shown in **gray**: The primary purpose is to support the transparency framework. The framework has dual informative purposes: provide a clear understanding of climate change mitigation and adaptation action, including clarity and tracking of progress toward achieving Parties' individual NDCs and clarity on support provided and received by relevant individual Parties, and provide an overview of aggregate financial support provided.¹⁸ Reporting also will provide input for the TER and the FMCP.

Shown in **blue**: Reporting also will support other components of the Paris Agreement, including the GST¹⁹ and may also inform the Article 15 committee.

Shown in **green**: Overarching benefits of reporting.

Figure 2 | **The Many Purposes of Reporting on Climate Change Information**



Throughout the paper, we follow this color scheme to show how the different categories of reporting support different purposes. The purposes may be at odds with each other: Parties may have different priorities or circumstances that influence their reasons for reporting, the data available, or their capacity to report, including their capacity to collect and disclose data. Parties will need to weigh choices and approaches and be aware of any trade-offs a particular decision may have on achieving one or more of the purposes of reporting.

1.3.2. Communicating versus Reporting

Intertwined with the development of common MPGs for *reporting* are overlapping requirements for *communicating* under the Paris Agreement. In addition to the five categories of reporting under Article 13, there are separate requirements or invitations under other articles for Parties to communicate information related to mitigation, adaptation, financial and capacity-

building support, and long-term low-GHG emissions development strategies.²⁰ The Paris Agreement is unclear on whether the information to be reported under Article 13 is related to these other communication pathways (i.e., whether they may be the same or separate documents). The information communicated by Parties under the Paris Agreement, such as through NDCs (which show Parties' political intent), and the information to be reported under Article 13 need to be aligned in order to efficiently track progress.

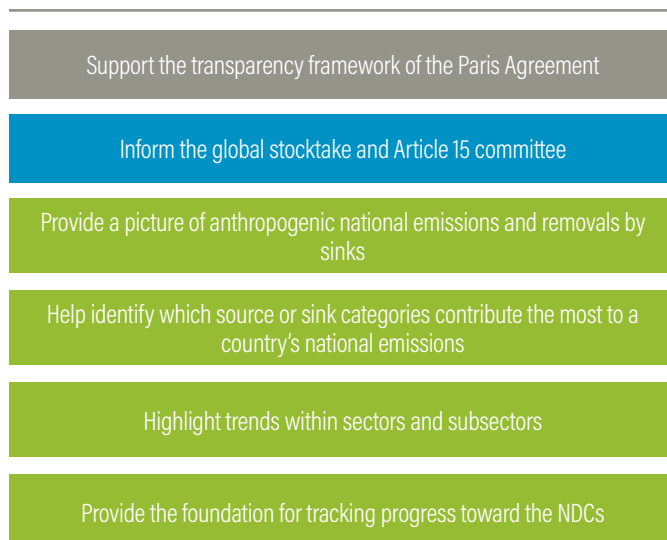
Parties may need to clearly distinguish requirements for *communicating* from those for *reporting* if they are intended to provide different information to achieve different purposes. In some cases, such as with adaptation communications under Article 7, there is no legal obligation to communicate, and the scope is currently broad enough to encompass both forward-looking and backward-looking information. If Parties decide that the purposes of communicating and reporting information may in fact be the same, guidance should be clear and concise to ensure that countries are providing information in such a way that promotes the transparency, accuracy, completeness, consistency, and comparability (TACCC) principles rather than creating further confusion.²¹

2. REPORTING ON NATIONAL INVENTORIES OF ANTHROPOGENIC EMISSIONS AND REMOVALS

2.1 Purpose and Importance of Reporting National Inventories

Per Article 13, paragraph 7(a), of the Paris Agreement, each Party will regularly provide a national inventory report (NIR) of anthropogenic GHG emissions by sources and removals by sinks, prepared using good practice methodologies accepted by the Intergovernmental Panel on Climate Change (IPCC) and agreed upon by the Conference of the Parties serving as the meeting of the Parties to the Agreement (CMA). The main purposes of reporting on national GHG inventories are summarized below.

PURPOSES OF REPORTING NATIONAL INVENTORIES



2.2. Experience, Approaches, and Suggestions for the Design of the Reporting Guidelines

This section explores some of the key decisions that Parties will need to make when designing the MPGs for reporting. The challenge is to find an appropriate balance between ensuring national inventories that are robust and support the TACCC principles, while providing adequate flexibility for developing countries that need it in the light of their capacities to enable them to improve their reporting over time. A comparison of existing reporting requirements for GHG inventories with the reporting elements of the Paris Agreement is provided in Appendix B, Table B-1.

2.2.1. What: Content of Reporting

EXPERIENCE

National GHG inventories vary significantly in their level of detail, scope, and data quality. Annex I Parties have been producing regular inventories for 20 years and have undergone the formal review process, with many opportunities to learn from experience.²² Annex I Parties also have strengthened their national inventory systems to support annual reporting. In contrast, non-Annex I Parties have reported less frequently (until the recent requirement of biennial reporting) and have produced fewer inventories. Capacity constraints in developing countries, combined with fewer reporting requirements, have slowed the development of national systems.

Parties have, nevertheless, produced more complete and transparent GHG inventories over time, with many countries covering more sources and gases.²³ The IPCC has assisted by advancing guidelines and supporting materials, such as software, to Parties. With greater experience and capacity gains, countries have been able to improve the accuracy of national inventories. For example, Parties are working toward better statistical sampling and taking additional measurements to improve the quality of country-specific emissions factors.²⁴ And many are moving toward the use of higher, more accurate IPCC tiers; some developing countries are now using higher methods, such as Tier 2, for a variety of categories of emissions and sinks.²⁵ Many developing country Parties also have begun to use either the 2003 or 2006 IPCC Guidelines, at least for portions of their national GHG inventories.

APPROACHES

Scope of reporting: Parties should maintain the scope of their current reporting. Beyond this, all Parties could be required to report carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃). Flexibility could be given to those Parties that require additional capacity. For example, they might report on these seven GHG gases for key categories only, while reporting CO₂, CH₄, and N₂O at a minimum for all categories. Or flexibility could be provided to report additional GHGs over a set period of time to allow for capacity gains to be made. These Parties should report more comprehensively as their capacity improves over time. Strong encouragement coupled with enhanced capacity building could lead to greater clarity regarding overall coverage of GHG emissions and sinks.

Methodological tiers and decision trees: Parties should continue their current reporting procedures. Beyond this, all Parties could be required to use higher-tier methods for key categories in accordance with 2006 IPCC Guidelines, which would reduce uncertainties and improve accuracy of results. The 2006 Guidelines are to be refined in 2019, and an option might be to request that Parties use “the latest IPCC Guidelines” to keep up with future improvements in methodology over time.²⁶ Flexibility could be provided for those Parties that need it in the light of their capacities, for example, to use a lower threshold for key categories. Parties should be encouraged to improve the quality and accuracy of information. Capacity-building efforts should support the use of higher tiers.

Emissions factors and activity data: Parties should be recommended to make every effort to develop or select emissions factors and activity data in accordance with the corresponding decision trees in the 2006 IPCC Guidelines to maximize accuracy. If the 2006 IPCC Guidelines’ data, factors, and methods are not appropriate for specific national circumstances, Parties could use their own emissions factors and activity data where available, if developed in a manner consistent with the 2006 IPCC Guidelines. This flexibility, which already exists in the Guidelines, would ensure they provide the most appropriate results for the country context. If country-specific information is lacking, emissions factors could be used from the IPCC emission factor database if appropriate. This would reduce burden on Parties to collect such information but also could affect the accuracy of results.

It is considered good practice to identify and report key categories to help prioritize efforts and direct resources.²⁷ Regarding key category reporting, those Parties that identify key categories could be required to report individual and cumulative percentage contributions from the categories to the national totals. Key category reporting provides greater insight into the categories of emissions that have a major impact on a country’s overall GHG inventory and should be encouraged to the extent possible.

SUGGESTIONS

Over time, all Parties should be required to report comprehensively. All Parties should be required to make every effort to develop and/or select emission factors, and collect and select activity data, in accordance with the corresponding decision trees using the 2006 IPCC Guidelines (or the latest IPCC Guidelines), or develop country-specific emissions factors and activity data consistent with the Guidelines. In addition, all Parties should be required to use a recommended method for those categories that are determined to be key categories, in accordance with the corresponding decision trees in the 2006 IPCC Guidelines (or the latest IPCC Guidelines). (See Section 2.2.3 for a discussion on the use of the 2006 Guidelines.)

Capacity-building efforts should be dedicated to facilitating the most accurate presentation of GHG inventory data for all seven GHG gases covered under the Kyoto Protocol. Information from all countries’ national inventories will be critical to assess collective progress during the GST and facilitate the tracking of individual progress made in implementing and achieving NDCs.²⁸

2.2.2. When: Frequency of Reporting

EXPERIENCE

Lessons from Annex I Parties have shown that regular, frequent reporting can help strengthen institutional arrangements over time, but such gains make higher demands on human and financial resources.²⁹ Given sufficient capacity, more frequent reporting can help establish and maintain a continuous process for preparing national inventories, monitoring mitigation and adaptation actions, and tracking support provided or received. Frequent reporting improves consistency and helps address many questions concerning what information should be included in each report.³⁰

Significant capacity gaps remain that have impeded regular reporting. Some developing countries have not yet established sustainable national inventory systems that can support regular data collection and reporting.³¹ For example, without data archiving and management, it can be challenging to conduct regular updates of the GHG inventory.³² Issues regarding data scarcity, consistent personnel, confidentiality, and accessibility can affect reporting and the ability to produce a consistent time series of data for national GHG inventories.³³ In addition, given that activity data in some sectors are updated only every 5–10 years, some Parties are challenged to include new data in each new inventory report.³⁴

APPROACHES

Frequency: One approach is that Parties would maintain their existing reporting frequency. During a transparency Inter-sessional Workshop of the Ad Hoc Working Group on the Paris Agreement (APA) in March 2017, some Parties called for biennial inventory reports from developing countries and annual reports from developed countries.³⁵ Another approach would require all Parties to submit a NIR each year, with Small Island Developing States (SIDS) and Least Developed Countries (LDCs) doing so at their discretion. Flexibility could be provided regarding the detailed content and tiers used for the inventory report, with improvement over time. Flexibility also could be considered for those developing countries that need it in the light of their capacities to report every other year, and capacity-building efforts would need to be increased accordingly.

Time series: At a minimum, Parties would pursue the current frequency of their reporting (with developed country Parties required to provide a complete GHG inventory time series from base year to two years prior to submission and developing countries encouraged to provide a consistent series from the years reported in the previous national communications to no more than four years prior to submission).³⁶ Another approach might require all Parties to submit a consistent time series from the last

submitted inventory to two years prior to the submission year. Parties that require flexibility in the light of their capacities could provide an explanation or justification for not doing so with a description of capacity needs to improve transparency and draw targeted capacity-building support. Parties could improve the consistency and comparability of inventories if they were all reported following the same time series.

SUGGESTIONS

Parties should, at a minimum, maintain their reporting frequency, which is consistent with the Paris Agreement. Over time, more developing country Parties may be in a position to report annually, as their national inventory arrangements grow stronger due to increased reporting frequency, and they should be encouraged to do so.

Parties should be required to report a consistent time series from the base year of the NDC to a recent year. A consistent time series is of critical importance to inventory data. However, some developing country Parties may be in a position to report two years prior to submission and should be encouraged to do so.

Capacity-building efforts should be dedicated to strengthening countries' ability to report with regular frequency. Countries should use the same time series when reporting to support greater consistency and comparability.

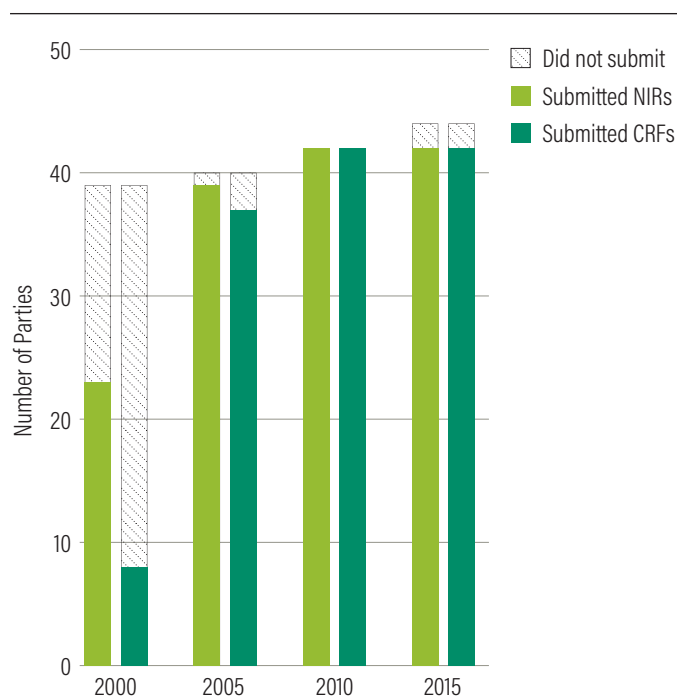
2.2.3. How: Format and Methodology for Reporting

EXPERIENCE

Formats: Multiple reporting formats for inventories, including differences between Annex I and non-Annex I reporting, and between biennial reports and National Communications (NCs), have led to challenges. Parties have highlighted the need to explore how different reporting processes can feed into each other to minimize the reporting burden.³⁷ Parties face additional challenges in those years when biennial reporting and NCs overlap.³⁸ Annex I Parties have been shifting toward use of the available national inventory formats, including NIRs and common reporting format (CRF) tables (see Figure 3).³⁹

Methodology: More developing countries are showing a preference for the most recent IPCC Guidelines, in spite of capacity gaps and the fact that developing countries are not required to use the 2006 Guidelines.⁴⁰ Some Parties note that the Guidelines not only reflect current science, but also have software that provides a more integrated view of sources and sinks and is more user-friendly.⁴¹ However, Parties have noted challenges as they transition from the use of the 1996 IPCC Guidelines to the 2006 Guidelines, for example, in comparing national GHG inventories or creating sectoral emissions trends.⁴²

Figure 3 | **Submission of CRFs and NIRs by Annex I Parties**



Source: Based on analysis from Organisation for Economic Co-operation and Development (OECD) 2016, modified by the authors.

APPROACHES

CRF tables: Under one approach, Parties would simply continue their current format of reporting.⁴³ Another approach would require all Parties to use CRF tables. Flexibility could be provided to countries that lack capacity to do so by requiring the use of CRF tables only for some part of their inventory (e.g., for those emissions and removals covered by the NDCs, with noncovered sectors and GHGs included in summary tables). Capacity-building efforts should support countries that need training on inputting their data to CRF tables.

Methodology: The 2006 Guidelines improved on the 1996 Guidelines by reducing double-counting or omissions and improving transparency and completeness of inventories. There are several choices regarding how Parties should be instructed to use the different guidance documents. At a minimum, Parties would be required to use the 2006 IPCC Guidelines and any supplementary methodologies. During the recent transparency workshop, some Parties suggested that Parties be encouraged to use the 2006 Guidelines, recognizing that Parties are given discretion to apply different tiers. They called for capacity-building efforts to be dedicated to training and building staff capacity to apply the most recent guidelines.⁴⁴ Here again, flexibility might be considered for those developing country Parties that need it in the light of their capacities to transition to the 2006 Guidelines over a longer timeframe, at least for non-key categories.

SUGGESTIONS

At a minimum, redundancy in reporting should be reduced. Parties should explore whether one reporting vehicle can be used on a biennial basis (with perhaps additional components reported on a greater frequency).

Parties should use CRF tables to report data in a standardized format. This would facilitate comparison of inventory data and trends. Capacity-building efforts should be dedicated to enhancing the capacity of Parties that cannot do so.

The MPGs should require all Parties with the capacity to do so to report using the most recent Guidelines. Many Parties already show preference for the 2006 IPCC Guidelines. Regarding the timing of the transition from the 1996 to the 2006 Guidelines, flexibility could be given to those Parties that need time to build their capacity.

3. REPORTING INFORMATION NECESSARY TO TRACK PROGRESS MADE IN IMPLEMENTING AND ACHIEVING NDCS

3.1 Purpose and Importance of Reporting Information Necessary to Track Progress

The Paris Agreement's Article 13, paragraph 7(b), requires each Party to provide information necessary to track progress made in implementing and achieving its NDC. Such information serves multiple purposes.⁴⁵

PURPOSES OF REPORTING INFORMATION NECESSARY TO TRACK PROGRESS

Support the transparency framework of the Paris Agreement

Inform the global stocktake and Article 15 committee

Clarify details within an NDC to support tracking progress

May facilitate understanding of what additional progress and actions are needed by the end of the NDC implementation period to inform future action

May facilitate understanding of which actions have been effective in delivering their intended results

May support decisions of whether to continue, discontinue, or enhance implementation of existing actions

Can highlight good practices, priorities, needs, and gaps

Can identify and promote synergies between actions taken to achieve the NDC and actions taken to achieve countries' sustainable development goals (SDGs) and demonstrate progress toward multiple national objectives

How progress will be reported will be dictated in part by the accounting guidance to be adopted by the CMA.⁴⁶ These guidelines will specify how countries will track progress toward NDC goals and may be used by Parties for tracking progress toward their first NDCs.

Many Parties included an adaptation component in their NDCs, and the form and content of that information varies widely. Article 13, paragraph 8, encourages Parties to provide information related to climate change impacts and adaptation, and Chapter 4 of this paper outlines approaches and suggestions for reporting information and progress on adaptation. For the purposes of this paper, we interpret the mandate in Article 13.7(b) to apply to the mitigation component of NDCs. However, Parties could report on progress toward implementing and achieving the adaptation components of their NDCs under Article 13.8 if they so choose.

3.2 Current Reporting Practices Relevant to Tracking Progress Made in Implementing and Achieving Commitments

To date, Annex I Parties under the Kyoto Protocol have had to provide the most information regarding progress toward their commitments. Under the UNFCCC, developed country Parties provide information on each action being undertaken using a tabular format in their BRs, report on progress toward their 2020 pledges, and provide additional information under NDCs, including GHG projections. Developing country Parties have more flexibility in reporting, providing information on actions undertaken and progress made toward implementation, but in less detail than Annex I Parties, and omitting some reporting elements, such as projections. There is no common reporting format used by non-Annex I Parties, although the Consultative Group of Experts (CGE) has provided templates to assist in reporting. The reference in the Paris Agreement's Article 13, paragraph 7(b), to reporting of progress and achievement applies to all Parties, but the details remain to be seen. A summary table comparing the existing reporting requirements with the reporting elements of the Paris Agreement is provided in Appendix B, Table B-2.

3.3. Experience, Approaches, and Suggestions

3.3.1. What: Content of Reporting

EXPERIENCE

Under the Cancun Agreements (decision 1/CP.16), it was agreed that developed countries would put forward quantified emissions reduction targets and developing countries would put forward nationally appropriate mitigation actions (NAMAs), which

include targets, policies, and actions. However, little guidance was provided on how to report progress. Moreover, the NAMAs—like the NDCs—comprise diverse types of contributions, including new types of goals (e.g., intensity and baseline scenario goals), policies, and actions. Further, some were communicated with insufficient information to understand the commitment.⁴⁷ This created new challenges for tracking progress and transparent reporting of progress achieved.⁴⁸

The accounting methods used for tracking progress will dictate in part what needs to be reported. If significant flexibility is provided, more detail, and accordingly reported information, will be required so that Parties' tracking of progress can be understood. The choice of accounting method, which will be determined in part by the NDC type, can have a significant impact on the assessment of target progress and target achievement.⁴⁹ International standards have been developed by international organizations for tracking and transparent reporting of progress, including the GHG Protocol Mitigation Goal Standard (for mitigation targets) and GHG Protocol Policy and Action Standard (for policies and actions).⁵⁰ However, guidance on accounting and reporting for tracking progress has yet to be developed under the UNFCCC for all new NDC types. Reporting on tracking progress will be informed by the forthcoming guidance from the UNFCCC on accounting, which will apply to Parties' second NDCs (with voluntary application to the first NDCs). It should be noted that methodologies for tracking and reporting progress will need to be accompanied by capacity-building efforts to apply them.

However, in the absence of accounting guidance for NDCs, we can still learn from existing experiences under both the Kyoto Protocol and UNFCCC. Parties have found that detailed information on expected GHG emissions reductions, estimated against baseline GHG emissions, can be helpful, especially for attracting investment.⁵¹ Parties have suggested that BURs are vague; lack clarity, detail, and definitions (e.g., in relation to mitigation actions, assumptions, and methodologies); and leave too much room for interpretation.⁵² This has been seen as a key challenge for identifying and reporting information on actions and their effects.⁵³

A survey of case studies on early experiences related to MRV of measures and policies found that good practice criteria include methods for quantifying emissions reductions; the inclusion of baselines, indicators, and results chains; adequate financial and human

resources and quality assurances processes to carry out robust accounting and reporting; and being based on internationally recognized methodologies and sources (e.g., the GHG Protocol Policy and Action Standard,⁵⁴ IPCC).⁵⁵ That being said, some Parties have highlighted the challenges associated with reporting detailed information and quantifying effects of actions, so greater capacity is certainly needed.⁵⁶

Some Parties also have noted a need for enhanced data, including projections. There remain significant data constraints and high uncertainties associated with national GHG inventories, which can create challenges when assessing the effectiveness of implementation.⁵⁷ Also, some Parties have found that conducting mitigation assessments requires baseline information of sufficient quality, as it serves as a reference for progress made.⁵⁸ Procedures for downscaling require significant expertise, which may not be available in all countries.⁵⁹ That being said, some Parties have recently suggested that information on both historical trends and projections of GHG emissions and removals should be reported.⁶⁰

APPROACHES

Reporting is relevant to the transparency of progress made in both implementing and achieving the goals of NDCs.

Progress made in implementation: Parties could be required or encouraged to provide information on

- actions, policies, and measures implemented or plans to implement since last reported that will contribute toward the implementation and achievement of the NDC;
- updated projections of net GHG emissions;
- the sectors and GHGs affected by each action, and the actions' quantitative goals and progress indicators;
- methodologies and assumptions;
- objectives of the action and steps taken or envisaged to achieve that action; and
- progress of implementation of the actions and the underlying steps taken or envisaged.

Progress made toward achievement: It will be necessary in many cases to gain better understanding of the NDC, as there is incomplete information about some of the NDCs.⁶¹ Per paragraph 27 of 1/CP.21, Parties will develop more guidance for enhancing the clarity, transparency, and understanding of NDCs. Until that is done, or if the final guidance is not sufficient for the basis of tracking progress, one option could be requiring additional information on the NDCs for the basis of

tracking progress. See Appendix C for a possible list of reporting elements, organized by the items in paragraph 27. Additionally, at a minimum, Parties would continue to report information on progress made toward NDC achievement according to the requirements of the Cancun Agreements. Another approach that would greatly strengthen reporting would be to require a more detailed set of information, depending on NDC type, accompanied by the use of an accounting tracking format for GHG targets, as outlined in Appendix D.

Projections: Developed countries should continue to be required to report projections, while developing countries could be encouraged to do so. To improve the understanding of global trends and what additional progress may be needed, as a contribution to the GST, it would be helpful to require all Parties to report projections, with discretion allowed for SIDS and LDCs or for developing countries that require capacity building until they are in a position to do so. Regarding the methodology for projections, common guidelines could be developed, or, alternatively, Parties could report the details and assumptions underlying their methods.

SUGGESTIONS

All Parties should be required to report additional information on their NDCs (beyond those in paragraph 27 of 1/CP.21) until sufficient guidance is further elaborated. (A possible list of reporting elements, organized by the items in paragraph 27, is provided in Appendix C.) Such an approach could address current reporting deficiencies. It would resemble an initial report under the Kyoto Protocol, which provides sufficient information about the Parties' commitment to be able to track progress toward it. Additionally, all Parties should report detailed information on common elements, as well as NDC-specific elements as relevant, of progress related to implementation and achievement. This would include the use of an accounting tracking format for those NDCs that contain GHG targets. Appendix D includes a list of possible information and a sample tracking format for GHG targets; these could be used to regularly report on progress toward achievement.

The enhanced transparency framework should be accompanied by capacity-building resources and opportunities to meet the need for enhanced data, including projections. The Capacity-Building Initiative for Transparency (CBIT) is an example of one such resource. Tracking progress and achievement depends on numerous data inputs. For example, some goal types (e.g., emissions intensity and baseline scenario goals) require non-GHG data inputs in addition to emissions data. Strong data collection systems, as well

as institutional arrangements for data sharing and management, and associated human and technical resources, will be needed. Some Parties may face challenges in collecting the requisite information, especially given the diversity of Parties' contributions. Capacity building, especially investments in institutional, human, and technical capacities for data management and GHG accounting, must be targeted accordingly. In addition, all Parties—with flexibility for those that lack capacity—should report emissions projections by gas, by sector, and in total. Capacity-building efforts should be provided for those requiring assistance in developing projections. It will be important for Parties to report projection methods, including assessment of effects, assumptions, and data sources for key drivers. Use of common methodologies would ensure consistency across reports.

3.3.2. When: Frequency of Reporting

EXPERIENCE

Parties have found that regular and more frequent reporting requirements under the Convention have led to greater capacity within government institutions, reducing the need to hire consultants. This has helped build and retain institutional memory.⁶²

The timing of reports also may have relevant lessons for the transparency framework. The Kyoto Protocol was a very different system that did not build in a cycle of increasing ambition over time. Reporting on progress from the first round of commitments was not aligned with the development of new commitments under the second commitment period. For example, true-up reports were due no later than January 2, 2016, which was three years after the beginning of the

second commitment period.⁶³ Any lessons that the reports might have provided came too late to influence commitments first put forward in Copenhagen in 2009 and later formalized in the Doha Amendment in 2012. In fact, initial reports used to facilitate the calculation of a Party's assigned amount for the second commitment period were requested before the true-up report for the first commitment period.⁶⁴ See Figure 4 for details.

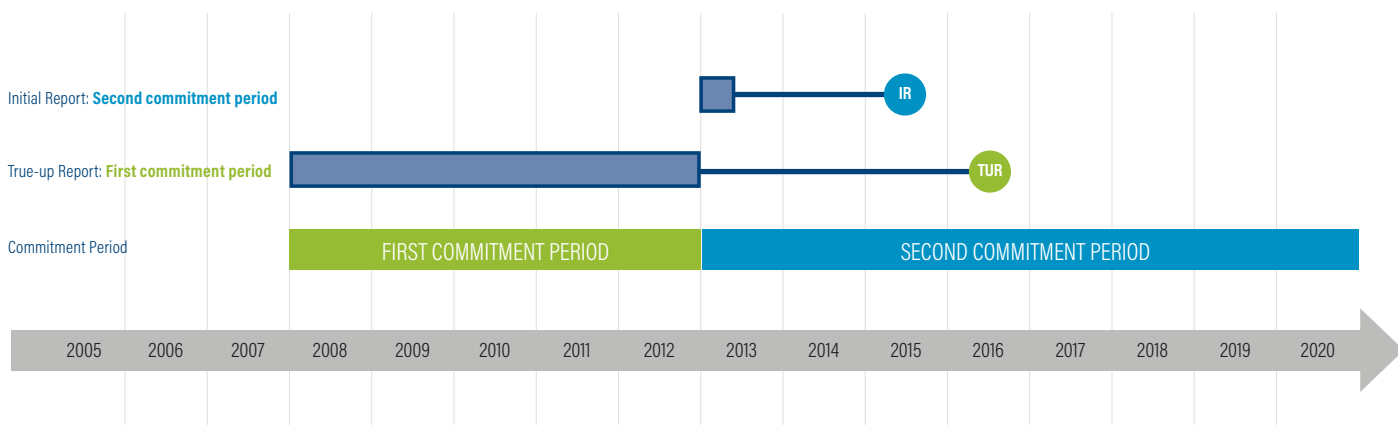
APPROACHES

The Paris Agreement requests that Parties report information necessary to track progress no less frequently than on a biennial basis, with discretion for those Parties that need more time based on their capacity. Developing countries are already required to report every two years through BURs, although not all countries have been reporting biennially yet.

Regarding due dates for reports, Parties should consider the timing of the GST as well as the NDC cycle to ensure that any lessons from the reports themselves are able to inform future NDCs. It also may be beneficial to build in time for the Secretariat to prepare any requested documents, as well as for the TER and FMCP. If Parties report information necessary to track progress biennially, this would not align smoothly with the five-year NDC and GST cycles. Parties may wish to consider requiring different information in their reports at different times to ensure information received is timely and fit for purpose without imposing undue burden and any duplication of reporting. This could mimic the system under the Kyoto Protocol, but with improvements to ensure information flows to certain events and moments in time.

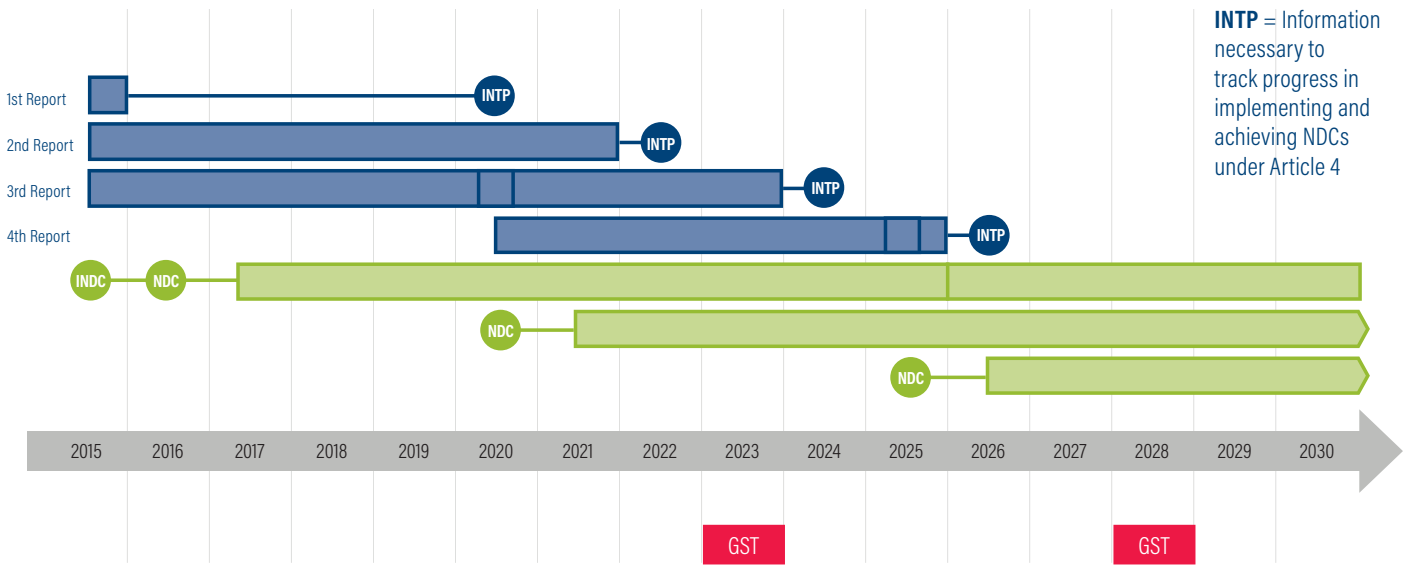
Figure 5 provides a hypothetical example of timing if the first report of information necessary to track progress were requested in 2020. The first transparency

Figure 4 | **Timing of the Initial Reports and True-up Reports**



Source: Authors.

Figure 5 | Hypothetical Timing of Information Necessary to Track Progress on Subsequent NDCs



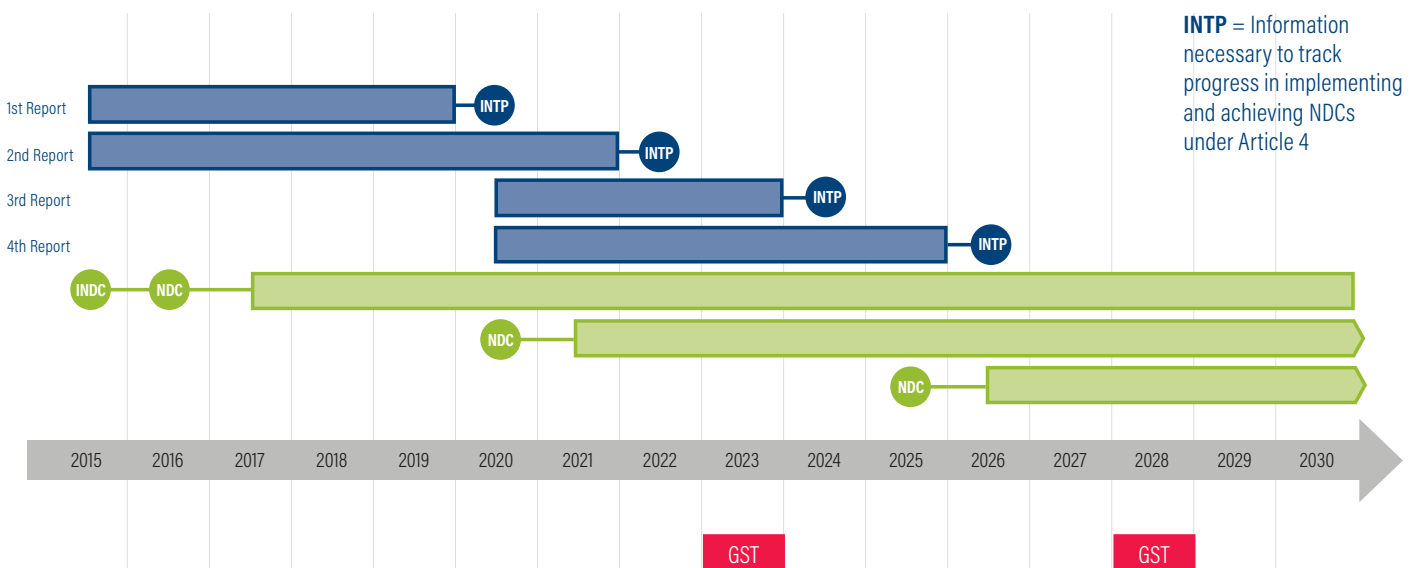
Source: Authors.

report could provide further details regarding the NDC to support the tracking of progress, akin to an Initial Report under the Kyoto Protocol, while the second report, due one year ahead of the GST, could provide further details on the status of implementation. The fourth report, which would follow the end of the first timeframe of NDCs for some Parties, could include relevant information to track progress on implementation and achievement, as well as further details related to the new NDC.

Alternatively, all reports could cover the same predetermined time period, tracking progress of

implementation back to the start of the most recent NDC (see Figure 6). In this case, each report could include the same type of information, perhaps with special attention in the transparency report following the end of an NDC timeframe. However, this approach could potentially reduce the relevance of the reported information in the context of the NDC and GST cycles. Another alternative would be for Parties to choose to report different types of information—either a prescribed set of information or at their discretion—in different transparency reports. This could increase flexibility and support alignment with national processes but also could complicate efforts to understand progress in aggregate and diminish comparability.

Figure 6 | Hypothetical Timing of Information Necessary to Track Progress on Most Recent NDC Only



Source: Authors.

SUGGESTIONS

Parties should continue to report detailed information on progress at least every two years. Regular reporting, while requiring increased capacity, can lead to institutionalization of reporting systems.

Each report could provide specific information relevant to the time period in which the report is produced rather than comprehensively covering all types of information every two years. This approach might appear more complicated, but it could prove more practical and less likely to create duplication of effort. The first report could provide information relevant to tracking progress. Reports due before a GST could require deeper elaboration of progress on implementation, and reports due after an NDC timeframe has ended could require elaboration of information to track achievement.

3.3.3. How: Format for Reporting

EXPERIENCE

Format: Parties have noted that a common tabular format (CTF) for reporting is a “practical approach” and “useful” for reporting on mitigation actions and effects.^{65,66} The use of such formats can aid comparability and consistency between reports. Some Parties have suggested that further guidance and examples in training materials could be helpful, as this would ensure they are using the formats accurately.⁶⁷ However, some Parties have noted that the templates designed by the CGE on the preparation of BURs were too detailed.⁶⁸ Some Parties also have stated that tabular formats are most appropriate for reporting quantitative information, restricting information to only essential elements; other formats would be necessary to report qualitative data.⁶⁹

APPROACHES

Format: Parties could continue to report with any required format they are currently using. Alternatively, to harmonize reporting, all Parties could be required to use a CTF, with flexibility on the level of information provided for those Parties that do not have the capacity to report detailed information. Capacity-building efforts should be targeted accordingly.

SUGGESTIONS

All Parties should be required to report using a CTF. Given the benefits of a CTF, organizing key information by relevant sector covered by the NDC (energy; industrial processes and product use; agriculture; land use, land-use change, and forestry [LULUCF]; waste; and other sectors or note if cross-sectoral) and by relevant GHG (e.g., CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆). All Parties should outline key methodological

assumptions. Flexibility could be provided to those developing country Parties that need it in the light of their capacity. Capacity-building efforts should focus on providing training in the use of the CTF.

4. REPORTING OF INFORMATION RELATED TO CLIMATE CHANGE IMPACTS AND ADAPTATION

4.1 Purpose and Importance of Reporting Information Related to Climate Change Impacts and Adaptation

Reporting on climate change impacts and adaptation can address multiple purposes. Many are noted in the introduction; however, there are additional purposes that are specific to reporting information on climate change impacts and adaptation.

PURPOSES OF REPORTING CLIMATE CHANGE IMPACTS AND ADAPTATION

Support the transparency framework of the Paris Agreement

Inform the global stocktake and Article 15 committee

Provide an opportunity for sharing best practices and lessons learned

Help track progress toward national goals

Raise the profile of adaptation, including domestically

Support planning processes at the national level

Identify institutional and support gaps and barriers

Recognize efforts made by countries domestically and with international support

The Paris Agreement adds a new layer of reporting expectations. While Article 13 of the Paris Agreement calls for reporting on climate change impacts and adaptation, Article 7 asks Parties to submit and regularly update “adaptation communications.” Clarifying how the Paris Agreement’s expectations for reporting under Article 13 and communicating under Article 7 relate

to one another, and how they can build on existing reporting practices, can help minimize the reporting burden and optimize prospects for achieving the multiple purposes outlined above.

4.2 Reporting Practices on Climate Change Impacts and Adaptation

Key vehicles for adaptation reporting and communications include NCs and NDCs, in which the majority of Parties voluntarily included an adaptation component. The National Adaptation Plan (NAP) process, although not established as an international reporting vehicle per se, also offers opportunities for Parties to share adaptation-related information.

NATIONAL COMMUNICATIONS

The adaptation reporting requirements contained in guidance for NCs differ for developed and developing country Parties. Guidance to developed country Parties requires them to include information on the expected impacts of climate change and an outline of the action taken to implement Article 4.1(b)⁷⁰ and (e)⁷¹ regarding adaptation. Parties may refer to integrated plans for coastal zone management, water resources, and agriculture, among others, and they are “invited to report on specific results of scientific research in the field of vulnerability assessment and adaptation.”⁷² In addition, Annex II Parties are requested to provide detailed information on progress made on “support programs” to meet the specific needs and circumstances of developing country Parties arising from the adverse effects of climate change.⁷³

Reporting on adaptation is not required for developing country Parties in their NCs, although they are encouraged to provide information on their vulnerability to the adverse effects of climate change and on adaptation measures being taken to meet specific needs and concerns arising from these adverse effects.

NATIONALLY DETERMINED CONTRIBUTIONS

In decision 1/CP.20, the Conference of the Parties (COP) invited all Parties to consider communicating their “undertakings in adaptation planning” or consider including an adaptation component in their intended nationally determined contributions (INDCs). There are no concrete guidelines for the types of adaptation information Parties should include in these communications. Although the majority of NDCs include an adaptation component, the form and content varies widely, including assessments of vulnerability and climate risk, descriptions of adaptation activities underway, and statements of adaptation goals, priorities, and plans.⁷⁴

NATIONAL ADAPTATION PLANS

The NAP process was established under the Cancun Adaptation Framework as a process to encourage Parties to identify medium- and long-term adaptation needs and develop and implement strategies and programs to address those needs. The NAP process was established for LDCs, but all developing countries are invited to initiate a NAP process. Although it is not primarily a communications or reporting vehicle, the NAP process can offer opportunities for Parties to report adaptation-related information, either in a specific document if Parties so choose, or through their NCs. Parties also may provide information on measures relevant to the NAP process. Parties are encouraged to undertake a regular review (at intervals they determine) of progress made and the effectiveness of the NAP process, and to provide that information in their NCs.⁷⁵

REPORTING/COMMUNICATING UNDER THE PARIS AGREEMENT

Reporting related to adaptation is outlined in Article 13.8 of the Paris Agreement and is closely related to elements of Article 7. It is noteworthy that in both cases, reporting and communicating are voluntary and applicable to all Parties. A comparison of reporting requirements on climate change impacts and adaptation under the existing system and the Paris Agreement is provided in Appendix B, Table B-3.

4.3 Experience, Approaches, and Suggestions

Reporting adaptation information under the Convention has a shorter history than reporting on mitigation. Reporting requirements are less well defined, and common metrics for adaptation are lacking; concrete lessons from past efforts therefore are difficult to identify. However, the following discussion attempts to clarify the ways in which the adaptation reporting elements of Articles 7 and 13 relate to one another, with a view to optimizing reporting efforts under the Convention.

4.3.1. What: Content of Reporting

EXPERIENCE

Adaptation reporting vehicles to date typically have contained both forward-looking information (e.g., goals, priorities, needs, and plans) and backward-looking information (e.g., actions, outcomes, and lessons). They also may include a description of national circumstances (with varying degrees of detail) and assessments of vulnerability and climate risk. Although aspects of these elements are commonly reported by Parties, the lack of a universal format and internationally agreed methodologies for tasks such as assessing adaptation needs and measuring progress toward goals is seen by some Parties (particularly the African Group) to be a significant gap in reporting efforts.⁷⁶

Language in the Paris Agreement and its accompanying decision is not definitive about the focus of communicating and reporting adaptation under Article 7 or Article 13, and the balance of forward- and backward-looking information is currently under negotiation. The Paris Agreement will establish new processes like the GST, which are to be informed by the adaptation actions of Parties. It is important to review the relevance of the information currently provided by Parties, how it is communicated or reported, and its timing to ensure the information is fit for purpose without creating undue burden. Some Parties have already begun to unpack and interpret what types of information would be needed to support the GST on adaptation as well as approaches to process and synthesize this information.⁷⁷

APPROACHES

The content question comes down to clarifying the specific forward-looking and backward-looking elements that need to be reported and/or communicated to achieve various purposes, the methodologies for assessing these elements, and how they link to the information outlined under Articles 7 and 13. This could be approached in multiple ways.

Parties could draw from a single set of guidelines that would apply to both Article 7 and Article 13. These guidelines would comprise both backward- and forward-looking elements as well as contextual elements such as national circumstances and impacts, vulnerabilities, and risks. Based on their capabilities and availability of data, Parties could decide what information they are able to update every two years under Article 13, every four years through NCs as currently done under the Convention, or every five years through their NDCs. Although this approach would maintain flexibility for Parties, it could limit the consistency and comparability of information, which could create challenges for identifying and sharing best practices and lessons learned. It also may create challenges for informing the GST if similar information is not provided at the same time. To help Parties prepare targeted, relevant, and timely information, the guidance could outline what information would be most practical and relevant for different time periods and to fulfill different purposes.

Alternatively, Parties could engage in separate reporting processes for sharing backward- and forward-looking information. In this case, Parties could prepare two distinct reports: one for backward-looking elements that would support the requirements in Article 13 and a second for Article 7's adaptation communications that would be focused on forward-looking elements. Contextual elements such as national circumstances and

impacts, vulnerabilities, and risks could be included in either or both. Depending on the specific information requirements and frequency for reporting the backward-looking elements for Article 13, this could increase reporting burden for some Parties. However, with more frequent reporting, this approach could improve overall transparency and facilitate an understanding of changing gaps and needs and adequacy of support.

Parties could agree to provide accompanying information on methodologies, assumptions, and limitations in their reports. They also could recommend specific methodologies and agree to common terminology and definitions to help reduce inconsistency between countries' information. Developing robust, common methodologies would take significant time and would need to leverage existing work.⁷⁸ However, if Parties are reporting information following highly diverse approaches and assumptions to assess vulnerability and risk, identify support needs, and measure adaptation progress, this will limit consistency and comparability of the information reported. Such limitations could reduce opportunities for sharing best practices, identifying lessons learned, and understanding overall progress on adaptation.

SUGGESTIONS

Parties should provide both forward-looking and backward-looking information on adaptation as well as contextual elements such as national circumstances and impacts, vulnerabilities, and risks. This would help achieve the multiple purposes of reporting, regardless of the specific vehicles or timing Parties use.

A single set of guidance for adaptation communications (Article 7) and transparency reporting (Article 13) would streamline the reporting process and reduce burden on Parties. This guidance should include practical instruction for common elements that should be provided depending on when and how the information will be submitted (see below), which can support consistency and completeness. The various communications and/or reports would then be recorded in a public registry and serve as an input to the GST at the appropriate time. (Precisely how this will occur, and the methodologies required to accomplish the goals of the stocktake, is yet to be decided.)

Parties should include more methodological details in their reports to enhance transparency and the potential for comparability. Parties could consider commissioning the development of new methodologies or selecting an existing or forthcoming set of methodologies for countries to follow.

4.3.2. When and How: Frequency of Reporting and Format

EXPERIENCE

Due to the voluntary nature of adaptation reporting and the flexibility for developing country Parties, the frequency and timing of adaptation reporting are uncertain. The adaptation communications referred to in Article 7 are to be updated and submitted “periodically,” and although reporting under Article 13 is to be biennial, there are ambiguities in the text.⁷⁹ Additionally, depending on how Parties choose to submit information on adaptation, frequency may already be predetermined. For example, if a Party chooses to submit an adaptation communication as part of its NDC, the frequency is already set at five-year intervals. However, that Party could still choose to report additional information through other channels and frequencies. This highlights how closely decisions around content, frequency, and vehicle are interlinked.

APPROACHES

Depending on the reporting vehicle agreed on by Parties, approaches to frequency of reporting include the following:

Information called for in Article 13 could be submitted every two years, or when possible, based on countries’ capabilities. Although this approach may increase the reporting burden on Parties, developing countries still would have flexibility in implementing this requirement, and greater frequency of reporting could improve transparency overall. Countries would have the opportunity to provide information to track progress on implementing and achieving the adaptation components of NDCs to complement reporting under 13.7(b).

Adaptation information could be included in NCs every four years. This would not create an additional reporting burden for developed countries but could increase the reporting burden for developing country Parties that are currently not on a four-year reporting cycle with NCs. If Parties report biennially under Article 13, during years when NCs align with transparency reports, they could be combined. Unfortunately, biennial reporting under the previous approach, or reporting every four years through NCs, are not aligned with the five-year NDC and stocktake cycles. This means that neither would provide a consistent timeframe between the last report and the GST (being either one or two years apart).

Adaptation information could be included in NDCs every five years. Submitting adaptation information every five years could ease the adaptation reporting

burden but might simply displace that burden onto NDC preparation if additional information (beyond what is currently included in NDCs) is required—for example, to inform the GST on overall progress on adaptation.

Adaptation information could be communicated on various timeframes through the NAP process. As Parties determine their own timelines and frequency for communicating information through the NAP process, this would be highly convenient. However, the timing would be unpredictable and inconsistent, and coverage would be incomplete, given that NAPs are undertaken only by developing countries. It would be challenging to synthesize information to understand overall progress.

SUGGESTIONS

Parties should retain some flexibility to choose both the vehicle (e.g., NCs, NAPs, or NDCs) for their adaptation communications and the timing for submitting information to fulfill reporting under Article 13. This approach minimizes the reporting burden and allows flexibility to select the vehicle and timing that best supports each Party’s priorities and purposes for reporting. In most cases, frequency alone does not necessarily impede the achievement of any particular purpose. However, reporting adaptation information through different channels and at different times will reduce consistency and could negatively impact the ability to inform the GST, which may be the most time-sensitive process. A single guidance document covering both Article 7 and Article 13 should highlight the value of selecting reporting vehicles and timing relative to the GST.

5. REPORTING INFORMATION ON FINANCIAL, TECHNOLOGY TRANSFER, AND CAPACITY-BUILDING SUPPORT PROVIDED AND MOBILIZED

5.1 Purpose and Importance of Reporting Information on Financial, Technology Transfer, and Capacity-Building Support Provided and Mobilized

Article 13.9 requires developed country Parties to provide information on financial, technology transfer, and capacity-building support provided to developing country Parties and requests that other Parties that provide support also should report this. This information serves a variety of purposes.

Although not explicitly included in the framework for transparency of support in Article 13, we also discuss the

PURPOSES OF REPORTING SUPPORT PROVIDED AND MOBILIZED

Support the transparency framework of the Paris Agreement
Inform the global stocktake and Article 15 committee
Enable the tracking of progress toward support commitments
Provide insight on whether support is delivered effectively
Enhance coordination for greater efficiency and effectiveness
Improve the predictability of support that enables long-term planning and improved effectiveness
Enable assessments of whether support is meeting countries' priority needs
Increase accountability to taxpayers in contributor countries
Enhance the quality of support over time by increasing information available to assess the effectiveness of interventions and learn from experiences

provisions of Article 9.5, the communication of ex-ante information related to provision and mobilization of financial resources by developed country Parties and other Parties that provide resources, as this is a related transparency provision. No purpose was elaborated in the Agreement for the communications under Article 9.5, and Parties may wish to define one.

Table B-4 in Appendix B provides an overview of relevant reporting requirements related to climate change support provided.

5.2. Experience, Approaches, and Suggestions

5.2.1. What: Content of Reporting

EXPERIENCE

Developed countries are required to report on support provided in their BRs and NCs. Some developing countries also provide support, but there are no provisions for them to report under the existing regime. Parties have used different methodological approaches in reporting support provided,⁸⁰ which has created challenges in terms of consistency and comparability.⁸¹ Specific areas of inconsistency identified in the literature include data granularity (some report activity-level data while others report in aggregate), definition and calculation of climate relevance (different approaches to reporting the share of funding for projects where

climate is only a partial focus), financial instrument (some report only grant equivalent flows while others include nongrant instruments at the face value), the point of measurement (reporting when funding is committed or actually disbursed), definitions of “sectors” and type of support (use of “other” or “multiple sectors” tags without additional detail, and differing categorizations of forest finance), exchange rates used, and if and how to report on reflows or projects that have returned money.⁸² Reporting guidelines have been improved, particularly with the development of CTF tables for reporting on finance provided.⁸³ Yet the lack of an agreed-upon definition within the UNFCCC of what counts as climate finance has led to variations in how climate finance is reported.⁸⁴ For example, a few countries include financing for coal projects in their climate finance reporting, which appears inconsistent with emissions reduction pathways necessary for meeting agreed temperature goals under the UNFCCC.⁸⁵

Under the existing regime, there is no requirement to report on private financial flows mobilized by provision of public support, with the BR requesting only that Parties “should report, to the extent possible.”⁸⁶ To date, only four Annex II Parties have included quantified estimates of their total private climate finance in their BRs, while Sweden included quantified examples.⁸⁷ This has hampered assessment of progress toward collective finance mobilization goals under the Convention, including the goal of jointly mobilizing US\$100 billion a year by 2020. Efforts to estimate mobilized climate finance have faced a variety of technical challenges.⁸⁸ In many cases, multiple actors, including developed countries, multilateral funds or development banks, the recipient country government, and the private sector will contribute support to a project or program. If each actor reports the full amount of finance mobilized, there likely will be double-counting. Some developed countries have voluntarily developed a common methodology for tracking and reporting on climate finance mobilized toward the \$100 billion goal and have reported jointly on their collective mobilization.⁸⁹

In addition to ex-post reporting on support provided, at COP 18, developed countries were invited to voluntarily submit information on their strategies and approaches for mobilizing scaled-up climate finance to \$100 billion per year by 2020.⁹⁰ A year later, at COP 19, developed countries were mandated to make submissions every two years on scaling up climate finance from 2014 to 2020, including available information on quantitative and qualitative elements of a pathway.⁹¹ The type of information reported has varied, but Parties have included very limited quantified information on expected levels of finance mobilization.⁹² Submissions

have included more qualitative information on efforts to scale up finance and priorities, which may be useful to recipients when preparing plans and accessing support. Some developed countries point to the limitations imposed by their domestic budgetary approval processes, which make it difficult to report projected levels of finance in future years. However, the OECD Development Assistance Committee (DAC) annual Survey on Donors' Forward Spending Plans, where DAC members and 23 multilateral agencies report ex-ante information on core country programmable aid, up to three years ahead, does show that forward-looking systems for projecting future support are possible.⁹³

APPROACHES

Support provided: The accompanying decision to the Paris Agreement states that in developing MPGs, the APA should take into account issues considered by the Subsidiary Body for Scientific and Technological Advice (SBSTA) on methodologies for reporting on financial information.⁹⁴ This SBSTA process can help determine the approach that should be taken on some of the challenges identified with the current reporting system discussed above.⁹⁵ Potential improvements are set out in Table 1. The SBSTA process is taking place in parallel with the APA process to develop MPGs for the transparency framework, and negotiators should work carefully to optimize the linkages between the accounting and reporting discussions.

In addition to improving on existing reporting criteria, the Paris Agreement includes several new commitments regarding the provision of finance, which it may be useful to include in reporting on finance provided. In reporting on finance provided and mobilized, Parties could describe how the provision of scaled-up financial resources contributes to achieving the aims of the Paris Agreement as set out in Article 2 and the aims for scaled-up finance set out in Article 9.4.

Support mobilized: The Paris Agreement makes the requirement to report on support mobilized mandatory.⁹⁶ The definition of mobilized support is not determined, and the SBSTA process should determine this. SBSTA and APA also will need to decide whether reporting on support mobilized should be done by individual Parties or collectively.⁹⁷ Collective reporting would reduce the risk of double-counting finance mobilized but would require significant coordination among developed country Parties. Joint reporting on finance mobilized in the context of the \$100 billion road map has shown this is possible.

Ex-ante reporting: In addition to reporting under Article 13, Article 9.5 requires developed country Parties,

and other Parties that provide finance voluntarily, to “communicate indicative qualitative and quantitative information on finance provided and mobilized, as applicable, including, as available, projected levels of public financial resources to be provided to developing country Parties.” The wording of the mandate is broad and flexible, meaning that the COP process to identify information to be provided in accordance with Article 9.5 will be important to determine the scope and detail of reporting required.⁹⁸ One approach would be to develop well-defined parameters, including requiring quantified estimates of finance to be provided in the next two years (at a minimum). However, given the legal limitations many countries face, a legal circumstances-based approach may be more suitable, where countries report as much as possible and have an onus to compensate for limitations in quantitative data with enhanced qualitative information. Parties could draw lessons and data from the OECD-DAC's annual Survey on Donors' Forward Spending Plans.

SUGGESTIONS

In Table 1, we propose approaches that could be adopted to improve consistency and transparency of reporting on support provided.

In their overall reporting on support provided and mobilized, Parties should include a description of how the provision of support contributes to achieving the aims of the Paris Agreement as set out in Article 2 and a description of how provision of finance meets the aims set out in Article 9.4.

Parties should consider collectively reporting on finance mobilization. This could address challenges in attributing private finance mobilized to individual entities and the risk of double-counting. Parties would need to agree on a common approach and a collective report on finance mobilized might need to be submitted separately from the rest of the report on finance provided. Parties should be clear about the scope of reporting on collective mobilization, particularly if not all Parties providing finance join the effort.

Reporting on support mobilized through public interventions should take a conservative approach to ensure credibility and trust. Given the need to mobilize and align trillions of dollars of investments to address climate change, efforts to assess mobilization should focus on identifying lessons in how public funds can be used most effectively to catalyze private investment, rather than as a strict means of accounting private finance toward specific mobilization goals. Focusing mobilization reporting on identifying best practices can avoid creating the perception that it is merely a way of

Table 1 | Potential Approaches to Addressing the Challenges Identified with Current Reporting

ISSUE	CURRENT PRACTICE	RECOMMENDED IMPROVEMENTS
Data granularity	Report activities according to own approach, with some aggregating activities	Report on each project/program separately
Definition of climate relevance	Use own definition of "climate specific" and report underlying definitions and methodologies utilized	Follow a common definition, potentially determined by the SBSTA process, which may draw on or adopt existing approaches (e.g., multilateral development bank common methodology)
Calculation of share of funding reported	Report on the share of a project counted through their own methodology	Include the coefficient used for calculating the share of the project reported in the CTF, either in the table itself or the documentation box
Financial instrument used	Report according to their own determination, but explain underlying definitions and methodologies utilized	Report both face-value and grant-equivalent amounts
Status	Committed or disbursed	Report disbursed only
Definitions of "sectors" and "type of support"	Report according to their own definitions	Use common definitions (including, for example, what type of support forest finance should be classified as); for multitagged activities, report proportions of funding to different categories
Exchange rates used	Use self-selected exchange rates to convert to USD, if necessary, with explanation of the methodologies and rates utilized	Include source(s), date(s), and justification for methodologies and exchange rates used to convert to USD, if necessary
Reflows and projects that have returned money to providers	Report at their discretion	Must report on reflows from nongrant instruments and on projects that have returned money due to being canceled or under budget, etc.

Source: Authors.

diverting attention from the role of public funding in meeting mobilization goals, thereby building greater trust and allowing lessons on private sector engagement to be disseminated more effectively.

A legal circumstances-based approach could be a practical approach regarding ex-ante communications on finance to be provided and mobilized. This could provide flexibility for countries with budget processes that restrict their ability to project finance multiple years in the future. Countries whose national budgets do allow this can report quantified projections for the next two years (at a minimum), while countries with restrictions would report as much as possible, and compensate by providing more comprehensive qualitative information. Countries should draw on data and methodologies used in their reporting to OECD-DAC for the Survey on Donors' Forward Spending Plans.

5.2.2. When: Frequency of Reporting

EXPERIENCE

Timeliness in reporting could be improved by many Parties (see Chapter 7). In addition, strategies and approaches (S&A) reporting has been far from comprehensive. Out of 42 Annex I country Parties, 34 submitted S&A information by COP 19 in response to a voluntary invitation to submit information.⁹⁹ At COP 19, Parties were given a mandatory request to prepare biennial submissions on their updated S&As, although the exact due date was not specified. In 2014 and 2016 the number of Annex I country Parties submitting S&As remained at 34.¹⁰⁰

Developed country reporting on support provided in BRs is disaggregated by individual years. Parties are required to report on the previous calendar or financial years before the submission deadline (i.e., for reports due January 1, 2014, CTF tables covered the years 2011 and 2012).¹⁰¹ This means there is a two-year time lag in data for the earliest of the two years reported in each BR.

It would be unreasonable to expect full data to be available for the previous year if reporting is due on January 1, as is currently the case. Although most Parties report on calendar years, three Parties use their fiscal years (which vary by jurisdiction), which makes aggregation and comparability difficult.¹⁰²

APPROACHES

Frequency: Parties should maintain their current biennial frequency of reporting. Reporting could be more frequent—for example, annually—as with national emissions inventories, although this would increase the burden on Parties. For ex-ante Article 9.5 communications, this could provide flexibility for those parties whose budgetary systems only allow short-term (i.e., one year ahead) projections to still fulfill reporting requirements. For ex-post reporting, annual submissions could reduce the maximum lag time between provision of support and its being reported, from the current two years to one year.

Time series: One approach to improve consistency would be to require reporting by calendar, not financial, year (either is acceptable under the current system), although this may present challenges for countries whose fiscal years are not aligned with the calendar year.¹⁰³

Timing: Decisions also will need to be made on timing of submissions; done well, this could reduce the time lags in reporting. For example, if the due date for ex-post reporting on support provided is moved from January 1 to later in the year, it would allow Parties to report on the prior calendar year. This would reduce the maximum time lag between provision of support and its being reported to the UNFCCC to less than two years. Parties also could consider whether ex-ante communications and ex-post reporting should be due at the same time.

SUGGESTION

Countries should report finance provided biennially on the previous two calendar years and ex-ante on the following two calendar years. Reporting should be by calendar, not financial, year to increase consistency of reporting among countries. Ex-ante communications and ex-post reporting should be due at the same time to allow forward- and backward-looking reporting periods to overlap. The due date for reporting could be moved from January 1 to later in the year, which would allow Parties to report on the prior calendar year, reducing the time lag in reporting.

5.2.3. How: Format or Methodology of Reporting

EXPERIENCE

Reporting on support provided in NCs and BRs includes both qualitative and quantitative elements. The CTF that was introduced with the BRs has been a useful innovation, encouraging developed country Parties to report data in a common, if not yet fully comparable, way. The tables represented an advance from the reporting tables on support provided required by NCs, which operated at a more aggregate level and requested only dollar amounts for multilateral contributions and dollar amounts for thematic and (limited) sectors for bilateral and regional contributions.¹⁰⁴ There is also a documentation box where parties must provide an indication of what new and additional financial resources they have provided and how they have determined this.

The efficacy of CTFs in improving comparability of information is limited because Parties use them in different ways with often inadequate explanation of the reporting methodologies and approaches used (see the discussion of what to report above). Although the BR mandate states that countries “shall report in a rigorous, robust and transparent manner the underlying assumptions and methodologies used to produce information on finance,” the CTF guidelines primarily use the term “should” when requesting explanation of methodologies or additional details for how data are reported in them, and several Annex II Parties do not fill in the documentation boxes, particularly the box indicating what “new and additional” financial resources have been provided, and clarifying how this has been determined. In 2015, based on experiences with the first BRs and recommendations from the Standing Committee on Finance, the COP updated CTF finance tables to create additional fields in the documentation box where countries should provide information on their definitions or methodologies used for key reporting parameters.¹⁰⁵ The reforms also adjusted the parameters for the “status” column to bring reporting approaches in line with other international financial reporting methodologies. These amendments will come into force for the third BRs, due on 1 January, 2018, so they have not yet been tested. The mandate to provide explanations of the different parameters remains a “should,” meaning they may not be fully completed by Parties.

One of the challenges in other reporting regimes has been repeated changes to reporting scope and methodologies, which impairs the ability to compare trends over time.¹⁰⁶ The CTF amendments primarily supplement existing information meaning, all else being equal, data still will be broadly comparable with

Table 2 | Recommended Improvements to Existing Common Tabular Format Templates

TABLE(S)	PARAMETER	POTENTIAL IMPROVEMENT
All finance tables	Financial instrument used	Add a "grant-equivalent amount" column in addition to the amount column. For funding tagged as cross-cutting, provide separate amounts attributable to adaptation and mitigation.
	Documentation box	"Shall" not "should" for reporting information on the assumptions and methodologies used.
Finance provided through bilateral, regional, and other channels	"Country/region" and "project/programme"	Add separate columns for recipient "country/region" and "project/programme."
	Capacity building and technology	Add columns for capacity building and technology. If the finance reported has a component that is capacity building or technology transfer, check the applicable column(s). Additional detail can be provided in the tables for capacity-building or technology transfer support provided in the funding source column, possibly with a common identifying label or number linking the two.
	Mobilized finance	Add column or table to allow reporting on finance mobilized by specific public finance interventions for the table on public financial support through bilateral, regional, and other channels.
Technology	Status	Add option of "ongoing" alongside "planned" and "implemented"
Capacity building	Source of funding	Add column for information on the funding source for the program or project.
	Status	Add column for information on the status of the program or project, with options of "planned," "ongoing," and "implemented."

Source: Authors.

previous BRs, allowing trends to be analyzed over several reporting cycles. This iterative and incremental process therefore may be a good model for enhancing transparency provisions under the PA.

APPROACHES

Enhancing the CTFs could increase consistency in how support provided is reported. Indeed, the COP decision accompanying the Paris Agreement says that MPGs should consider "enhancing delivery of support [. . .] through, inter alia, the common tabular formats for reporting support."¹⁰⁷ Approaches to what is reported were set out in Table 1. Potential improvements to existing CTF templates, to be considered in combination with these approaches, are outlined in Table 2.

In addition, the ex-ante Article 9.5 communications and reporting on finance provided and mobilized might be done in the same submission, which would reduce duplicative explanations and also the reporting burden. Consideration would need to be given to whether the amount of information to report at one time is manageable.

SUGGESTIONS

CTFs could be enhanced by adopting the suggested improvements in Table 2. The ex-ante communication and ex-post report on support provided and mobilized should be made as a joint submission to reduce duplication and reporting burden.

5.2.4. Who: Parties Responsible for Reporting

EXPERIENCE

Currently, only Annex II Parties are required to report on support provided to non-Annex I Parties in their NCs and BRs. The other 20 Annex I Parties that are not in Annex II are not required to report on finance provided, although in their second BRs, 11 and 13 countries did for the years 2013 and 2014, respectively.¹⁰⁸ This creates a challenge for tracking progress toward finance commitments, most prominently the goal of mobilizing \$100 billion per year by 2020, since the commitment is made by "developed country Parties," a grouping that has not been formally defined but may include more than Annex II Parties.¹⁰⁹ Indeed, the 2016 "Roadmap to US\$100 Billion" was produced by all Annex II Parties plus 15 Annex I Parties not included in Annex II, suggesting that they also self-define as part of the commitment.¹¹⁰ Of the 15 countries, all but 2 have voluntarily reported on climate finance provided in their second BRs. A more systematic and comprehensive reporting requirement covering all developed countries would help address data gaps needed for tracking progress toward collective finance goals. The mandate for S&As reporting also applies to "developed country Parties," aligning with the language for the \$100 billion commitment.¹¹¹ However, only 34 of 43 Annex I Parties have made these submissions.¹¹²

Several non-Annex I Parties also provide climate-related support, but there are no formal channels designed for them to report this currently under the UNFCCC. Three Parties have used their BURs to describe support they have provided to developing countries, with the Republic of Korea listing finance provided in a detailed tabular format bearing some similarities to the CTF. Seven non-Annex I Parties are contributors to the Global Environment Facility, and nine have made pledges to the Green Climate Fund, both of which are part of the Financial Mechanism of the UNFCCC and the Paris Agreement. In addition, two non-Annex I Parties have reported climate-related official development assistance (ODA) through the OECD's Creditor Reporting System.¹¹³ Several other non-Annex I Parties provide climate-related support bilaterally and/or through national, regional, and multilateral development banks. An important consideration if expanding reporting on support provided is that some reporting parameters that work for Annex II Parties may not be politically appropriate to developing countries that provide finance (for example, OECD-defined ODA).¹¹⁴

Reporting modalities for finance provided through multilateral channels also is not well defined under the current system. The governing bodies of the operating entities of the Financial Mechanism to the Convention—the Global Environment Facility (GEF) and the Green Climate Fund (GCF)—are required to report to each COP session, while the Adaptation Fund Board is required to submit an annual report to the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (CMP). They are not required to follow standard methodologies or reporting formats.¹¹⁵ Annex II Parties are required to report contributions through multilateral channels in their NCs and BRs, but reporting practices vary. Some Parties report their entire (“core/general”) contribution to multilateral entities, while others attempt to calculate only the climate-specific amount.¹¹⁶ For contributions to multilateral climate funds this is not a problem, as there is no difference between core/general and climate-specific support, but for institutions that support a range of activities, most notably the multilateral development banks (MDBs), assessing the climate-specific amount can be complicated. This results in a significant data gap, which makes assessing progress toward collective mobilization goals challenging.

MDBs have jointly self-reported their climate finance provided to developing countries since 2011¹¹⁷ but have no mandate to report formally to the UNFCCC. The joint climate finance reporting methodology developed by MDBs differs from the OECD-DAC Rio markers, so

bilateral data from Parties' reports and MDB data are not comparable. Some researchers and civil society observers consider the MDB methodology to be more suitable for climate finance reporting than the OECD-DAC Rio markers.¹¹⁸ The point of measurement also differs; MDBs report on their outflows, whereas Annex II Parties report on inflows to multilateral entities. If the aim of the transparency framework is measuring support flowing to developing countries, outflows may be more appropriate to report, but if the aim is measuring effort taken by developed countries, inflows also may be useful to track.

APPROACHES

Developed country Parties: The Paris Agreement does not contain annex lists of Parties and refers to “developed country Parties” rather than Annex II Parties. There needs to be clarity on which Parties are included in the term “developed country Parties.” At a minimum, Parties must maintain at least the frequency and quality of reporting, in accordance with respective obligations under the Convention. Other developed country Parties that are covered by the collective finance mobilization goal reaffirmed in COP decision 1/CP.21, paragraph 53, also could be required to report on support provided and mobilized under the Paris Agreement. This would close the coverage gap whereby certain support commitments fall jointly on all developed country Parties, but not all Parties are required to report on support provided. Another approach would be for the CMA to determine which Parties should be classed as developed country Parties for the purposes of reporting on support provided and mobilized. However, this would go against the spirit of the Agreement allowing national determination of capabilities and would limit flexibility for additional countries to self-define as “developed country Parties” over time. A more flexible approach therefore would allow any Parties that self-define as “developed country Parties” to be required to report on support provided and mobilized.

Other Parties: The Paris Agreement provides flexibility for other Parties that provide support to report on this voluntarily. A key question is whether these Parties that choose to report should use the same MPGs as developed country Parties, with the understanding that they do so voluntarily and with flexibility, or whether they require different MPGs.¹¹⁹ Developing an additional set of MPGs could allow reporting to be more tailored to other Parties' circumstances but would increase the workload of APA and may lock Parties into a specific reporting approach, preventing them from enhancing their reporting over time as they develop capacities and experience.

Multilateral entities: The Paris Agreement does not specify any means for multilateral entities to report on finance provided and mobilized; however, it does refer to the GST needing to “take into account the relevant information provided by developed country Parties and/or Agreement bodies on efforts related to climate finance,”¹²⁰ which could be interpreted to include the operating entities of the financial mechanism of the Agreement, namely the GEF and GCF. There are a variety of potential approaches to reporting multilateral flows. Continuing current practice would require Parties to report individually on finance through multilateral channels, using their own methodology. An improvement on this would be to require a common methodology for calculating climate-specific inflows and/or calculating the attributed share of climate-specific outflows. Alternatively, multilateral entities could be invited to report on support they have provided, using either their own methodologies or a common methodology to be determined.

SUGGESTIONS

In addition to all developed country Parties that are already required to report on support provided under the Convention, reporting should be mandatory for other developed country Parties that are covered by the collective finance mobilization goal reaffirmed in COP decision 1/CP.21, paragraph 53. Other Parties that choose to self-define as “developed country Parties” also could report as such.

“Other Parties that provide support” should use the same MPGs as are required of developed country Parties to reduce the duplication and stasis associated with two reporting systems, but with the clear understanding that they do so voluntarily and with flexibility.

For reporting on finance provided through multilateral channels, many of the multilateral entities are not subject to the direct authority or guidance of the COP. Therefore, it would be more realistic to expect Parties that report on finance provided to report individually on their finance through multilateral channels. For finance provided to multilateral entities that also provide finance for nonclimate activities, or that mobilize additional finance from capital markets, Parties should report on both core inflows and climate-specific outflows, using a common methodology for calculating climate-specific inflows, which could be agreed upon in conjunction with the SBSTA, relevant multilateral entities, and with the approval of their governing bodies. By reporting on both inflows and outflows, it improves transparency while capturing the mobilization effect of multilateral entities.

6. REPORTING INFORMATION ON FINANCIAL, TECHNOLOGY TRANSFER, AND CAPACITY-BUILDING SUPPORT NEEDED AND RECEIVED

6.1 Purpose and Importance of Reporting Information on Financial, Technology Transfer, and Capacity-Building Support Needed and Received

Article 13.10 states that developing country Parties should provide information on financial, technology transfer, and capacity-building support needed and received. Although the introduction outlines the overall purpose of reporting, including the aims of the transparency framework, there are specific purposes for reporting information on support needed and received.

PURPOSES OF REPORTING SUPPORT NEEDED AND RECEIVED

Support the transparency framework of the Paris Agreement

Inform the global stocktake and Article 15 committee

Provide insight on whether support is used effectively

Enable the tracking of progress toward support commitments

Enhance coordination for greater efficiency and effectiveness

Help inform the level of future support goals

Enable assessments of whether support is meeting countries' priority needs

Enhance quality of support over time by increasing information available to assess the effectiveness of interventions and learn from experience

Help strengthen the case to taxpayers and policymakers in contributor countries for continued provision of support

Table B-5 in Appendix B provides additional information with a comparison of current reporting requirements under the UNFCCC and requirements under the Paris Agreement.

6.2. Experience, Approaches, and Suggestions

6.2.1. What: Content of Reporting

EXPERIENCE

Under existing mandates, reporting on support needed and received is voluntary. Developing country reporting on support needed and received is not mandatory under the Paris Agreement either.¹²¹

Most developing country Parties have reported information on their support needs in their NCs, BURs, and NDCs, although the level of detail has varied.¹²² Eleven Parties reported quantitative information on total needs in their BURs, and six reported quantified needs in a tabular format for specific activities.¹²³ Developing countries also have used their NDCs; the UNFCCC National Economic, Environment and Development Study (NEEDS) project; and TNAs to report on support needs.¹²⁴ Some groups of countries have reported on needs in broadly similar ways. For example, most African countries provided quantified breakdowns of how much finance they estimated would be required from international sources and how much they would be able to raise domestically in their NDCs.¹²⁵ Assessments and tracking systems for climate spending from domestic budgets, although not mandated as part of UNFCCC reporting requirements, have been used by some developing countries as a way of highlighting their efforts and needs for partnership support.¹²⁶

Reporting on support received has been less widely practiced and, as with needs reporting, approaches and comprehensiveness vary widely.¹²⁷ As of June 2016, only 20 Parties provided summary information on climate finance received over a specified period in their BURs, of which 11 reported quantified amounts for specific projects and activities and 5 also included information on climate spending from their domestic budgets. Other Parties provided more partial information (e.g., covering only certain funds/contributors and/or projects, or not including quantitative information).¹²⁸ Developing countries have reported a variety of challenges they face in tracking support in their countries. These include technical challenges similar to those faced by countries reporting on support provided, such as inconsistent definitions and criteria to define climate finance and inconsistent markers, indicators, and codes to characterize data. However, they also include political and capacity challenges, such as inadequate domestic institutional arrangements, technical processes, and capacity to track support; lack of information on finance provided by nongovernmental actors; limited availability of private financial data; lack of transparency and predictability from contributors of support; limited use of developing country national systems; and administrative requirements set by contributors of support.¹²⁹

APPROACHES

Focusing on transparency rather than consistency in the short term might be less burdensome to Parties. Common reporting formats could enhance consistency, but given the challenges many developing countries face in collecting relevant information,¹³⁰ a focus on ensuring transparency in reporting, rather than requiring use of a consistent approach from the outset, may be more practical and less burdensome. A facilitative framework, drawing on support through the CBIT and other means, can improve countries' ability to report in a more consistent way over time. A tiered system of reporting for support received, with Parties reporting more detailed information according to capacities, also could enable Parties to progress to more detailed reporting over time.¹³¹

Support needed: The lack of a clear definition of climate finance creates challenges for elaborating climate support needs. Because there may be considerable overlap between climate and development objectives, it can be challenging to differentiate between climate-specific and broader development needs. The heated debate surrounding this issue within the UNFCCC and multilateral climate funds suggests that agreeing on a clear methodology for determining climate support needs may not be possible in the short term. Nonetheless, reporting support needs can be a useful way of signaling priorities to contributor countries to inform their allocation decisions. The information also may be used by the private sector to identify investment opportunities. In the absence of a formal methodology, Parties could draw on preexisting reporting on climate finance needs contained in NDCs, NAPs, NAPAs, and TNAs.

Support received: Unlike the SBSTA process for finance provided and mobilized through public interventions, there is no mandate to develop accounting modalities for finance received. Some observers have proposed developing full accounting modalities for finance received.¹³² Even in the absence of a specific modality for accounting for finance received, the outcomes of the SBSTA process nonetheless may be useful in informing the development of MPGs for reporting on finance received by developing country Parties. At a minimum, Parties should continue reporting on support received from the GEF, developed country Parties, the GCF, and multilateral institutions as in the BURs. They also might report on support received from other Parties that provide finance, which would align with the Article 13.9 encouragement that other Parties that provide support should report on it. In addition, Parties could report voluntarily on finance from their domestic budgets used for implementing the Paris

Agreement and their NDCs, as currently done by some Parties in their BURs and NDCs. This could ensure that developing country Parties receive better recognition for their domestic efforts.

The COP decision accompanying the Paris Agreement notes the need, in developing MPGs for transparency, to consider “enhancing the reporting by developing country Parties on support received, including the use, impact and estimated results thereof.”¹³³ However, there is currently no mandate to work on guidelines for reporting on use, impact, and estimated results of support. Parties may wish to consider whether guidelines would be useful to improve consistency and reduce the burden on countries to develop their own approaches.¹³⁴

SUGGESTIONS

Parties should draw on information in their NDCs, NAPs, NAPAs, TNAs, adaptation needs assessments, and other sources for reporting on support needed. By using existing sources, Parties can avoid duplicating work and ensure internal consistency in needs reporting.

Parties should adopt a tiered system of reporting for support received, according to their capacities. Parties ideally should report on all climate support received, but as part of the tiered approach, they would prioritize reporting on support received from developed country Parties and the operating entities of the financial mechanism of the Agreement (to align with current practice in BURs). They would report on support from other Parties and multilateral institutions as their capacities develop over time. They also should voluntarily report on finance from domestic budgets for implementing the Paris Agreement and NDCs, which would help in assessing progress toward the overall goals of the Agreement.

Parties should consider the need for guidelines on reporting on the use, impact, and estimated results of support received. Guidelines, and potentially methodologies and tools, could help build countries’ capacities and promote consistency. One approach would be to draw on lessons from results-reporting methodologies used by operating entities of the Financial Mechanism and other multilateral climate funds. Aligning reporting approaches with existing funds could improve countries’ readiness to access finance from such entities. As part of reporting on use, impact, and results of support received, Parties could make reference to developed countries’ reporting on support mobilized from public interventions and, if applicable, discuss their domestic funding and efforts to create an enabling environment for private finance mobilization to ensure these efforts are taken into account.

6.2.2. When: Frequency of Reporting

EXPERIENCE

In addition to the general challenges with timely submission of NCs and BURs (see Chapter 7), developing country reporting on support received in BURs often has aggregated data across several years,¹³⁵ which reduces comparability both between countries and with developed countries’ reporting on support provided.

APPROACHES

Frequency: Parties should at least maintain the existing biennial reporting requirement for all Parties except LDCs and SIDS.¹³⁶ LDCs and SIDS have particular flexibility on the frequency of their reporting, which is important given their limited capacities, but flexibility also creates the risk that, if they are not reporting in the same way or with the same frequency as other developing countries, their needs may be overlooked.¹³⁷ Capacity-building support therefore will be important to enable their reporting under the Paris Agreement to become more timely.

Timing: Report submission due dates could be aligned with those for reporting on support provided and mobilized. This approach could improve consistency and comparability. (If current reporting practices are continued, reports would be due in December.) Although a system of double-entry bookkeeping might be technically challenging,¹³⁸ efforts to compare data on support provided and received could help identify gaps and inefficiencies, promote better accountability, and ensure that excessive resources are not being lost to intermediaries before reaching recipient countries. Alternatively, reports could be due sufficiently in advance of the due date for ex-ante communications on finance to be provided to allow the latter to take support needs into account in setting priorities. However, this would prevent the alignment of time periods with reporting on support provided.

Time series: Current practice does not define the temporal scope of reporting on finance needed or received. One approach to improve consistency would be to set a specific time period for which countries should report. This could be the previous two years of support received, which would align with the scope of reporting by developed countries on support provided. Reporting on support needs also could be focused on a specific time period. However, this may not be appropriate given that most projects are multiyear and needs often are not limited to a narrow timeframe.

Table 3 | Recommended Parameters and Approaches for Using a CTF

TABLE	PARAMETER	APPROACHES
Support needed	Activity name	Name of project, program, or activity.
	Amount of financial resources needed	Amount needed. Including currency and equivalent in USD.
	Amount of financial resources received to date	Amount received. Including currency and equivalent in USD. Link to table on support received.
	Additional support needed	Amount needed, if applicable. Including currency and equivalent in USD.
	Category of support	Finance, technology transfer, capacity building.
	Type of support	Adaptation, mitigation, cross-cutting.
	Sector	Energy, transport, industry, agriculture, forestry, water and sanitation, cross-cutting, other.
	Preferred financial instrument (if financial support)	Grant, concessional loan, nonconcessional loan, equity, other.
	Project/program/activity status	For which support is needed: ongoing, planned, completed.
	Expected timeframe for activities	Dates or number of months/years.
	Additional information	Estimated adaptation and mitigation outcomes. How activities contribute to achieving NDC and implementing NAP.
Support received	Channel	Bilateral by country/entity. Multilateral by fund/entity.
	Project/program name	Name, if available.
	Institution receiving funds	Name, if available (e.g., the implementing entity).
	Amount	Amount received. Including currency and equivalent in USD.
	Funding status	Committed or received. (Separate columns.)
	Project/program status	Planned, in progress, or completed.
	Type of support	Adaptation, mitigation, cross-cutting.
	Technology transfer or capacity-building elements	Columns for capacity building and technology transfer. If the finance received has a component that is directed at capacity building or technology transfer, check the column. Additionally, provide information on the nature of the support provided and the proportion of the amount for this.
	Financial instrument	Grant, concessional loan, nonconcessional loan, equity, other.
	Sector	Energy, transport, industry, agriculture, forestry, water and sanitation, cross-cutting, other.
	Additional information	Report, as appropriate, on activity details, including the use, impact, and estimated results.
Documentation box	Information on the underlying assumptions and the methodologies used, including information on the following reporting parameters: "funding status," "project/programme status," "financial instrument," "type of support," and "sector" and an indication of whether they consider financial resources received new and additional pursuant to Article 4, paragraph 3, of the Convention.	

Source: Authors.

SUGGESTIONS

Developing countries' reports on finance needed and received should be due at the same time as reports on finance provided and mobilized to allow consistency and comparability. (Reporting timelines are discussed further in Chapter 7.)

Developing countries should focus on reporting on the previous two years of support received, which would align with reporting by developed countries on support provided. Reporting on support needs would not need to be temporally bound.

6.2.3. How: Format and Methodology for Reporting

EXPERIENCE

Reporting on support needed and received in NCs and in BURs includes both qualitative and quantitative elements. There are no common reporting tables for developing countries. The UNFCCC Secretariat suggested examples of tables for reporting on support needs and support received.¹³⁹ Usage has been limited; the former has been used by only one Party, while the latter has not been used in any BURs so far.¹⁴⁰ The example table on support received focuses only on support for the preparation of BURs and activities contained within BURs, meaning that any support for other activities outside BURs would not fit the format. Nearly half of the BURs submitted to date use tabular formats to report on support needed and/or received, demonstrating that countries are not averse to using tables. Indeed, several countries used tables that contain similar elements to the CTFs used by developed countries, suggesting that it may be possible for some developing country Parties to move toward a comparable reporting format.

Reporting on support can be challenging given the overlap between finance, technology, and capacity building and the difficulty of separating them;¹⁴¹ often the latter two will have financial elements. Armenia, Ghana, and South Africa took a similar approach to addressing this issue: They created columns in their BUR tables on finance needed or received to specify the type of support needed (e.g., finance, technical, technology, and capacity building), allowing one or multiple columns to be checked, in addition to reporting a financial amount in a separate column. In some instances, countries then provided additional details of nonmonetized technology and capacity-building support needed or received in separate tables. This approach can help address overlaps in reporting on different types of support needed and could be used by developed and developing countries alike.

APPROACHES

CTFs for reporting on finance, technology, and capacity building needed and received could help increase transparency, consistency, and comparability. Although developing countries have more flexibility in how they report, guidance that leads to more comparable reporting formats could be useful for both recipients and providers of support. Parameters could build on experiences with existing guideline tables,¹⁴² country practices in NCs and BURs, third-party analysis,¹⁴³ and consideration of potential alignment with CTFs used by countries reporting on support provided (see Table 3).

SUGGESTIONS

Developing countries should be encouraged to use CTFs for reporting on finance, technology, and capacity building needed and received. Recommended parameters that should be included are set out in Table 3.

7. REPORTING AS A PACKAGE

This paper has treated each category of reporting separately, but there are additional considerations when designing the MPGs for reporting as a package. The TER and FMCP under the transparency framework are clearly instructed to cover some of the reporting categories, but not necessarily all.¹⁴⁴ Although some information need not be submitted in a preemptive response to the timing and processes of the TER and FMCP, it still may be in Parties' interest to provide the information in a timely and consistent manner. Parties may decide that information for each category of reporting could be submitted in a single document to minimize the potential burden of preparing multiple reports. Alternatively, categories of information could be reported through multiple documents to accommodate different timelines, time periods, and purposes. Although this would be more complicated, it could allow information to be responsive to domestic systems.

Frequency and timing are key considerations in reporting as a package. As noted throughout the previous chapters, in general, Parties will report information under Article 13 on a biennial basis as required by the Paris Agreement, with some possible variations regarding national inventories (possibly annually for developed countries) and adaptation (at least quadrennially as currently done by all Parties for NCs). Past developed country Party reporting under the Convention has not always been timely. Several Parties' NCs and BRs have been submitted months late,¹⁴⁵ and several Parties have submitted their main BR and their CTF at different times, making reviewing challenging. For most developing countries, NCs and BURs have not been regularly submitted. More than a decade has passed between the first and second NCs being submitted by most developing countries,¹⁴⁶ and less than one-quarter of developing country Parties have submitted a BUR as of the time of writing.¹⁴⁷

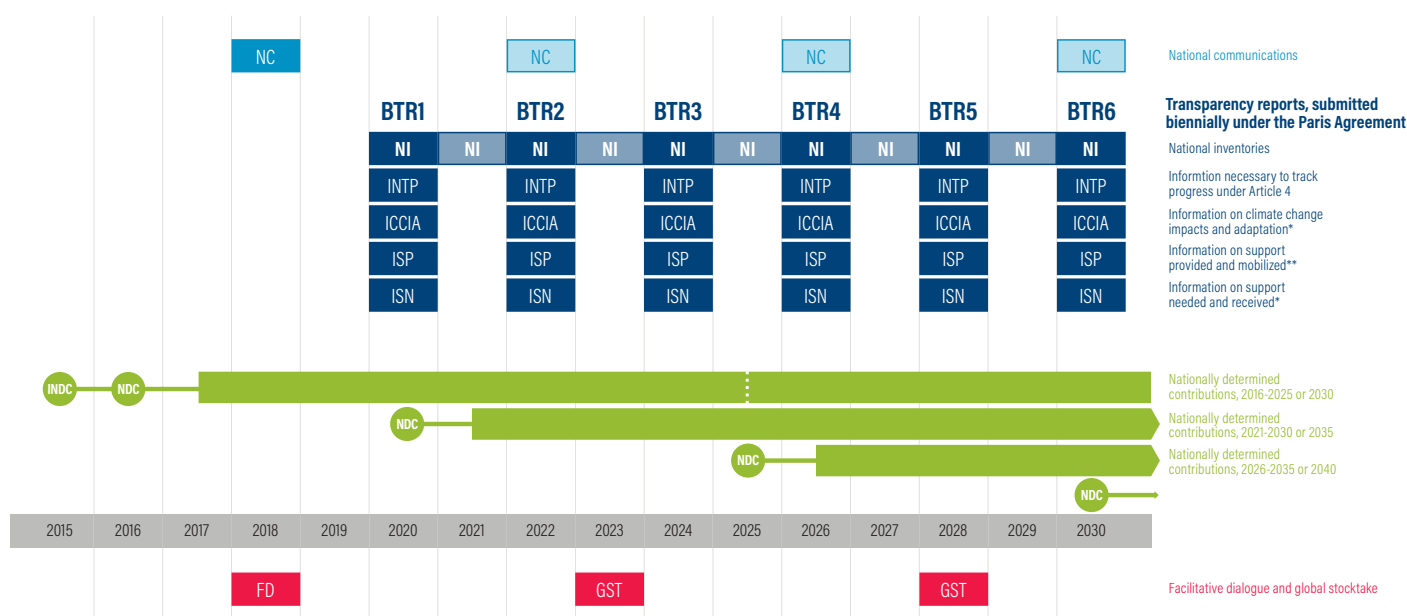
In addition to the criteria explored throughout this paper, reporting under the Paris Agreement should be timely, predictable, in alignment with review procedures (yet to be designed and agreed), responsive to the five-year cycles for NDCs and the GST, and well coordinated with the continued reporting of national

communications. Figure 7 presents a hypothetical timeline. When considering a possible approach to timing, further questions may be raised, including the following:

- As biennial reporting is already misaligned with the five-year cycles for NDCs and the GST, is there a need for specific reports, focused information within reports, or special review procedures of the latest information submitted before a GST to understand progress on implementing and achievement of NDCs and serve as input to the GST?
- When should reporting under the Paris Agreement supersede the existing regime? If Parties prepare their first transparency report in 2021 or 2022, does it cover the first NDC and the subsequent NDC for Parties that have submitted subsequent NDCs?
- What is the time period covered by the information, and is it the same for all information types?
- What is the time lag between the reporting period covered and when the report is due?
- What time of year is the report due, and how does that align with the review processes and the GST, as well as national considerations such as the fiscal year?
- When is the first report due (even- or odd-numbered year), and should the reports align with the timing of NCs? If alignment is ideal, will this impact preparation of information for the GST?
- If NCs maintain their current frequency and timing, a transparency report would be due in 2022, one year before the GST. Would this provide enough time to prepare for the first GST?

A more detailed examination of the linkages, trade-offs, and approaches involved in reporting is beyond the scope of this paper. However, Parties should consider the implications for the entire system of reporting when determining the best approach to reporting specific information under the five categories of Article 13. Balancing the need to avoid undue burden while ensuring that reporting is fit for purpose is a delicate exercise.

Figure 7 | Hypothetical Example of Reporting under the Paris Agreement



* All Parties are encouraged to provide information on climate change impacts and adaptation, and developing country Parties are encouraged to provide information on support needed and received

** Developed country Parties are required, and other Parties that provide support are encouraged, to provide this information.

Source: Informed by OECD 2016, adapted by the authors.

8. CONCLUSION AND SUGGESTIONS

The enhanced transparency framework under the Paris Agreement is a crucial component of the international climate regime. Robust reporting by Parties will provide the data and information necessary to understand progress and efforts toward meeting the goals of the Agreement.

For the reporting framework to be effectively designed and then implemented, Parties and the wider international community must fully embrace the functions and benefits of the reporting framework nationally and internationally. This includes the role it can play in providing essential information to help assess where Parties are individually and then collectively; identify gaps, barriers, and needs; and therefrom inform the mechanisms created in the Paris Agreement: the GST to ramp up ambition (under Article 14) and the committee to facilitate implementation and promote compliance (under Article 15). Parties should not lose sight of the benefits of the reporting exercise domestically either.

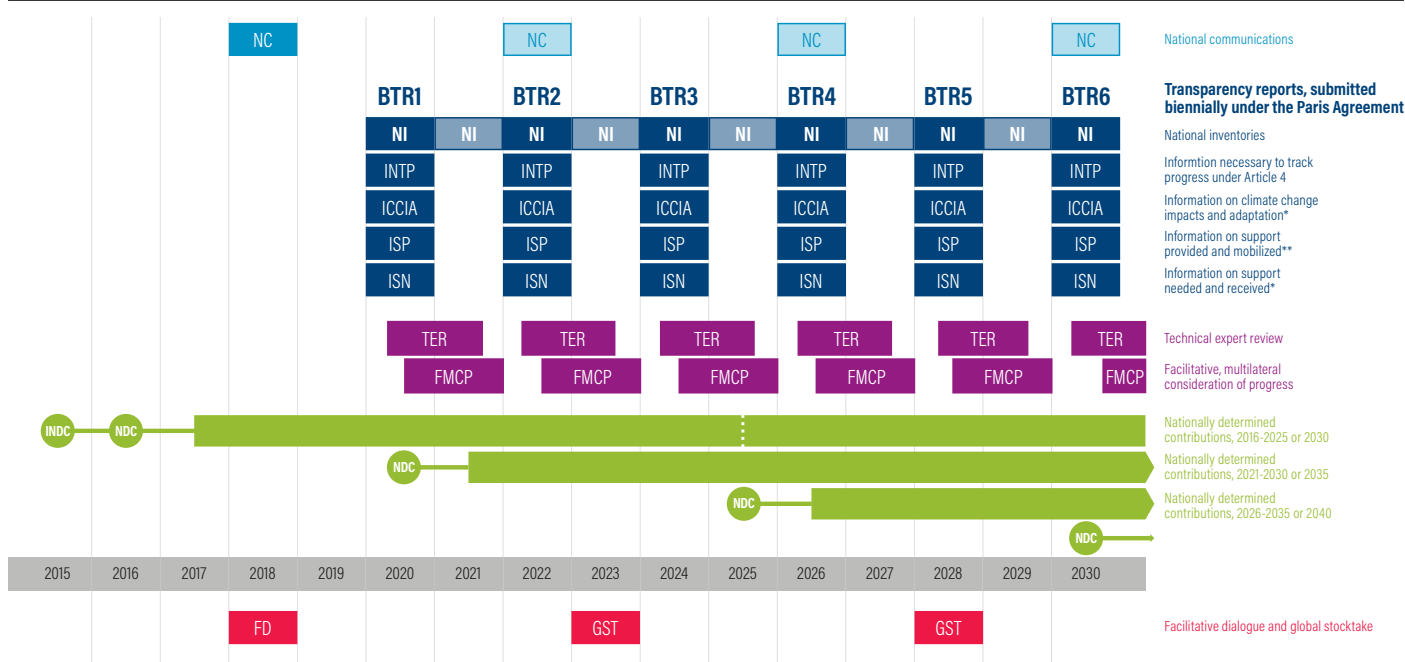
The cross-cutting nature of the transparency framework and its linkage to other provisions of the Paris Agreement makes it a central piece of the complete Paris implementation guidelines, due for adoption by the end of 2018. Its careful and detailed design therefore should

promote coherence among the vehicles highlighted in the Paris Agreement to communicate, report, and plan efforts and fulfill the objectives of the Paris Agreement. Figure 8 highlights how the overall transparency framework could operate over time. It builds on Figure 7 and elaborates on the timing for the TER and the FMCP, which are explored in more detail in a complementary paper.¹⁴⁸ Although consistency between the biennial reporting and review cycles and the five-year GST and NDC cycles may be a challenge, the transparency framework still should be responsive to the needs of Parties as they update and enhance their NDCs.

The diverse lessons from current reporting practices, as well as the exploration of potential reporting approaches under the Paris Agreement, lead to the following general conclusions.

First, the MPGs for reporting will need to be responsive to the many requirements described in the Paris Agreement. It will be challenging for the transparency framework to accommodate all its features—that is, to realize the principles of transparency, accuracy, completeness, consistency, and comparability (TACCC); avoid undue burden on Parties; prevent double-counting; provide flexibility for developing countries that need it; maintain the frequency and quality of reporting; ensure environmental integrity; and facilitate improvement over time. Parties may allow greater

Figure 8 | Hypothetical Example of the Transparency Framework in Operation



* All Parties are encouraged to provide information on climate change impacts and adaptation, and developing country Parties are encouraged to provide information on support needed and received

** Developed country Parties are required, and other Parties that provide support are encouraged, to provide this information.

Source: Informed by OECD 2016, adapted by the authors.

flexibility for those developing countries that need it in the light of their capacity to fulfill certain provisions. Alternatively, they may establish a minimum set of requirements and encourage Parties to go further. Either way, lessons have shown that transparency must go hand-in-hand with capacity building and learning by doing to improve over time. Capacity-building support must be provided to developing country Parties. At the same time, the implementation of reporting and review requirements under the UNFCCC can build countries' capacities over time, and convergence toward common MPGs will become easier as Parties expand capacity. Further research is needed to explore how more sustainable capacity-building processes can be set up to improve transparency under the Paris Agreement.

Second, trade-offs when pursuing the various purposes of reporting may be unavoidable. This is not a new concept, as trade-offs between principles such as accuracy and completeness have occurred with respect to reporting in the past. Examples of potential trade-offs that might be made include for reporting on support, emphasizing transparency and flexibility over consistency by requiring Parties to provide details of their reporting methodology rather than applying a common approach. Or when reporting climate change impacts and adaptation, in order to promote the improvement of data and inform the design of the successive rounds of NDCs, MPGs may pay particular attention to how national capacity building can be strengthened and how the reporting can facilitate the sharing of best practices in the near term. This might come at the expense of a comprehensive approach to understanding global adaptation progress that would support the GST. Pursuit of the TACCC principles in a comprehensive manner can increase the burden on Parties preparing reports, for example, by increasing the quality and quantity of data required. It may be helpful for Parties to consider primary purposes and aims when encountering possible trade-offs between principles or criteria. At the same time, not all decisions will result in trade-offs, and Parties should strive toward MPGs that will result in the greatest impact while balancing the need to avoid undue burden on Parties.

Clear guidance is key. Parties should strive to ensure the MPGs provide as much clarity as possible while noting where flexibility is available for those developing country Parties that need it in the light of their capacities. Experience has shown that Parties often struggle to fulfill reporting requirements when guidance is unclear, and this creates significant challenges to understanding the information provided by Parties and during review by the TER team. Clarity regarding the intention and purpose of reporting each piece of information, how the information should be described, and any other crucial instructions will make reporting easier in the long run.

Capacity-building efforts should be dedicated to strengthening countries' ability to report using best practices to support greater consistency and comparability. The enhanced transparency framework should be accompanied by capacity-building resources and opportunities for developing countries (e.g., the CBIT), to fulfill more challenging requirements, provide desired information to facilitate understanding, promote the use of common methodologies (e.g., on projections), produce time series for GHG inventories, and improve Parties' capacity to report with regular frequency.

Table 4 presents our summary of key suggestions regarding the content, timing, and format of reporting on the five categories of information under the enhanced transparency framework of the Paris Agreement. The table also indicates the relevant criteria that are supported by each suggestion. As some suggestions are to continue existing practice, Parties that are already following these reporting practices should focus on ways to further improve their reporting. Overall, the MPGs should encourage improvement by all Parties over time. In order to accommodate enhanced reporting by all Parties, the MPGs may need to be updated or revised regularly as the transparency framework also would broadly improve overtime to maintain fitness of purpose for the Paris Agreement.

Table 4 | **Summary of Proposals for Discussion**

REPORTING SUGGESTIONS	RELEVANT CRITERIA
National Inventories	
<p>WHAT Over time, all Parties should be required to report comprehensively. All Parties should be required to make every effort to develop and/or select emission factors, and collect and select activity data, in accordance with the corresponding decision trees using the 2006 IPCC Guidelines (or the latest IPCC Guidelines), or develop country-specific emissions factors and activity data consistent with the Guidelines. In addition, all Parties should be required to use a recommended method for those categories that are determined to be key categories, in accordance with the corresponding decision trees in the 2006 IPCC Guidelines (or the latest IPCC Guidelines). (See Section 2.2.3 for a discussion on the use of the 2006 Guidelines.)</p> <p>Capacity-building efforts should be dedicated to facilitating the most accurate presentation of GHG inventory data for all seven GHG gases covered under the Kyoto Protocol. Information from all countries' national inventories will be critical to assess collective progress during the GST and facilitate the tracking of individual progress made in implementing and achieving NDCs.</p>	<ul style="list-style-type: none"> ■ Supports GST ■ Facilitates improved reporting and transparency over time ■ Promotes TACCC ■ Ensures environmental integrity ■ Builds on and enhances transparency arrangements under the Convention ■ Ensures Parties maintain quality of reporting
<p>WHEN Parties should, at a minimum, maintain their reporting frequency, which is consistent with the Paris Agreement. Over time, more developing country Parties may be in a position to report annually, as their national inventory arrangements grow stronger and they should be encouraged to do so.</p> <p>Parties should be required to report a consistent time series from the base year of the NDC to a recent year. A consistent time series is of critical importance to inventory data. However, some developing country Parties may be in a position to report two years prior to submission and should be encouraged to do so.</p> <p>Capacity-building efforts should be dedicated to strengthening countries' ability to report with regular frequency. Countries should use the same time series when reporting to support greater consistency and comparability.</p>	<ul style="list-style-type: none"> ■ Ensures Parties at least maintain frequency of reporting ■ Facilitates improved reporting and transparency over time ■ Builds on and enhances transparency arrangements under the Convention ■ Provides flexibility to those developing country Parties that need it in the light of their capacities
<p>HOW Parties should use CRF tables to report data in a standardized format. This would facilitate comparison of inventory data and trends. Capacity-building efforts should be dedicated to enhancing capacity of Parties that cannot do so.</p> <p>The MPGs should require all Parties with the capacity to do so to report using the most recent Guidelines. Regarding the timing of the transition from the 1996 to the 2006 Guidelines, flexibility could be given to those Parties that need time to build their capacity.</p>	<ul style="list-style-type: none"> ■ Supports GST ■ Facilitates improved reporting and transparency over time ■ Promotes TACCC ■ Avoids duplication as well as undue burden on Parties and Secretariat ■ Builds on and enhances transparency arrangements under the Convention ■ Ensures Parties maintain quality of reporting ■ Provides flexibility to those developing country Parties that need it in the light of their capacities

Table 4 | Summary of Proposals for Discussion (continued)

REPORTING SUGGESTIONS	RELEVANT CRITERIA
Information Necessary to Track Progress	
<p>WHAT All Parties should be required to report additional information on their NDCs (beyond those in paragraph 27 of 1/CP.21) until sufficient guidance is further elaborated; e.g., see Appendix C. Such an approach could address current reporting deficiencies. It would resemble an initial report under the Kyoto Protocol, which provides information about the Parties' commitment to be able to track progress toward it. Additionally, all Parties should report detailed information on common elements, as well as NDC-specific elements, as relevant, of progress related to implementation and achievement. This would include the use of an accounting tracking format for those NDCs that contain GHG targets. Appendix D includes a list of possible information and a sample tracking format for GHG targets; these could be used to regularly report on progress toward achievement.</p> <p>The enhanced transparency framework should be accompanied by capacity-building resources and opportunities to meet the need for enhanced data, including projections. Capacity building, especially investments in institutional, human, and technical capacities for data management and GHG accounting, must be targeted accordingly.</p> <p>In addition, all Parties—with flexibility for those that lack capacity—should report emissions projections by gas, by sector, and in total. Capacity-building efforts should be provided for those requiring assistance in developing projections. It will be important for Parties to report projection methods, including assessment of effects, assumptions, and data sources for key drivers. Use of common methodologies would ensure consistency across reports.</p>	<ul style="list-style-type: none"> ■ Supports GST ■ Promotes TACCC ■ Enhances transparency arrangements under the Convention ■ Ensures Parties maintain quality of reporting ■ Provides flexibility to those developing country Parties that need it in the light of their capacities ■ Facilitates improved reporting and transparency over time
<p>WHEN Parties should continue to report detailed information on progress at least every two years. Regular reporting, while requiring increased capacity, can lead to institutionalization of reporting systems.</p> <p>Each report could provide specific information relevant to the time period in which the report is produced rather than comprehensively covering all types of information every two years. The first report could provide information relevant to tracking progress. Reports due before a GST could require deeper elaboration of progress on implementation, and reports due after an NDC timeframe has ended could require elaboration of information to track achievement.</p>	<ul style="list-style-type: none"> ■ Supports the GST ■ Enhances transparency arrangements under the Convention ■ Provides flexibility to those developing country Parties that need it in the light of their capacities ■ Facilitates improved reporting and transparency over time ■ Avoids undue burden on Secretariat
<p>HOW All Parties should be required to report using a CTF. Given the benefits of a CTF, organizing key information by relevant sector covered by the NDC (energy, industrial processes and product use, agriculture, LULUCF, waste, and other sectors or note if cross-sectoral) and by relevant GHG (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆). All Parties should outline key methodological assumptions. Flexibility could be provided to those developing country Parties that need it in the light of their capacity. Capacity-building efforts should focus on providing training in the use of the CTF.</p>	<ul style="list-style-type: none"> ■ Avoids undue burden on Secretariat ■ Supports GST ■ Promotes TACCC ■ Enhances transparency arrangements under the Convention ■ Ensures Parties maintain quality of reporting ■ Provides flexibility to those developing country Parties that need it in the light of their capacities ■ Facilitates improved reporting and transparency over time

Table 4 | **Summary of Proposals for Discussion (continued)**

REPORTING SUGGESTIONS	RELEVANT CRITERIA
Information on Climate Change Impacts and Adaptation	
<p>WHAT Parties should provide both forward-looking and backward-looking information on adaptation as well as contextual elements such as national circumstances and impacts, vulnerabilities, and risks. This would help achieve the multiple purposes of reporting, regardless of the specific vehicles or timing Parties use.</p> <p>A single set of guidance for adaptation communications (Article 7) and transparency reporting (Article 13) would streamline the reporting process and reduce burden on Parties. This guidance should include practical instruction for common elements that should be provided depending on when and how the information will be submitted (see below), which can support consistency and completeness. The various communications and/or reports would then be recorded in a public registry and serve as an input to the GST at the appropriate time.</p> <p>Parties should include more methodological details in their reports to enhance transparency and the potential for comparability. Parties could consider commissioning the development of new methodologies or selecting an existing or forthcoming set of methodologies for countries to follow.</p>	<ul style="list-style-type: none"> ■ Maintains flexibility for Parties ■ Minimizes reporting burden ■ Promotes consistency and completeness ■ Can enhance transparency and comparability via more methodological details
<p>WHEN AND HOW Parties should retain some flexibility to choose both the vehicle (e.g., NCs, NAPs, or NDCs) for their adaptation communications and the timing for submitting information to fulfill reporting under Article 13. This approach minimizes the reporting burden and allows flexibility to select the vehicle and timing that best supports each Party's priorities and purposes for reporting. In most cases, frequency alone does not necessarily impede the achievement of any particular purpose. However, reporting adaptation information through different channels and at different times will reduce consistency and could negatively impact the ability to inform the GST, which may be the most time-sensitive process. A single guidance document covering both Article 7 and Article 13 should highlight the value of selecting reporting vehicles and timing relative to the GST.</p>	<ul style="list-style-type: none"> ■ Maintains flexibility for Parties ■ Minimizes reporting burden ■ Could optimize timing of reporting for the GST with proper guidance

Table 4 | Summary of Proposals for Discussion (continued)

REPORTING SUGGESTIONS	RELEVANT CRITERIA
Information on Support Provided	
<p>WHAT</p> <p>In their overall reporting on support provided and mobilized, Parties should include a description of how the provision of support contributes to achieving the aims of the Paris Agreement as set out in Article 2 and a description of how provision of finance meets the aims set out in Article 9.4.</p> <p>Parties should consider collectively reporting on finance mobilization. Parties would need to agree on a common approach and a collective report on finance mobilized might need to be submitted separately from the rest of the report on finance provided. Parties should be clear about the scope of reporting on collective mobilization, particularly if not all Parties providing finance join the effort.</p> <p>Reporting on support mobilized through public interventions should take a conservative approach to ensure credibility and trust. Given the need to mobilize and align trillions of dollars of investments to address climate change, efforts to assess mobilization should focus on identifying lessons in how public funds can be used most effectively to catalyze private investment, rather than as a strict means of accounting private finance toward specific mobilization goals.</p> <p>A legal circumstances-based approach could be a practical approach regarding ex-ante communications on finance to be provided and mobilized. Countries whose national budgets do allow this can report quantified projections for the next two years (at a minimum), while countries with restrictions would report as much as possible, and compensate by providing more comprehensive qualitative information. Countries should draw on data and methodologies used in their reporting to OECD-DAC for the Survey on Donors' Forward Spending Plans.</p>	<ul style="list-style-type: none"> ■ Improves fulfilment of TACCC principles ■ Gives sufficient flexibility to avoid Parties having to restructure their national reporting systems, thereby avoiding placing undue burden on Parties ■ Aims to ensure double-counting is avoided ■ Improves clarity on support provided and allows a full overview of aggregate financial support
<p>WHEN</p> <p>Countries should report finance provided biennially on the previous two calendar years and ex-ante on the following two calendar years. Reporting should be by calendar, not financial, year to increase consistency of reporting among countries. Ex-ante communications and ex-post reporting should be due at the same time to allow forward- and backward-looking reporting periods to overlap. The due date for reporting could be moved from January 1 to later in the year, which would allow Parties to report on the prior calendar year, reducing the time lag in reporting.</p>	<ul style="list-style-type: none"> ■ Maintains the frequency of reporting under BRs, in accordance with existing obligations. ■ Aims to avoid duplication and double-counting by aligning reporting time periods and having all reports due at the same time
<p>HOW</p> <p>CTFs could be enhanced by adopting the suggested improvements in Table 2. The ex-ante communication and ex-post report on support provided and mobilized should be made as a joint submission to reduce duplication and reporting burden.</p>	<ul style="list-style-type: none"> ■ Improves the CTFs ■ Aims to advance TACCC and avoid duplication and double-counting ■ Enhances clarity on support provided ■ Enables a better overview of aggregate financial support
<p>WHO</p> <p>In addition to all developed country Parties that are already required to report on support provided under the Convention, reporting should be mandatory for other developed country Parties that are covered by the collective finance mobilization goal reaffirmed in COP decision 1/CP.21, paragraph 53. Other Parties that choose to self-define as "developed country Parties" also could report as such.</p> <p>"Other Parties that provide support" should use the same MPGs as are required of developed country Parties to reduce the duplication and stasis associated with two reporting systems, but with the clear understanding that they do so voluntarily and with flexibility.</p> <p>For finance provided to multilateral entities that also provide finance for nonclimate activities, or that mobilize additional finance from capital markets, Parties should report on both core inflows and climate-specific outflows, using a common methodology for calculating climate-specific inflows, which could be agreed upon in conjunction with the SBSTA, relevant multilateral entities, and with the approval of their governing bodies.</p>	<ul style="list-style-type: none"> ■ Ensures Parties maintain at least frequency and quality of reporting, in accordance with respective obligations ■ Facilitates improved reporting and transparency over time by enabling other Parties to begin reporting on support provided ■ Provides flexibility to those developing country Parties that need it ■ Helps avoid double-counting, particularly when several Parties provide inflows to a multilateral entity ■ Improves transparency with reporting on both inflows and outflows

Table 4 | **Summary of Proposals for Discussion (continued)**

REPORTING SUGGESTIONS	RELEVANT CRITERIA
Information on Support Needed and Received	
<p>WHAT Parties should draw on information in their NDCs, NAPs, NAPAs, TNAs, adaptation needs assessments, and other sources for reporting on support needed.</p> <p>Parties should adopt a tiered system of reporting for support received, according to their capacities. Parties ideally should report on all climate support received, but as part of the tiered approach, they would prioritize reporting on support received from developed country Parties and the operating entities of the financial mechanism of the Agreement (to align with current practice in BURs). They would report on support from other Parties and multilateral institutions as their capacities develop over time. They also could voluntarily report on finance from domestic budgets for implementing the Paris Agreement and NDCs, which would help in assessing progress toward the overall goals of the Agreement.</p> <p>Parties should consider the need for guidelines on reporting on the use, impact, and estimated results of support received. One approach would be to draw on lessons from results-reporting methodologies used by operating entities of the Financial Mechanism and other multilateral climate funds. As part of reporting on use, impact, and results of support received, Parties could make reference to developed countries' reporting on support mobilized from public interventions and, if applicable, discuss their domestic funding and efforts to create an enabling environment for private finance mobilization to ensure these efforts are taken into account.</p>	<ul style="list-style-type: none"> ■ Avoids duplication and ensures consistency by drawing on existing sources for needs reporting ■ Promotes TACCC ■ Avoids undue burden on Parties ■ Facilitates improved reporting and transparency over time ■ Improves clarity on support received ■ Builds mutual trust ■ Promotes effective implementation
<p>When Developing countries' BRs should be due at the same time as reports on finance are provided and mobilized to allow consistency and comparability. (Reporting timelines are discussed further in Chapter 7.)</p> <p>Developing countries should focus on reporting on the previous two years of support received, which would align with reporting by developed countries on support provided. Reporting on support needs would not need to be temporally bound.</p>	<ul style="list-style-type: none"> ■ Maintains the frequency of reporting under BURs, in accordance with existing obligations ■ Enables some comparability and consistency by aligning with reporting by developed countries on support provided ■ Aims to avoid duplication and double-counting by aligning reporting time periods, and having all reports due at the same time
<p>How Developing countries should be encouraged to use CTFs for reporting on finance, technology, and capacity building needed and received. Recommended parameters that should be included are set out in Table 3.</p>	<ul style="list-style-type: none"> ■ Promotes TACCC ■ Enhances clarity on support received ■ Promotes effective implementation ■ Provides a clearer understanding on climate change action

APPENDIX A. HISTORY OF REPORTING UNDER THE UNFCCC

Since 1992, the UNFCCC regime has provided guidance and structure for the reporting of climate change information from national governments. The methods and vehicles for reporting have evolved, and new reporting requirements have been introduced.

The current system provides guidance and instruction for countries to measure, report, and verify their GHG emissions and climate change activities. Table A-1 highlights some of the primary reporting channels for Annex I and non-Annex I countries. Figure A-2 provides an overview of how reporting may evolve with the design and adoption of MPGs for reporting under the Paris Agreement.

Table A-1 | **Overview of Primary Reporting Channels**

UNDER THE CONVENTION ^a		
	Annex I Parties to the Convention	Non-Annex I Parties
National GHG inventories	Reported annually through NIRs	Reported in BURs and/or NCs
National communications	Reports containing information on ^b : <ul style="list-style-type: none"> ■ National circumstances ■ GHG inventories ■ Policies and measures ■ Projections and total effect of policies and measures ■ Vulnerability assessment, climate change impacts, and adaptation measures ■ Financial resources and transfer of technology ■ Research and systematic observation ■ Education, training, and public awareness 	Reports containing information on ^c : <ul style="list-style-type: none"> ■ National circumstances ■ GHG inventory ■ General description of steps taken or envisioned to implement the Convention ■ Other information considered relevant to the achievement of the objective of the Convention ■ Constraints, gaps, and related financial, technical, and capacity needs
UNDER THE MARRAKECH ACCORDS		
	Annex I Parties to the Kyoto Protocol	Non-Annex I Parties
"Initial Report"	A report to facilitate the calculation of its assigned amount pursuant to Article 3, paragraphs 7 and 8, and demonstrate its capacity to account for its emissions and assigned amount for the first commitment period ^d ; to facilitate the calculation of its assigned amount pursuant to Decision 1/CMP.8, Amendments to Article 3, paragraphs 7bis, 8 and 8bis, of the Kyoto Protocol for the second commitment period; and to demonstrate its capacity to account for its emissions and assigned amount ^e	n/a
"True-up Period Report"	A report upon expiration of the additional period for fulfilling commitments that contains information on emission reduction units (ERUs), certified emission reductions (CERs), assigned amount units (AAUs), and removal units (RMUs) valid for the commitment period in question ^f	n/a
UNDER THE DURBAN OUTCOME		
	Developed	Developing
Biennial reports and biennial update reports	Reported independently or in conjunction with national communications and includes information on ^g : <ul style="list-style-type: none"> ■ GHG emissions and trends ■ Quantified economy-wide emission reduction targets ■ Progress in achievement of quantified economy-wide emission reduction targets and relevant information ■ Projections ■ Provision of financial, technological, and capacity-building support to developing country Parties 	Reported independently or in conjunction with national communications and includes information on ^h : <ul style="list-style-type: none"> ■ Information on national circumstances and institutional arrangements ■ National GHG inventory ■ Mitigation actions and their effects ■ Constraints and gaps, and related financial, technical and capacity needs, including a description of support needed and received ■ Information on the level of support received ■ Information on domestic measurement reporting and verification

Notes:

^a UNFCCC, 1992.

^b UNFCCC, 2000.

^c UNFCCC, 2003a.

^d UNFCCC, 2005.

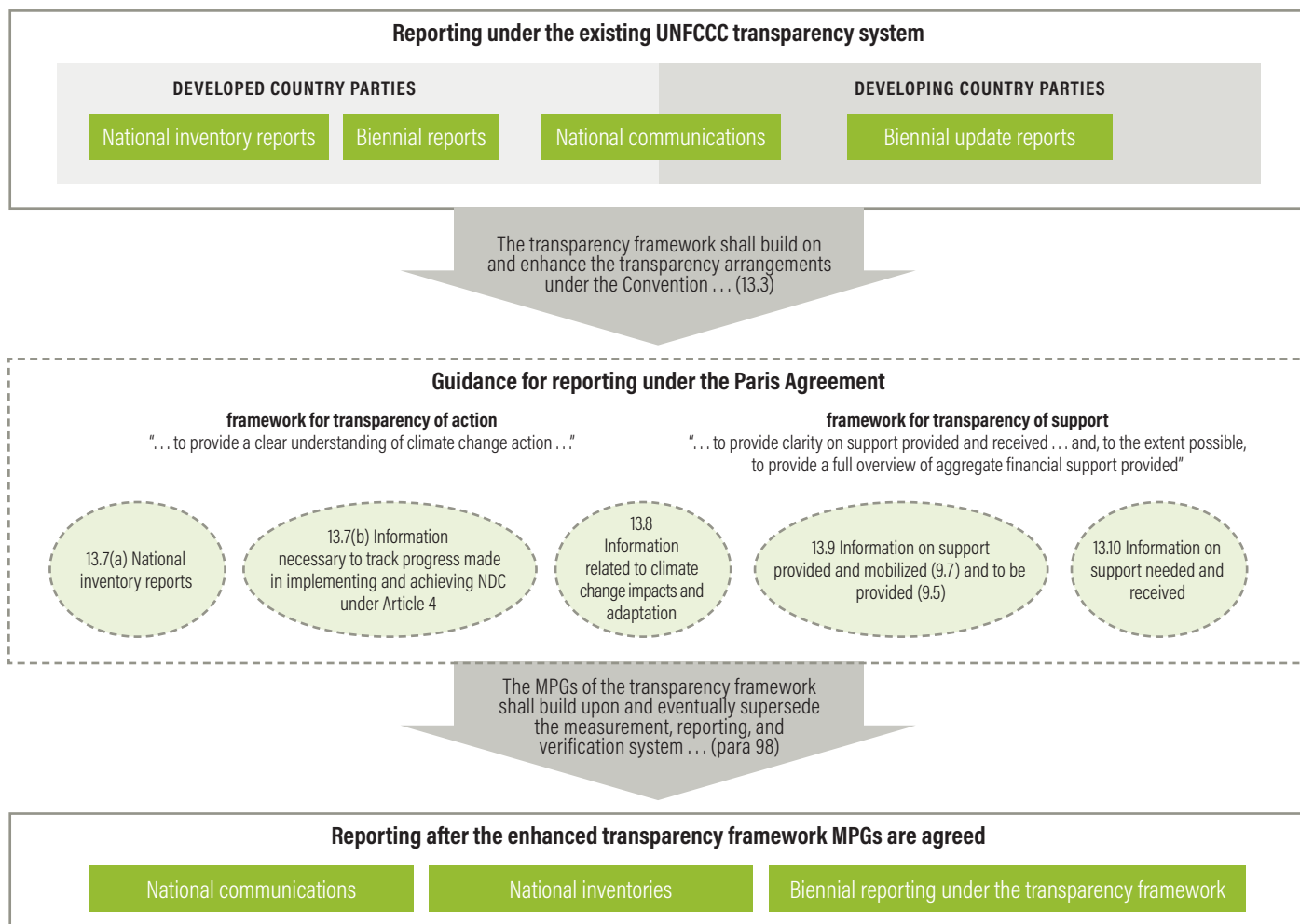
^e UNFCCC, 2012.

^f UNFCCC, 2005.

^g UNFCCC, 2011b.

^h UNFCCC, 2011b.

Figure A-2 | Advancing International Climate Change Reporting Practice under the UNFCCC



Note: Revision of the Guidelines for the preparation of NCs is currently being considered under Subsidiary Body for Implementation (SBI), and discussions will resume in 2019. It remains to be seen precisely how NCs and biennial transparency reports (BTRs) under the Paris Agreement will relate and whether they will remain distinct reports or be combined.
Source: Authors.

APPENDIX B: SUMMARY TABLES COMPARING EXISTING REPORTING PRACTICES WITH REPORTING UNDER THE PARIS AGREEMENT

Table B-1 | Reporting National GHG Inventories

Kyoto Protocol Reporting Requirements (Annex I/Developed That Have Ratified the Protocol)	UNFCCC Reporting Requirements (Annex I/Developed)	UNFCCC Reporting Requirements (Non-Annex I/Developing)	Paris Agreement Reporting Requirements (Developed and Developing)
WHAT: Content of reporting			
<p>As a minimum requirement, inventories shall contain information on the following GHGs: CO₂, CH₄, N₂O, PFCs, HFCs, SF₆, and NF₃.^a Parties report the following:</p> <ul style="list-style-type: none"> ■ Anthropogenic GHG emissions and removals not covered by the Montreal Protocol (MP) ■ Analysis of emissions trends ■ Activity data ■ Emissions factors and methodologies ■ National inventory arrangements ■ Data and results from inventory estimates in CRF tables <p>In addition, Annex I Parties should provide information on the following precursor gases: carbon monoxide (CO), nitrogen oxides (NO_x), and nonmethane volatile organic compounds (NMVOCs), as well as sulfur oxides (SO_x). Annex I Parties are strongly encouraged also to report emissions and removals of additional GHGs, such as hydrofluoroethers (HFEs), perfluoropolyethers (PFPEs), and other gases for which 100-year global warming potential values are available from the IPCC but have not yet been adopted by the COP. International aviation and marine bunker fuel emissions should not be included in national totals but should be reported separately.</p> <p>Annex I Parties shall estimate and report the individual and cumulative percentage contributions from key categories to their national total, with respect to both level and trend. Parties should make every effort to use decision trees included in the Guidelines for key categories in accordance with the 2006 IPCC Guidelines.</p>	<p>Developing country Parties shall report on CO₂, CH₄, and N₂O. Parties are encouraged to provide information on anthropogenic emissions by sources of HFCs, PFCs, and SF₆ and of other GHGs such as CO, NO_x, and NMVOCs. Other gases not controlled by the Montreal Protocol, such as SO_x, included in the IPCC guidelines may be included at the discretion of the Parties.^{b,c}</p> <ul style="list-style-type: none"> ■ Encouraged to undertake key category analysis ■ Encouraged to report on emissions of indirect GHGs ■ Encouraged, to the extent possible, and if disaggregated data are available, to report emissions from international aviation and marine bunker fuels separately in their inventories. Emission estimates from these sources should not be included in the national totals ■ Encouraged to provide information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol, including a brief explanation of the sources of emission factors and activity data. If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the IPCC Guidelines, they should explicitly describe the source and/or sink categories, methodologies, emission factors, and activity data used in their estimation of emissions, as appropriate. Parties are encouraged to identify areas where data may be further improved in future communications through capacity building. ■ When reported in BURs, update of NC reported gases ■ Encouraged to describe the procedures and arrangements undertaken to collect, document, quality check, and archive data for the preparation of national GHG inventories, as well as efforts to make this a continuous process, including information on the role of the institutions involved 	<p>Each Party shall regularly provide the following information: A national inventory report of anthropogenic emissions by sources and removals by sinks of GHG, prepared using good practice methodologies accepted by the IPCC and agreed upon by the CMA.</p>	
WHEN: Frequency of reporting			
<p>Annual.</p> <p>Time series: A complete GHG inventory time series from the base year to two years prior to the submission year.</p>	<p>Every four years (as part of NCs) and every two years (as part of their BURs). The least developed country Parties and SIDS may submit BURs at their own discretion.</p> <p>Time series: No more than four years prior to the submission year. Encouraged to provide a consistent time series back to the years reported in the previous NC.</p>	<p>At least as often as currently reporting.</p>	

Table B-1 | Reporting National GHG Inventories (continued)

Kyoto Protocol Reporting Requirements (Annex I/Developed That Have Ratified the Protocol)	UNFCCC Reporting Requirements (Annex I/Developed)	UNFCCC Reporting Requirements (Non-Annex I/Developing)	Paris Agreement Reporting Requirements (Developed and Developing)
HOW: Format of and methodology for reporting			
<p>Developed country Parties that have ratified the Kyoto Protocol are required to include supplementary information in their annual GHG inventories to demonstrate compliance with the Kyoto Protocol's commitments.</p>	<p>Format: NIRs.</p> <p>Summary information from the national GHG inventory on emissions and emission trends shall be prepared for the period from the first reporting year to the latest year in the most recent inventory submission available.</p> <p>All Parties use CRF tables included in Annex II to decision 24/CP.19.</p> <p>Methodology: 2006 IPCC Guidelines and any supplementary methodologies.</p>	<p>Format: Under BURs, non-Annex I country Parties prepare and submit national inventories.</p> <p>Developing country Parties that have previously reported on their national GHG inventories contained in their NCs are encouraged to submit summary information tables of inventories for previous submission years. The report should be structured as a summary or as an update of the information reported on national GHG inventories in the latest submission of the NC and should include Table 1 contained in the annex to decision 17/CP.8 and Table 2 contained in the annex to decision 17/CP.8. Parties also are encouraged to include tables included in Annex 3A.2 to the IPCC Good Practice Guidance for Land Use, Land-Use Change and Forestry (LULUCF); sectoral report tables annexed to the Revised 1996 IPCC Guidelines; consistent time series back to the years reported in the previous NC; summary information tables of inventories for previous submission years reported in NCs; and additional or supporting information, including sector-specific information, in a technical annex.^d</p> <p>Methodology: Parties should use 1996 Revised IPCC Guidelines in conjunction with IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories and the Good Practice Guidance for Land Use, Land-Use Change and Forestry and use any supplementary methodologies agreed by the COP.</p>	<p>TBD</p>
WHO: Who does the reporting			
<p>Countries that are Parties to the Kyoto Protocol</p>	<p>Annex I</p>	<p>Non-Annex I</p>	<p>All Parties</p>

Notes:
^a UNFCCC 2013c.
^b UNFCCC 2014c.
^c UNFCCC 2003a.
^d UNFCCC 2014c.
 Source: Authors.

Table B-2 | Reporting Information Necessary to Track Progress Made on Implementing and Achieving NDCs

KYOTO PROTOCOL REPORTING REQUIREMENTS (ANNEX I/DEVELOPED)	UNFCCC REPORTING REQUIREMENTS (ANNEX I/DEVELOPED) FOR 2020 QUANTIFIED ECONOMY-WIDE EMISSIONS TARGETS ^a	UNFCCC REPORTING REQUIREMENTS (NON-ANNEX I/DEVELOPING) FOR NAMAS	PARIS AGREEMENT REPORTING REQUIREMENTS (ALL PARTIES)
WHAT: Content of reporting			
<p>Initial report:</p> <ul style="list-style-type: none"> ■ Complete GHG inventories, recalculated in accordance with 4/CMP.7 for all years from 1990, or another approved base year ■ Selected base year for HFCs, PFCs, SF₆ (if needed), and NF₃ ■ Agreement under Article 4 of the Kyoto Protocol for the CP2 ■ Calculation of the assigned amount and commitment period reserve ■ Selection/justification of LULUCF parameters for use in 3.3, 3.4 accounting (if needed for CP2) ■ Election of 3.3, 3.4 activities for CP2 (in addition to those elected in CP1) ■ Selection of annual or end-of-period accounting for each 3.3, 3.4 activity ■ The forest management reference level (appendix to the annex to 2/CMP.7) and related info (regarding emissions from harvested wood products and natural disturbances) ■ Descriptions of the national system and national registry <p>Annual reports</p> <ul style="list-style-type: none"> ■ The Party's holdings of and transactions of Kyoto Protocol units for the previous calendar year, reported in the standard electronic format for reporting Kyoto units ■ Emissions and removals from LULUCF activities under Article 3, paragraphs 3 and 4, and calculations of the amount to be added to and subtracted from the assigned amount ■ Changes in the Party's national system ■ Changes in the Party's national registry ■ Information on the Party's implementation of policies and measures that minimize adverse social, environmental, and economic impacts on developing country Parties <p>True-up reports</p> <ul style="list-style-type: none"> ■ The total quantities of the categories of ERUs, CERs, AAUs, and RMUs for the current calendar year until the end of the additional period for fulfilling commitments ■ The total quantity and serial numbers of ERUs, CERs, AAUs, and RMUs in its retirement account ■ The total quantity and serial numbers of ERUs, CERs, and AAUs the Party requests to be carried over to the subsequent commitment period <p>Supplementary reports</p> <ul style="list-style-type: none"> ■ A description of the national system ■ A description of the national registry ■ An explanation of how the Party's use of the Kyoto Protocol mechanisms is supplementary to domestic action ■ Information on the Party's implementation of policies and measures under Article 2 ■ A description of the Party's legislative, enforcement, and administrative arrangements ■ A description of technology transfer, capacity building, and other Article 10 activities ■ Information on the provision of financial resources to developing country Parties for the implementation of Article 10 activities ■ Forest management reference levels^b 	<p>BRs:</p> <ul style="list-style-type: none"> ■ Information on GHG emissions and trends (summary of GHG inventories) ■ Description of quantified economy-wide emission reduction target, together with conditions or assumptions ■ Progress in achievement of quantified economy-wide emission reduction targets and relevant information, including the mitigation actions and their effects, change in domestic procedural and institutional arrangements, and assessment of adverse effects of response measure ■ Estimates of emission reductions and removals and the use of units from the market-based mechanisms and LULUCF activities ■ Updated projections for 2020 and 2030 (supported by methodologies and assumptions) <p>NCs:</p> <ul style="list-style-type: none"> ■ Estimate of the effects of policies and measures ■ Any other details of the activities a Party has undertaken to implement the Convention^c 	<p>BURs:</p> <ul style="list-style-type: none"> ■ Name and description of mitigation action, including nature of action, coverage, quantitative goals, and progress indicators ■ Information on methodologies and assumptions ■ Objectives of the action and steps taken or envisaged to achieve the action ■ Information on the progress of implementation and underlying steps taken or envisaged, and the results achieved, such as estimated outcomes and estimated emissions reductions to the extent possible ■ Information on international market mechanisms <p>NCs:</p> <ul style="list-style-type: none"> ■ General description of steps taken or envisaged for formulating, implementing, publishing, and regularly updating national and regional programs containing measures to mitigate climate change ■ General description of steps taken or envisaged to implement the Convention ■ Other information considered relevant to the achievement of the objective of the Convention ■ General guidelines for domestic MRV (decision 21/CP.19)^d ■ Institutions, entities, arrangements, and systems involved in domestic MRV ■ Approach to measure domestically supported NAMAs ■ Approach to verify domestically supported NAMAs 	<p>Each Party shall regularly provide the following information: Information necessary to track progress made in implementing and achieving its nationally determined contribution under Article 4.</p>

Table B-2 | Reporting Information Necessary to Track Progress Made on Implementing and Achieving NDCs (continued)

KYOTO PROTOCOL REPORTING REQUIREMENTS (ANNEX I/DEVELOPED)	UNFCCC REPORTING REQUIREMENTS (ANNEX I/DEVELOPED) FOR 2020 QUANTIFIED ECONOMY-WIDE EMISSIONS TARGETS ^a	UNFCCC REPORTING REQUIREMENTS (NON-ANNEX I/DEVELOPING) FOR NAMAS	PARIS AGREEMENT REPORTING REQUIREMENTS (ALL PARTIES)
WHEN: Frequency of reporting			
Annual reports, one-time reports (e.g., initial report, demonstrable progress report, true-up report), and periodic NCs and supplementary information	NCs every four years; BRs every two years	NCs every four years; BURs every two years	No less frequently than on a biennial basis, and the LDC Parties and SIDS may submit this information at their discretion
HOW: Format of reporting			
Initial reports, annual reports, demonstrable progress reports, true-up reports, and supplementary information	Both in textual and in CTFs	n/a	To be determined
WHO: Who does the reporting			
Annex I Parties with a commitment inscribed in Annex B of the Kyoto Protocol	Annex I Parties	Non-Annex I Parties	All Parties

Notes:
^a National inventory reporting is addressed in Table B-1. This table focuses on tracking progress toward climate commitments. While national inventories are a critical input into tracking progress, the reporting requirements for national inventories are considered in Table B-1.

^b UNFCCC 2010b.

^c UNFCCC 2014d.

^d UNFCCC 2014c.

Source: Authors.

Table B-3 | Reporting Requirements Related to Information on Climate Change Impacts and Adaptation

	UNFCCC REPORTING REQUIREMENTS (DEVELOPED)	UNFCCC REPORTING REQUIREMENTS (DEVELOPING)	PARIS AGREEMENT REPORTING/ COMMUNICATING REQUIREMENTS (DEVELOPED AND DEVELOPING)
WHAT	<ul style="list-style-type: none"> ■ ANC shall include information on the expected impacts of climate change and an outline of the action taken to implement Article 4.1(b)^a and (e)^b with regard to adaptation. ■ Although not explicitly a reporting channel, Parties were invited in decision 1/CP.20 to consider communicating their “undertakings in adaptation planning” or including an adaptation component in their INDCs. There were no formal guidelines, and the form and content of adaptation information found in INDCs varies widely.^c 	<ul style="list-style-type: none"> ■ Developing country Parties should provide information on their vulnerability to the adverse effects of climate change and on adaptation measures being taken to meet their specific needs and concerns arising from these adverse effects. ■ Developing country Parties are encouraged to: <ul style="list-style-type: none"> □ provide information on the scope of their vulnerability and adaptation assessment, including identification of vulnerable areas that are most critical; □ include a description of approaches, methodologies, and tools used, including scenarios for the assessment of impacts of, and vulnerability and adaptation to, climate change as well as any uncertainties inherent in these methodologies; □ provide information on their vulnerability to the impacts of, and their adaptation to, climate change in key vulnerable areas. Information should include key findings and direct and indirect effects arising from climate change, allowing for an integrated analysis of the country’s vulnerability to climate change; and □ provide information on and, to the extent possible, an evaluation of, strategies and measures for adapting to climate change in key areas, including those which are of the highest priority. <p>Where relevant, Parties may report on the use of policy frameworks, such as national adaptation programs, plans, and policies for developing and implementing adaptation strategies and measures.^d</p> <ul style="list-style-type: none"> ■ Although not explicitly a reporting channel, Parties were invited in decision 1/CP.20 to consider communicating their “undertakings in adaptation planning” or including an adaptation component in their INDCs. There were no formal guidelines, and the form and content of adaptation information found in INDCs varies widely.^e ■ LDC Parties were encouraged, to the extent possible, to provide information on their NAP process through their NCs, as well as other channels^f 	<p>Reporting and communicating information related to adaptation can be found in several places in the text of the Paris Agreement and its accompanying decision.</p> <ul style="list-style-type: none"> ■ Article 7.10: Each Party should, as appropriate, submit and update periodically an adaptation communication, which may include its priorities, implementation and support needs, plans and actions, without creating any additional burden for developing country Parties. ■ Article 13.8: Each Party should also provide information related to climate change impacts and adaptation under Article 7, as appropriate.
WHEN	Every four years (NCs)	Every four years (NCs) but at their discretion for LDCs	For Article 13.8: No less frequently than currently communicated and no less frequently than on a biennial basis. LDC Parties and SIDS may submit this information at their discretion. For Article 7.12: adaptation communications are to occur “periodically,” and the specific timing will depend on the vehicle chosen for the adaptation communication.
HOW	NCs	NCs and NAPs communicated through other channels	Adaptation communications (NCs, NDCs, or NAPs) and/or Article 13.8 reports
WHO	Developed country Parties (NCs) All Parties (NDCs)	Developed country Parties (NCs) All Parties (NDCs)	All Parties

Notes:

^a Article 4.1(b) stipulates that Parties shall “[f]ormulate, implement, publish and regularly update national and, where appropriate, regional programmes containing . . . measures to facilitate adequate adaptation to climate change.”

^b Article 4.1(e) stipulates that Parties shall “[c]ooperate in preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as floods.”

^c UNFCCC 2015g.

^d UNFCCC 2002.

^e UNFCCC 2015g.

^f UNFCCC 2011d.

Source: Authors.

Table B-4 | Reporting Requirements Related to Information on Support Provided and Mobilized

	KYOTO PROTOCOL REPORTING REQUIREMENTS (DEVELOPED AND DEVELOPING)	UNFCCC REPORTING REQUIREMENTS (ANNEX II/DEVELOPED)	PARIS AGREEMENT REPORTING REQUIREMENTS (DEVELOPED AND DEVELOPING)
WHAT:	<p><i>Shall</i> include in their NCs information on programs and activities undertaken pursuant to this Article in accordance with relevant decisions of the Conference of the Parties including:</p> <ul style="list-style-type: none"> ■ Cooperate in the promotion of effective modalities for the development, application and diffusion of, and take all practicable steps to promote, facilitate, and finance, as appropriate, the transfer of, or access to, environmentally sound technologies, know-how, practices, and processes pertinent to climate change, in particular to developing countries, including the formulation of policies and programs for the effective transfer of environmentally sound technologies that are publicly owned or in the public domain and the creation of an enabling environment for the private sector, to promote and enhance the transfer of, and access to, environmentally sound technologies. ■ Cooperate in and promote at the international level, and, where appropriate, using existing bodies, the development and implementation of education and training programs, including the strengthening of national capacity building; in particular, human and institutional capacities and the exchange or secondment of personnel to train experts in this field, in particular, for developing countries. 	<p>NCs: <i>Shall</i> provide information on:</p> <ul style="list-style-type: none"> ■ measures taken to give effect to commitments under Art. 4.3, 4.4 and 4.5 of the Convention; ■ “new and additional” finance resources provided pursuant to Art. 4.3; ■ assistance provided for developing country Parties that are particularly vulnerable in meeting the costs of adaptation; ■ financial resources related to the implementation of the Convention provided through bilateral, regional and other multilateral channels; ■ measures related to transfer of, or access to, environmentally-sound technologies; ■ activities related to technology transfer; ■ activities for financing access by developing countries to “hard” or “soft” environmentally-sound technologies; ■ steps taken by governments to promote, facilitate and finance transfer of technology, and to support development and enhancement of endogenous capacities and technologies of developing countries. <p>BRs: <i>Shall</i> provide information on:</p> <ul style="list-style-type: none"> ■ the provision of financial, technological, and capacity-building support to non-AI Parties consistent with the requirements contained in the AI reporting guidelines on NCs following common reporting formats, including information on how support is new and additional; ■ its national approach for tracking of the provision of support, if appropriate; ■ indicators and delivery mechanisms used and allocation channels tracked; and ■ the underlying assumptions and methodologies used. <p><i>Should</i> distinguish, to the extent possible, between support for mitigation and adaptation activities, noting the capacity-building elements of such activities, where relevant.</p> <p>Further guidance is provided on the specific information to provide on each support topic: finance, technology transfer, and capacity building.^a</p> <p>S&As: <i>Requests</i> developed country Parties to prepare biennial submissions on their updated strategies and approaches for scaling up climate finance from 2014 to 2020, including any available information on quantitative and qualitative elements of a pathway, on:</p> <ul style="list-style-type: none"> ■ information to increase clarity on the expected levels of climate finance mobilized from different sources; ■ their policies, programs and priorities; ■ actions and plans to mobilize additional finance; ■ how Parties are ensuring the balance between adaptation and mitigation; and ■ steps taken to enhance their enabling environments. 	<p>Developed countries <i>shall</i>, and other Parties that provide support <i>should</i>, provide information on financial, technology, and capacity-building support provided to developing country Parties.</p> <p>Developed country Parties <i>shall</i> provide transparent and consistent information on support for developing country Parties provided and mobilized through public interventions in accordance with the modalities, procedures, and guidelines to be adopted by the CMA. Other Parties are <i>encouraged</i> to do so.</p> <p>Developed country Parties <i>shall</i> communicate indicative qualitative and quantitative information on finance provided and mobilized, as applicable, including, as available, projected levels of public financial resources to be provided to developing country Parties. Other Parties providing resources are <i>encouraged</i> to communicate such information on a voluntary basis.</p> <p>All Parties enhancing the capacity of developing country Parties to implement this Agreement <i>shall</i> regularly communicate on these actions or measures on capacity building.</p>
WHEN:	Every four years	Every four years (NCs); every two years (BRs and S&A)	Every two years
HOW:	NCs	NCs, BRs, S&A	Format to be determined
WHO:	All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances	Annex II Parties (NCs and BRs); developed country Parties (S&A)	Developed countries, and other Parties voluntarily, on support provided and mobilized

Note:
^a UNFCCC 2011b.
 Source: Authors.

Table B-5 | Reporting Information on Support Needed and Received

	UNFCCC REPORTING REQUIREMENTS (DEVELOPING)	PARIS AGREEMENT REPORTING REQUIREMENTS (DEVELOPED AND DEVELOPING)
WHAT:	<p>NCs: <i>Should</i> describe any constraints and gaps, and related financial, technical, and capacity needs, as well as proposed and/or implemented activities for overcoming the gaps and constraints, associated with the implementation of activities, measures, and programs envisaged under the Convention, and with the preparation and improvement of NCs on a continuous basis; Provide information on:</p> <ul style="list-style-type: none"> ■ financial resources and technical support for the preparation of their NCs provided by themselves, as well as those received from the GEF, All Parties or bilateral and multilateral institutions; ■ financial resources and technical support provided by themselves, and by the GEF, All Parties or bilateral and multilateral institutions, for activities relating to climate change. <p>Are <i>encouraged</i> to provide a list of projects proposed for financing.</p> <p><i>May</i> include information on:</p> <ul style="list-style-type: none"> ■ opportunities for the implementation of adaptation measures; ■ barriers to the implementation of adaptation measures; and ■ as appropriate, how support programs from Parties included in All are meeting their specific needs and concerns relating to vulnerability and adaptation to climate change. <p><i>Encouraged</i> to provide information on:</p> <ul style="list-style-type: none"> ■ country-specific technology needs and assistance received from developed country Parties and the FM [Financial Mechanism] of the Convention and, as appropriate, on how they have utilized this assistance in support for the development and enhancement of endogenous capacities, technologies, and know-how; other relevant needs and/or areas for capacity-building. <p>BURs: <i>Should</i> provide updated information on:</p> <ul style="list-style-type: none"> ■ constraints and gaps, and related financial, technical, and capacity-building needs; ■ financial resources, technology transfer, capacity-building and technical support received from the GEF, All Parties and other developed country Parties, the GCF and multilateral institutions for activities relating to climate change, including for the preparation of the current biennial update report; ■ technology needs, which must be nationally determined, and on technology support received. 	<p><i>Should</i> provide information on financial, technology transfer and capacity-building support needed and received.</p> <p>Developing country Parties <i>should</i> regularly communicate progress made on implementing capacity-building plans, policies, actions or measures to implement this Agreement.</p>
WHEN:	Every four years (NCs); every two years (BURs)	At least as frequently as currently reported; no less frequently than on a biennial basis, and that the least developed country Parties and small island developing States may submit this information at their discretion
HOW:	NCs; BURs	To be determined
WHO:	Non-Annex I Parties; LDC Parties and SIDS may submit BURs at their discretion.	Developing countries; LDCs and SIDS may submit information at their discretion.

Source: Authors.

APPENDIX C. LIST OF INFORMATION RELATED TO NDCS FOR THE BASIS OF TRACKING PROGRESS

Parties should report basic information on their NDC for the basis of tracking progress.

This list is drawn from the Open Book initiative to enhance transparency of the NDCs. Through

consultation with government representatives, World Resources Institute (WRI) developed a list of information for countries to provide when communicating their then-INDCs in 2015.¹⁴⁹

The reference point (including, as appropriate, a base year)

Base year(s)/period, if relevant (e.g., 2005)

Base year/period emissions, base year/period emissions intensity, or projected baseline scenario emissions, as relevant (e.g., base year emissions of 500,000 MtCO₂e in 2005)

Timeframes and/or periods for implementation

For targets/outcomes: target year(s)/period and peaking year (if applicable) (e.g., 2025 or 2030 for a single year target; 2021–30 for a multiyear target)

For actions: date actions come into effect and date of completion (if applicable) (e.g., 2020 with no end date)

Scope and coverage

Sectors covered (e.g., all IPCC sectors covered in national GHG inventory, or all economic sectors as defined by national sector classification)

Greenhouse gases covered (e.g., CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, NF₃)

Geographical coverage (e.g., 100% consistent with the national GHG inventory)

Percentage of national emissions covered, as reflected in the most recent national GHG inventory (e.g., 100%)

Planning processes

Planning processes for preparation of the INDC (such as stakeholder engagement and public consultation; process, data, and analysis for prioritizing sectors, actions, etc.; and decision-making processes)

If known, planning processes for implementation of the INDC (such as government processes to plan and implement actions, and if known, a list of existing or planned actions that will be implemented to achieve the INDC, their legal status, and the implementing entity/entities)

If known, planning processes for tracking implementation of the INDC (such as any domestic MRV systems in place or planned)

Assumptions and methodological approaches, including those for estimating and accounting for anthropogenic GHG emissions and, as appropriate, removals

Assumed IPCC inventory methodologies and global warming potential (GWP) values to be used to track progress (e.g., 2006 IPCC Guidelines for National Greenhouse Gas Inventories; AR4 GWP values)

Related to international market mechanisms:

Whether the Party intends to use or transfer internationally transferrable mitigation outcomes (ITMOs)

If ITMOs are to be used, any limit on the percentage of emission reductions that may be achieved through the use of ITMOs

If ITMOs are to be used, the policy on which are eligible

Related to accounting assumptions for emissions and removals from the land sector:

Treatment of land sector (included as part of the broader target, treated as a separate sectoral target, used to offset emissions within the target boundary, or not included in a target)

If the land sector is included, coverage of the land sector (net emissions and removals from land-use activities and/or categories) as compared to total net emissions from the land sector as a percentage, if known

If the land sector is included, assumed accounting approach (activity-based or land-based) and accounting method for the land sector and the level against which emissions and removals from the land sector are accounted, if known, including policy assumptions and methodologies employed

Any assumed use of methodologies to quantify and account for natural disturbances and legacy effects

Any other relevant accounting approaches, assumptions, or methodologies

For GHG reduction targets relative to a projected baseline scenario:

Whether the baseline scenario is static (will be fixed over the period) or dynamic (will change over the period)

The methodology used to project the baseline scenario, including the projection method (e.g., name and type of models), the cut-off year for policies included in the baseline scenario and any significant policies excluded from the baseline scenario, and the emissions drivers included and assumptions and data sources for key drivers

For dynamic baseline scenario targets, under what conditions will the baseline be recalculated and, if applicable, any significant threshold used to determine whether changes in emissions drivers are significant enough to warrant recalculation of the scenario

Total emissions projected in the baseline scenario in the target year(s)

For GHG reduction targets relative to emissions intensity:

Level of output (e.g., gross domestic product [GDP]) in the base year, projected level of output in the target year/period (and an uncertainty range, if available), and units and data sources used

For INDCs that include actions:

Estimated impact on GHG emissions and/or non-GHG indicators

Methodologies used to estimate impacts, including the baseline scenario and other assumptions

Uncertainty of estimated impacts (estimate or description)

Information on potential interactions with other policies/actions

How the Party considers that its INDC is fair and ambitious, in light of its national circumstances, and how it contributes toward achieving the objective of the Convention as set out in its Article 2

Comparison of the contribution to multiple indicators related to fairness. Factors Parties may want to consider including:

Emissions (e.g., past, current, or projected future emissions, emissions per capita, emissions intensity, or emissions as a percentage of global emissions)

Economic and development indicators (e.g., GDP, GDP per capita, indicators related to health, energy access, energy prices, education, housing, etc.)

National circumstances

Vulnerability and capacity to adapt to climate change impacts

Costs or relative costs of action

Mitigation potential (e.g., renewable energy potential)

Benefits of action (e.g., cobenefits) or other factors

Comparison of the contribution to multiple indicators related to ambition. Factors Parties may want to consider including:

Projected business-as-usual emissions

Recent historical emission trends

Total mitigation potential based on mitigation opportunities determined to be technically and economically feasible

Benchmarks for the annual rate of emissions reductions or other factors

Comparison of the contribution to multiple indicators related to achieving the objective of the Convention as set out in its Article 2. Factors Parties may want to consider including:

Anticipated national emissions in the target year/period if the contribution is achieved

The quantified GHG impact of the contribution

The intended peaking year and peaking emissions level (if known)

The annual rate of emissions reductions and/or expected emissions trajectory over time

Deviations from business-as-usual emissions

Any long-term mitigation goals, plans to limit cumulative emissions over time, or other factors

Other information:

For outcomes: type of target and target level

For actions: name or title of actions, legal status, implementing entity(ies), or other relevant information

Additional action that could be achieved if certain conditions were met, such as action by other Parties, the receipt of support, or other factors, if applicable

Description of Party's long-term target(s), if applicable

Elaboration on national circumstances (e.g., emissions profile, mitigation potential)

Additional information on adaptation not captured elsewhere, if relevant

Additional information, explanation, or context as relevant

APPENDIX D: INFORMATION TO REPORT ON PROGRESS TOWARD ACHIEVEMENT OF NDCS

Parties with economy-wide targets should report the following in each reporting year:

- If it has not been provided, base year emissions and baseline scenario emissions in metric tons of carbon dioxide equivalent (CO₂e), as relevant
- Information related to methodological consistency between base year inventory or baseline scenario emissions, as relevant, and inventory in the implementation period.
- Total GHG emissions, excluding emissions and removals from the LULUCF sector, by gas (in metric tons) and in metric tons of CO₂e (if different from the complete inventory).
- Emissions and/or removals from the LULUCF sector, based on the accounting approach applied, taking into consideration any relevant decisions of the COP and the activities and/or lands that will be accounted for.
 - for Parties that include the land sector in the goal boundary or treat it as a sectoral goal: land sector emissions and removals separately for each selected land-use category, activity, pool, and flux, as relevant, including all calculation methods used and any use of a natural disturbance mechanism;
 - for Parties that treat the land sector as an offset: the change in net land sector emissions in the reporting year (compared to the base year/period or baseline scenario [net-net accounting], or zero [gross-net accounting]) separately reported for each selected land-use category, activity, pool, and flux, as relevant, including all calculation methods used and any use of a natural disturbance mechanism.
- Total GHG emissions, including emissions and removals from the LULUCF sector.
- Information on the use of ITMOs (per Article 6 guidance currently under negotiation by the SBSTA) such as:
 - quantity of ITMOs sold/purchased for each reported year (number of units and kiloton of CO₂ equivalent);
 - quantity of ITMOs retired and used toward target (number of units and kiloton of CO₂ equivalent);
 - type/quality principles of outcomes applied to targets;
 - means for avoiding double-counting; and
 - vintages of ITMOs used towards target.

- Any emissions recalculations, including recalculations of base year emissions, base year emissions intensity, baseline scenario emissions, allowable target year emissions or emissions intensity, and the recalculated values alongside the original values;
- Emissions reductions to be achieved by the target year.

Additionally, for those Parties with base year intensity goals, they should report reporting year emissions intensity, the level of output in the reporting year, and the data sources used to determine the level of output. If not previously reported, they should report base year emissions intensity in metric tons of CO₂e and level of output in the base year as well as the data sources used to determine the level of output. Also, they should report current prices or constant prices referring to a historical year.

Additionally, for those Parties with dynamic baseline scenarios (depending on accounting rules/features if allowed), they should report:

- any recalculations made during the goal period, the significance threshold used, and recalculated emissions alongside the original values; and
- any recalculations of allowable emissions and recalculated allowable emissions alongside the original values.

Parties with GHG targets should use an accounting tracking format such as the following:

Parties with actions should report the estimated impact on GHG emissions and/or non-GHG indicators; methodologies used to estimate impacts, including the baseline scenario and other assumptions; uncertainty of estimated impacts (estimate or description); and information on potential interactions with other policies/actions.

Parties with non-GHG targets should report information related to any quantified indicators chosen by the Party as part of the NDC (e.g., share of renewables in electricity generation, forest area, reforestation area, and GHG inventories relevant to track aggregate effects of actions).

Parties that include adaptation in their NDCs should be encouraged to report on the outcomes of adaptation policies, actions, and measures to attain the NDCs, including the reduction of vulnerability in highly vulnerable areas. Parties may report on their evaluation of strategies and measures for adapting to climate change in key areas related to achieving their NDC, including those that are of the highest priority.

GHG BALANCE SHEET FOR MITIGATION TARGETS		1	2	3	4	5	6	7	8
		BASE YEAR	TARGET PERIOD (E.G., 2020–2025)						CUMULATIVE EMISSIONS = (2) + (3) + (4) + (5) + (6) + (7)
			2020	2021	2022	2023	2024	2025	
Emissions and removals within the goal boundary (MtCO₂e)									
A	Total emissions (excluding the land sector)	1,000	900						
B	Net land sector emissions	-100	-150						
	Total land sector emissions	50	50						
	Total land sector removals	-150	-200						
Internationally Transferable Mitigation Outcomes (ITMOS) (MtCO₂e)									
C	Total credits retired	0	50						
	Credits retired by type								
		Type A (e.g., CDM)	0	30					
		Type B	0	20					
D	Total credits sold	0	10						
	Credits sold by type								
		Type A (e.g., CDM)	0	5					
		Type B	0	5					
E	Total allowances retired	0	10						
	Allowances retired by type								
		Type A (e.g., CDM)	0	5					
		Type B	0	5					
F	Total allowances sold	0	5						
	Allowances sold by type								
		Type A (e.g., CDM)	0	3					
		Type B	0	2					
Change in net land sector emissions (MtCO₂e) (For users that treat the land sector as an offset and accounting relative to base year/period emissions)									
G	(B) reporting year – (B) base year	N/A*	-50						
Accountable emissions (MtCO₂e) (For all users except those treating the land sector as an offset)									
H	(A) + (B) – (C) + (D) – (E) + (F)	N/A*						705	
Accountable emissions (MtCO₂e) (For users that treat the land sector as an offset)									
I	(A) – (C) + (D) – (E) + (F) + (G)							805	

Source: Adapted from GHG Protocol Mitigation Goal Standard.

Other information to be provided, where applicable, could include: information on conditional components of NDCs, information on mitigation cobenefits resulting from Parties' adaptation actions and/or economic diversification plans (Article 4, paragraph 7), and information on steps countries are taking toward an economy-wide target. Developed country Parties should report more specific and detailed information on their economy-wide emission reduction targets and other relevant actions;

the assessment of the economic and social consequences of their response measures on developing countries; ensuring methodological consistency between the communication of NDCs and information on implementation; and reporting on the adaptation component of their NDCs. The requirement to provide information that would demonstrate and communicate progress should not discourage Parties from including information on actions they can report but for which they are unable to provide information to track progress.

ABBREVIATIONS

AAU	Assigned amount unit	LULUCF	Land use, land-use change, and forestry
APA	Ad Hoc Working Group on the Paris Agreement	MDB	Multilateral development bank
BR	Biennial report	MPGs	Modalities, procedures, and guidelines
BTR	Biennial transparency report	MRV	Measurement, reporting, and verification
BUR	Biennial update report	N₂O	Nitrous oxide
CH₄	Methane	NAMA	Nationally appropriate mitigation action
CBIT	Capacity-building Initiative for Transparency	NAP	National Adaptation Plan
CER	certified emission reduction	NAPA	National Adaptation Programme of Action
CGE	Consultative Group of Experts	NC	National Communication
CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement	NDC	Nationally determined contribution
CMP	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol	NF₃	Nitrogen trifluoride
CO	Carbon monoxide	NIR	National inventory report
CO₂	Carbon dioxide	NMVOG	Nonmethane volatile organic compound
CO₂e	Carbon dioxide equivalent	NO_x	Nitrogen oxides
COP	Conference of the Parties	ODA	Official development assistance
CRF	Common reporting format	OECD	Organisation for Economic Co-operation and Development
CTF	Common tabular format	OECD-DAC	OECD's Development Assistance Committee
ERU	Emission reduction unit	PFC	Perfluorocarbon
FMCP	Facilitative, multilateral consideration of progress	PFPE	Perfluoropolyether
FSV	Facilitative sharing of views	RMU	Removal unit
GCF	Green Climate Fund	S&A	Strategies and approaches
GDP	Gross domestic product	SBI	Subsidiary Body for Implementation
GEF	Global Environment Facility	SBSTA	Subsidiary Body for Scientific and Technological Advice
GHG	Greenhouse gas	SDG	Sustainable development goal
GST	Global stocktake	SF₆	Sulfur hexafluoride
GWP	Global warming potential	SIDS	Small Island Developing States
HFC	Hydrofluorocarbon	SO_x	Sulfur oxides
HFE	Hydrofluoroether	TACCC	Transparency, accuracy, completeness, consistency, and comparability
INDC	Intended nationally determined contribution	TER	Technical expert review
IPCC	Intergovernmental Panel on Climate Change	TNA	Technology needs assessment
ITMO	Internationally transferrable mitigation outcome	UNFCCC	United Nations Framework Convention on Climate Change
LDC	Least Developed Country	WRI	World Resources Institute

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ENDNOTES

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2. UNFCCC 2015f, Article 13.7(a).
3. UNFCCC 2015f, Article 13.7(b).
4. UNFCCC 2015f, Article 13.8.
5. UNFCCC 2015f, Article 13.9.
6. UNFCCC 2015f, Article 9.7.
7. UNFCCC 2015f, Article 9.5.
8. UNFCCC 2015f, Article 13.10.
9. Dagnet et al. 2016.
10. UNFCCC 2011d.
11. To review individual reports, see the UNFCCC website at http://unfccc.int/national_reports/national_communications_and_biennial_reports/items/10267.php.
12. UNFCCC 2016c, para 5.
13. UNFCCC 2015f, Article 13, para 3.
14. UNFCCC 2015b, para 98.
15. UNFCCC 2015f, Article 13.
16. Dagnet, Y. et al. Forthcoming. "Designing the Enhanced Transparency Framework: Review under the Paris Agreement."
17. Dagnet et al. 2017.
18. UNFCCC 2015f, Article 13.
19. UNFCCC 2015f, Article 13, paras 5 and 6.
20. Specific requirements include: all Parties are to communicate a nationally determined contribution every five years (Article 4.2); LDCs and SIDS may communicate strategies, plans, and actions for low GHG emissions development (Article 4.6); Parties are invited to communicate mid-century, long-term low GHG emission development strategies (Article 4.19); Parties should submit and update adaptation communications (Article 7.10); developed country Parties are to communicate indicative quantitative and qualitative financial information biennially, and other Parties should if they provide support (Article 9.5); and all Parties that enhance the capacity of developing country Parties are to communicate on their capacity-building actions and measures, and developing country Parties should communicate progress on implementing capacity-building efforts (Article 11.4).
21. These principles are sometimes referred to as the "TACCC principles" and are noted in decision 1/CP.21 paragraph 92.
22. Briner and Moarif 2016a.
23. Briner and Moarif 2016a.
24. UNFCCC. 2014b.
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26. Dagnet et al. 2017.
27. UNFCCC 2009.
28. UNFCCC 2017d.
29. UNFCCC 2014a.
30. NRDC 2011.
31. Low Emission Capacity Building Programme 2014.
32. Low Emission Capacity Building Programme 2014.

33. UNFCCC 2014a.
34. UNFCCC 2014a.
35. UNFCCC 2017d.
36. During the March 2017 UNFCCC workshop on transparency, some Parties called for the national GHG inventory report to, at a minimum, cover the calendar year no more than two years prior to the date of submission for developed country Parties and no more than four years prior to the date of submission for developing country Parties.
37. UNFCCC 2014a.
38. UNFCCC 2015e.
39. Briner and Moarif 2016a.
40. Briner and Moarif 2016a.
41. Briner and Moarif 2016a.
42. UNFCCC 2014b.
43. With developed country Parties required to use CRF tables, developing countries could continue to use summary tables as part of their inventory reporting.
44. UNFCCC 2017d.
45. NDC implementation guidance, forthcoming.
46. However, accounting guidance applies to the second NDCs; countries may voluntarily use the guidance for their first NDCs.
47. CAIT Climate Data Explorer 2017.
48. Mitigation Momentum 2013.
49. Levin et al. 2015.
50. Greenhouse Gas Protocol. 2017. "Standards." <http://www.ghgprotocol.org/standards>. Accessed July 6.
51. UNFCCC 2014b.
52. UNFCCC 2014a.
53. UNFCCC 2014a.
54. Greenhouse Gas Protocol *Policy and Action Standard* 2014.
55. Kurdziel and Roeser 2015.
56. UNFCCC 2014a.
57. 57 UNFCCC 2014b.
58. 58 UNFCCC 2014b.
59. 59 UNFCCC 2014b.
60. 60 UNFCCC 2017d.
61. CAIT Climate Data Explorer 2017.
62. UNFCCC 2014b.
63. UNFCCC 2015c.
64. UNFCCC 2013a.
65. UNFCCC 2014a.
66. UNFCCC 2017d.
67. UNFCCC 2014a.
68. UNFCCC 2014a.
69. UNFCCC 2014a.
70. Article 4.1(b) stipulates that Parties shall "Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing . . . measures to facilitate adequate adaptation to climate change."
71. Article 4.1(e) stipulates that Parties shall "Cooperate in preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as floods."
72. UNFCCC 1999.
73. UNFCCC 2004.
74. UNFCCC 2015g.
75. UNFCCC 2011e.
76. CDKN (Climate and Development Knowledge Network). 2016. "The Global Goal for Adaptation under the Paris Agreement: Putting Ideas into Action." <https://cdkn.org/wp-content/uploads/2016/11/Global-adaptation-goals-paper.pdf>.
77. CDKN 2016.
78. Including Carter et al. 1994 and UNEP 1998.
79. The BR requirement of paragraph 90 of decision 1.CP/21 excludes LDCs and SIDS and also includes the expression "as appropriate," which may apply to the content or the frequency.
80. The BR mandate says "Annex II Parties shall use any methodology to be developed under the Convention, taking into account international experience" (UNFCCC. 2011b. COP 2/CP.17, Annex I, para 15).
81. UNFCCC 2011a.
82. Based on a review of NCs and BRs, SCF 2016, OECD and CPI 2015, UNFCCC 2016b, Ellis and Moarif 2017, and Weikmans et al. 2016.
83. UNFCCC 2015d.
84. Bodnar et al. 2015.
85. Australia and Japan explicitly requested that this be noted in OECD and CPI, 2015. Analysis based on IPCC and IEA scenarios suggests that even high-efficiency, low-emissions coal-fired electricity generation is incompatible with the goal to keep temperature rise under 2°C. Wong, et al 2016.
86. UNFCCC 2011c, Annex I, para 19.
87. SCF 2016 and Ellis and Moarif 2017.
88. Jachnik et al. 2015.
89. Australia et al. 2015 and Australia et al. 2016.
90. UNFCCC 2012a, para 67.
91. UNFCCC 2013b, para 10.
92. UNFCCC 2015a.
93. OECD. 2014. "2014 Global Outlook on Aid: Results of the 2014 DAC Survey on Donors' Forward Spending Plans and Prospects for Improving Aid Predictability." Paris: Organisation for Economic Co-operation and Development. <http://www.oecd.org/dac/aid-architecture/GlobalOutlookAid-web.pdf>.
94. UNFCCC 2015b, para 94(d).
95. As mandated by UNFCCC 2015b, para 57.

96. UNFCCC 2015f, Article 9, para 5.
97. Ellis and Moarif 2017.
98. As mandated by UNFCCC 2015b, para 55. This process was initiated at COP 22.
99. The EU made a single submission on behalf of its 28 members who are all Annex I Parties, supported by Iceland and five non-Annex I Parties: Albania, Bosnia and Herzegovina, the Former Yugoslav Republic of Macedonia, Montenegro, and Serbia. Lithuania and the European Commission. 2013.
100. Although with slightly different permutations of countries submitting each cycle. Both times, the EU made a single submission on behalf of its 28 members, supported by Bosnia and Herzegovina, the former Yugoslav Republic of Macedonia, and Serbia in 2014, and the same countries plus Albania in 2016. UNFCCC 2015b, UNFCCC 2017b.
101. UNFCCC 2011c, Annex I, paras 17 and 18.
102. SCF 2016, Annex D.
103. Australia, Canada, Japan, New Zealand, the United Kingdom, and the United States.
104. The CTFs comprise summary information on finance provided (Table 7); finance through multilateral channels (Table 7[a]); finance through bilateral, regional, and other channels (Table 7[b]); technology development and transfer support provided (Table 8); and capacity-building support provided (Table 9). The finance tables include columns for status, source, financial instrument, type, and sector of support.
105. "Climate-specific" or "core/general," "status," "funding source," "financial instrument," "type of support," and "sector" per UNFCCC 2015d.
106. For example, although MDBs have a joint methodology for tracking climate finance, the IDB and WBG changed their reporting parameters in 2015, meaning it is not comparable with their reporting from 2011–14. ADB et al. 2017.
107. UNFCCC 2015b, para 94(d).
108. SCF 2016, Annex F.
109. UNFCCC 2010a, para 98.
110. Australia et al. 2016.
111. UNFCCC 2013b, para 10.
112. UNFCCC 2015a and UNFCCC 2017b.
113. Ellis and Moarif 2017.
114. Ellis and Moarif 2017.
115. SCF 2014.
116. Ellis and Moarif 2017.
117. ADB et al. 2017.
118. Weikmans et al. 2016.
119. The informal note by the cofacilitators from the third part of the first session of the APA (May 2017) captures the views expressed by Parties on MPGs for the transparency framework and separates out information on support provided and mobilized by developed country Parties and information on support provided and mobilized by other country Parties on a voluntary basis, although the note neither represents agreed-upon views, ideas, or text nor attempts to draw any conclusions on possible areas of convergence or divergence. UNFCCC 2017a.
120. UNFCCC 2015f, Article 9, para 6.
121. The Paris Agreement, Article 13, para 10, states "Developing country Parties should provide information on financial, technology transfer and capacity-building support needed and received under Articles 9, 10 and 11."
122. UNFCCC 2017c, SCF 2016, and Briner and Moarif 2016b.
123. SCF 2016.
124. Briner and Moarif 2016b.
125. Biru and Thwaites 2015.
126. Ellis and Moarif 2017.
127. Briner and Moarif 2016b, Weikmans et al. 2016, and Ellis and Moarif 2017.
128. SCF 2016.
129. Tirpak et al. 2014 and Ellis and Moarif 2017.
130. Briner and Moarif 2016b.
131. Tirpak et al. 2014.
132. Van Asselt et al. 2016.
133. UNFCCC 2015b, para 94(d).
134. Van Asselt et al. 2017.
135. SCF 2016, Briner and Moarif 2016b, and Ellis and Moarif 2017.
136. UNFCCC 2015b, para 90.
137. Van Asselt et al. 2017.
138. Ellis and Moarif 2017.
139. UNFCCC 2014c.
140. Briner and Moarif 2016b.
141. Briner and Moarif 2016b.
142. As set out in UNFCCC 2014c.
143. Ellis and Moarif 2017, Table 6.
144. Information on climate change impacts and adaptation is not required specifically to undergo TER or FMCP.
145. UNFCCC 2017f and Weikmans et al. 2016.
146. Briner and Moarif 2016b.
147. UNFCCC 2017e.
148. Dagnet, Y. et al. Forthcoming. "Designing the Enhanced Transparency Framework: Review under the Paris Agreement." WRI.
149. For more information on enhancing the transparency of NDCs, see <http://www.wri.org/our-work/project/open-book>.

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The Project for Advancing Climate Transparency (PACT) is made up of experts from developing and developed countries working together to advance the development of robust and effective transparency and accountability rules and processes for the Paris Agreement on climate change.

PACT facilitates the development of options and approaches, facilitates relevant and timely inputs to the UNFCCC negotiations, and provides space to build consensus among Parties through research, international meetings, and enhancement of domestic capacity of developing countries. To learn more about the consortium's work please visit: <http://www.wri.org/pact>.



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