PACT
Project for Advancing Climate Transparency

WORLD RESOURCES INSTITUTE

WORKING PAPER

BUILDING CAPACITY FOR THE PARIS AGREEMENT'S ENHANCED TRANSPARENCY FRAMEWORK:

WHAT CAN WE LEARN FROM COUNTRIES' EXPERIENCES AND UNFCCC PROCESSES?

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EXECUTIVE SUMMARY

Highlights

- Capacity building is essential to drive climate transparency. The 2015 Paris Agreement outlines an "enhanced transparency framework" including greater requirements for developing countries. Some developing countries have struggled to fulfill pre–Paris Agreement transparency requirements and will need capacity-building support to implement the Paris Agreement's more stringent requirements.
- New efforts to build capacity for the transparency framework need not "start from scratch" but should build on and learn from the history of transparency and capacity building under the United Nations Framework Convention on Climate Change (UNFCCC).
- Countries agreed on the guidelines for the enhanced transparency framework in December 2018. This paper shows how these guidelines strengthen the framework.
- Drawing on 13 case studies that illustrate countries' experiences in developing capacity for transparency, this paper highlights six key lessons to consider when building such capacity.
- This paper also maps international initiatives aimed at supporting climate transparency, discusses how bodies under the UNFCCC can support capacity building, and highlights upcoming UNFCCC transparency-related capacity-building decisions.
- The lessons presented throughout the paper aim to inform capacity-building efforts in order to be more effective, integrated, and sustainable than before the Paris Agreement, and enable countries to implement the Agreement at the pace and scale required.

CONTENTS

Working Papers contain preliminary research, analysis, findings, and recommendations. They are circulated to stimulate timely discussion and critical feedback, and to influence ongoing debate on emerging issues. Working papers may eventually be published in another form and their content may be revised.

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Context

While countries have been engaging in transparency arrangements under the UNFCCC (also referred to in this paper as the Convention) for many years, the Paris Agreement sets out a new paradigm with its enhanced transparency framework for action and support. Under the enhanced transparency framework, a single set of requirements applies to all countries, with "flexibility" in meeting these requirements provided for developing countries that need it. This represents a departure from previous transparency arrangements, which included two distinct sets of transparency requirements for developed and developing countries. Capacity building is crucial to ensure all countries are able to engage fully and effectively in the new and enhanced processes and requirements established under the Paris Agreement. Developing country Parties have different starting points and, without capacity building, some may struggle to implement the Paris Agreement's enhanced transparency framework.

Some developing countries have struggled to meet their transparency reporting requirements under the pre-Paris requirements, suggesting significant opportunities for improvement and additional capacity-building support. The requirements for the enhanced transparency framework will take effect by 2024. Until then, countries will continue to use the pre-Paris arrangements.[1] Very few developing country Parties have been able to submit their required transparency reports within the suggested time frame. Currently, developing country Parties are to provide national communications every four years as well as biennial update reports. National communications were first put in place by the Convention in 1992, while the biennial update reports represent a newer requirement. The first biennial update reports were due at the end of 2014. Only 45 of the 156 first biennial update reports had been submitted as of February 1, 2019. If developing countries are to improve upon the low submission rate, additional capacity building will be needed, and efforts will need to be directed toward implementation of the enhanced transparency framework.

Capacity-building efforts do not "start from scratch." In 2001, countries agreed to the capacity-building framework under the UNFCCC. This framework outlines 15 priority areas to focus capacity-building efforts. Together with previous experiences in capacity building, this framework provides essential insights to inform future efforts to build capacity for the Paris Agreement's enhanced transparency framework. Countries will need to assess whether the priority areas established under the Convention's capacity-building framework are still relevant under the Paris Agreement and seek to address them together with any newly identified or emerging priority areas.

About This Paper

This paper examines capacity building in light of the Paris Agreement's requirements for an enhanced transparency framework. Further, capacity building for the enhanced transparency framework is the sole focus of the paper. The authors recognize that capacity building for nontransparency activities is also essential to support the Paris Agreement but have limited the scope of this paper in order to provide focused discussions and analyses. Their aim is to identify opportunities for accelerating the pace, scale, and effectiveness of capacity building in order to support developing countries in meeting the requirements of the enhanced transparency framework. The paper begins by describing the modalities, procedures, and guidelines for the enhanced transparency framework as adopted by Parties in December 2018.

This paper reviews the challenges and gaps in capacities that countries face related to implementing the enhanced transparency framework of the Paris Agreement and lessons learned from the "transparency journey" thus far. In addition to a description of countries' reports on their capacity gaps, the paper uses 13 case study countries to highlight both the challenges and opportunities faced by efforts to build and mobilize capacity more effectively and sustainably, fulfill international requirements, and best collaborate to achieve the goals of the Paris Agreement. The case studies are not meant to capture the full extent of national efforts. Rather, they are intended to provide examples from which lessons can be drawn, as well as inspiration for further efforts.

Key messages emerge from the paper on how countries have built their capacities to meet transparency-related goals by addressing governance issues (institutional arrangements) and striving to provide the specific transparency information required. These lessons may be familiar to capacity-building experts and practitioners but remain key challenges that need to be addressed. Box ES-1 summarizes these lessons and lists the case studies explored in the paper.

Processes set up by the Paris Agreement can be helpful in supporting countries in enhancing their capacities. The paper discusses how three separate processes under the Paris Agreement—the

Box ES-1 | **Summary of Key Lessons and Corresponding Case Studies**

- **Building and mobilizing capacity is a process that takes time and requires countries to "learn by doing."** Developed countries built their capacities to meet transparency requirements under the Convention, in part, based on their experiences with the Kyoto Protocol. Expectations that developing countries can build similar capacity overnight are unrealistic. A case study from Japan illustrates the multidecade process of building national monitoring, reporting, and verification (MRV) systems, and a case from Ghana notes the value of a phased approach building on existing structures.
- **Capacity for transparency can be strengthened through enhanced governance and institutional structures.** In order to support transparent reporting and decision-making, countries need related institutional and governance structures, together with a participatory approach that supports the collection, storage, management, and communication of relevant data. A case study from Lebanon illustrates how the government is coordinating relevant ministries and actors to support its transparency goals. A case study from South Korea examines that country's approach to engaging the private sector.
- **Legal architecture, supported by an enhanced governance structure, can play a key role in sustaining regular tracking of countries' efforts.** Domestic laws in Mexico and the United Kingdom provide examples of how legislative actions and arrangements can support data collection and tracking of climate action. The case of Mexico highlights how legislative arrangements have supported the collection and understanding of adaptation data (an often-neglected area with which many countries still struggle). The example of the United Kingdom outlines a unique domestic legal architecture for tracking progress toward near-term (five-year) and longer-term targets.
- **Tracking tools and platforms are emerging to increase countries' abilities to monitor support received and progress toward their commitments.** Countries are seeking to build systems that allow them to more effectively track and report on support received. The example of Colombia's Climate Finance MRV system illustrates one innovative system for tracking finance received. The NDC Partnership also engages with countries through the development of collaborative planning tools that support deeper understanding of progress toward implementation of climate actions and allow for the tracking of countries' efforts toward the achievement of their nationally determined contributions (NDCs).
- **Capacity building can be strengthened by leveraging opportunities for integration of sustainable development goals (SDGs) and efforts for policy coherence.** Simultaneously with implementation of the Paris Agreement, developing countries are advancing the 2030 Agenda for Sustainable Development and its 17 goals. In efforts to reduce duplication, improve policy coherence and effectiveness, and support more integrated decision-making, efforts should be made to build greater synergy and capacity across both the climate and SDG agendas. The case study of Vanuatu illustrates efforts to ensure greater integration of reporting and tracking of climate actions and implementation of the SDGs. Serbia is also looking to more explicitly address gender considerations within its climate transparency system.
- **Lasting systems and knowledge are critical to building capacity.** Building the capacity and expertise of individuals is a critical component of capacity-building systems, but countries are exploring ways to ensure the knowledge is not lost if individuals leave for different jobs. Enduring and sustainable structures should support lasting knowledge and capacity-building projects. The Dominican Republic engages academia in an effort to build and anchor long-lasting knowledge. Similar civil society projects in Brazil and India support sustained interest and attention to greenhouse gas emissions data, while also supporting and building national expertise.

transparency framework, the global stocktake, and the mechanism to facilitate implementation and promote compliance—can be used to identify capacity gaps and needs, including needs common across Parties and those specific to individual Parties. The enhanced transparency framework itself consists of reporting on capacity-building needs, the technical expert review, and the facilitative, multilateral consideration of progress. The technical expert review is mandated to assist in identifying capacity-building needs and also identify areas for improvement, while the dialogues found in the multilateral consideration of progress represent opportunities for countries to share lessons. The global stocktake, where countries will consider collective progress toward the Paris Agreement's goals, can support the identification of common challenges. Similarly, the mechanism to facilitate implementation and promote compliance can not only directly support individual countries but also examine collective or systemic gaps. This mechanism can help individual countries identify needs to implement and comply with the Paris Agreement and offer advice and assist countries in locating resources to address these gaps.

The paper also explores how the Convention and the Paris Agreement processes and UNFCCC bodies can more effectively support countries in their journeys. The Paris Agreement established the Paris Committee on Capacity-building (PCCB) to support the implementation of the Paris Agreement broadly, including the enhanced transparency framework. The Paris Agreement also established the Capacity-building Initiative for Transparency (CBIT), through the Global Environment Facility

(GEF), which is complemented by other international initiatives. As these programs mature, it will be essential to ensure that each initiative mutually reinforces the activities of the others.

This paper is intended to be helpful to a variety of audiences. Domestic practitioners may draw lessons from the highlighted countries and reflect on the key messages throughout the paper to organize their thinking and approaches to capacity building. Beyond the domestic benefits of enhanced transparency processes, this paper intends to help practitioners identify future improvements and the appropriate support to overcome existing barriers. A well-functioning and well-implemented transparency framework is essential to drive more ambitious climate action in line with the long-term goals of the Paris Agreement. Further, this paper builds on the research series from the Project for Advancing Climate Transparency (PACT) consortium. Box ES-2 provides additional background on the PACT consortium.

Box ES-2 | **Project for Advancing Climate Transparency (PACT) Consortium**

In 2016, experts from nine universities, institutes, and nongovernmental organizations (NGOs) around the world formed the PACT consortium to support negotiators in designing the Paris Agreement implementing guidelines. PACT has three main objectives:

- Engaging diverse stakeholders, including members of governments, NGOs, and businesses, worldwide
- Conducting analysis and research to develop ideas for implementing the content of guidelines, for consideration by the Parties
- Enhancing the capacity of various key stakeholders in developing countries

As of February 2019, the consortium had held convenings providing a confidential open space for stakeholders in Africa, Europe, Asia-Pacific, and Latin America and the Caribbean. These forums also enabled PACT to capture ideas and receive feedback.

Publications

Leading up to the "Paris Rulebook" negotiations at the 24th Conference of the Parties (COP24), PACT members produced research papers on key elements of the Paris Agreement's implementing guidelines and identified design options to inform the negotiations.

In this regard, PACT has published a number of reports:

- Mapping the Linkages between the Transparency Framework and Other Provisions of the Paris Agreement
- Designing the Enhanced Transparency Framework Part 1: Reporting under the Paris Agreement
- Designing the Enhanced Transparency Framework Part 2: Review under the Paris Agreement
- The Mechanism to Facilitate Implementation and Promote Compliance with the Paris Agreement: Design Options
- Achieving the Ambition of Paris: Designing the Global Stocktake
- Setting the Paris Agreement in Motion: Key Requirements for the Implementing Guidelines
- Recommendations for Accounting for Mitigation Components of Nationally Determined Contributions (NDCs) under the Paris Agreement

Consortium Partners

The PACT consortium consists of experts from the Caribbean Community Climate Change Centre, the Climate Action Network, Fábrica Éthica Brasil, the Institute for European Studies at Vrije Universiteit Brussel, the NewClimate Institute, the Overseas Development Institute, the Pan African Climate Justice Alliance, Tsinghua University, and the World Resources Institute.

INTRODUCTION

Parties to the United Nations Framework Convention on Climate Change (UNFCCC) endorsed ambitious goals under the Paris Agreement, including achieving a balance between emissions and removals by the second half of the century, to maintain a chance of holding the average global temperature increase to well below 2°C, and if possible 1.5°C, above preindustrial levels. As part of the efforts to achieve these goals, Parties also agreed to adopt an enhanced transparency framework for action and support with reporting and review requirements and to step up capacity-building efforts.

Since the adoption of the Paris Agreement and as countries prepare to implement it, the focus for capacity-building efforts has shifted to the implementing and enhancing of nationally determined contributions (NDCs) and strengthening countries' transparency (measurement, reporting, and verification, or MRV) systems. These two efforts are mutually reinforcing. The implementation of the enhanced transparency framework should serve as a foundation for the "plan-implement-review" cycle that would drive and operationalize not only the implementation of the Paris Agreement at the international level but also the design and enhancement of NDCs at the national level (Dagnet et al. 2018).

The Transparency Framework under the Paris Agreement

The enhanced transparency framework for action and support under Article 13 of the Paris Agreement is designed to apply to all Parties rather than to detail different requirements for developed and developing countries. In recognition of Parties' different starting points and capacities, the Paris Agreement notes that

the enhanced transparency framework is to provide "flexibility to those developing country Parties that need it in light of their capacities." Further, the enhanced transparency framework builds upon existing transparency systems and reflects the collective experiences with those processes. The existing transparency arrangements refer to the reporting and review processes established prior to the Paris Agreement and are still in place until superseded by the Paris Agreement's enhanced transparency framework.

Many developing country Parties still struggle to implement the existing transparency requirements and, for those countries, operationalizing the enhanced transparency framework will present great challenges. There is a strong need for capacity building to support countries as they begin to prepare for the Paris Agreement's enhanced transparency framework. Capacity building in support of UNFCCC objectives is not new. However, to ensure the effective implementation of the Paris Agreement—including its enhanced transparency framework—and the urgency of collective efforts to address climate change, additional efforts are needed to make capacity building more effective. Business-as-usual approaches to capacity building will not drive the transformation called for by the Paris Agreement: the development of a low-carbon, climate-resilient, and inclusive world in a just and equitable manner and in the context of sustainable development and efforts to eradicate poverty. To achieve this transformation, capacity-building efforts must also recognize the relationship between climate action and sustainable development. With the Paris Agreement and the 2030 Agenda for Sustainable Development, adopted months apart, there are growing calls for greater synergy and integration in capacity-building support provided for both international frameworks.

Capacity building in the climate context can be understood as "the process through which governments, individuals, organizations and societies obtain, strengthen and maintain the capabilities to mitigate and adapt to climate change over time."[2] To build and sustain capacity, efforts must go beyond imparting knowledge or experience to individuals and embrace organizations and institutional arrangements (Dagnet et al. 2015). This means adopting a systemic approach that taps into countries' abilities to collect and store statistical information, use and manage it for effective policy implementation, plan government expenditures, and access international financial support. The move toward such a systemic approach would need to be supported by effective governance structures, the necessary regulatory frameworks, enforcement of rules and laws, and protection of individual rights (IMF 2002; Willems and Baumert 2003).

The Paris Agreement recognizes that countries are at different stages of development, with different levels of capabilities. It not only acknowledges that effective capacity building is vital to reach its long-term goals, it also emphasizes the importance of capacity building and education (UNFCCC 2015b). To engage and support the participation of all Parties, the Paris Agreement aims to foster enhanced, strategic, sustained, and possibly transformational approaches for all Parties and wider stakeholders under Articles 11 and 12, that is, capacity building and education, respectively.[3]

The Paris Agreement's transparency framework is "enhanced" compared with the existing transparency arrangements under the UNFCCC, in terms of not only reporting and review requirements but also outcomes. It is a means to an end: The enhanced transparency framework is a tool that equips Parties with more robust, clear, and effective guidelines. This is an attempt to help countries better collect, manage, and share more relevant and higher-quality data, in a uniform manner, and ultimately to more appropriately inform and advance more ambitious climate action. The framework also involves greater reporting on capacity-building support provided, received, and needed by all Parties. These requirements will enable communication of capacity-building successes, identify country needs, help channel support, and reveal where further effort is needed globally.

Achieving the goals of the Paris Agreement through collective action and with the participation of all Parties will require enhanced cooperation, including scaled-up financial and technology transfers to mobilize and strengthen developing countries' capacities. The pace of this strengthening "journey" will differ for each country depending on its stage of development and national circumstances. But with the limited time left to curb the trajectory of global emissions and achieve a climate-resilient society, efforts to enhance capacity building need to be smarter, more effective, and more integrated than they have been over the past 20 years.

Scope, Approach, and Methodology

Capacity-building efforts in support of the Convention have been underway for almost 20 years. The Paris Agreement now places new communication, reporting, and review obligations on all Parties. These new requirements further emphasize the need for additional capacity for some Parties. But where should capacity be enhanced and how can capacity-building needs in support of the Paris Agreement build on the history of capacity building under the Convention?

This paper will aim to answer these two questions by describing key developments in the adoption of the modalities, procedures, and guidelines for the enhanced transparency framework, as adopted by Parties at COP24 in December 2018, and by highlighting key lessons learned from past capacity-building efforts under the Convention. This paper is focused solely on capacity building in the context of the Paris Agreement's enhanced transparency framework. We recognize that full implementation and fulfillment of the goals of the Paris Agreement will require capacity building beyond the transparency framework. However, assessing those efforts is a larger question than can be answered in this working paper.

Because countries are not building their capacities from scratch, this paper attempts to build on the 20 years of experience under this framework by identifying the elements most critical to the effective implementation of the enhanced transparency framework. Dagnet et al. (2015) note that capacity building under the Convention usually aims to achieve one of two goals:

- Improve "the institutional structures, mechanisms, procedures, policies and laws in order to carry out" larger projects; or
- Perform "core functions and objectives relevant to the Convention, for example, the ability to gather, analyze and report specific information requested by the Convention."

In reflecting on these two ways that capacity building takes place under the Convention, we find that transparency-related capacity building occurs at two levels. First, capacity building is needed for governance systems to implement the enhanced transparency framework. Setting up the necessary institutional structures, enabling environments, and governance systems is essential to support the reporting requirements of the Paris Agreement. Second, capacity building is further needed to help countries meet the specific information requirements. For example, countries need direct and specific capacity to report on greenhouse gas (GHG) inventories, such as training on the required methodologies. This approach—the recognition that capacity building for transparency occurs at two levels: those of governance and specific information requirements—is the basis for the analysis and discussions in this paper.

This paper also provides examples of experiences building domestic MRV systems; Box 1 lists the country lessons included in the paper. These examples are not meant to represent all experiences but instead to highlight lessons that may apply to capacity-building efforts related to the enhanced transparency framework and may be replicable. The examples highlighted were selected to reflect a diversity of geographies and states of development. They reflect the dual approach of capacity building for transparency: supporting the governance and information requirements of the enhanced transparency framework. Further, these examples were selected based on interviews with subject experts and the authors' experiences in working on transparency arrangements and the UNFCCC.

Box 1 | **Country Lessons Showcased in This Paper**

This paper features lessons and short case studies from the following countries and consortium of countries:

- Japan
- Ghana
- Lebanon
- South Korea
- Mexico
- United Kingdom
- Colombia
- Vanuatu
- Serbia
- Brazil
- India
- Dominican Republic
- NDC Partnership

This paper is also informed by a literature review, semistructured interviews, and expert responses to an informal questionnaire. This questionnaire gathered expert opinions on key topics such as capacity-building needs, experiences with capacity-building projects from both provider and recipient perspectives, and the role of international agencies and organizations in supporting capacity-building efforts. Questions from the informal questionnaire are included in Appendix A.

Chapter 2 describes the Paris Agreement's enhanced transparency framework and how its transparency requirements enhance existing practices. In addition to highlighting key differences in the requirements, the authors reflect on the challenges and gaps countries may face in providing some of the required data.

Chapter 3 reviews the capacity-building journeys of several countries in building their domestic transparency systems over the past 20 years. The chapter highlights key lessons based on the authors' reflections, relevant UNFCCC technical reports, and brief case studies that illustrate ways countries have tackled some of the key capacity challenges.

Chapter 4 provides background on the approach to capacity building under the UNFCCC and reflects on how various Paris Agreement processes—such as the Article 13 reporting and review processes, the Article

14 global stocktake, and the Article 15 mechanism to facilitate implementation and promote compliance—can support capacity-building efforts. Chapter 4 further examines how the established processes and initiatives under the Convention and the Paris Agreement address capacity building. It maps selected international initiatives focused on supporting transparency.

THE PARIS AGREEMENT'S ENHANCED TRANSPARENCY FRAMEWORK

The Paris Agreement sets up an enhanced transparency framework for action and support that builds on existing arrangements under the UNFCCC. This chapter begins by discussing the enhanced transparency framework and its modalities, procedures, and guidelines, which were adopted by Parties at COP24 in Katowice, Poland, in December 2018. The chapter explores how these guidelines represent an enhancement over the existing arrangements.

The Adopted Guidelines

Transparency and accountability are the backbone of global action to combat climate change under the UNFCCC. Article 13 of the Paris Agreement outlines an enhanced transparency framework both for action and support containing two components: reporting and review. The Paris Agreement notes that the new framework builds from the MRV system put in place under the UNFCCC. In defining how exactly to build on existing processes, countries agreed to the modalities, procedures, and guidelines (MPGs) for the enhanced transparency framework at COP24.

Under the existing transparency system, both Annex I and non–Annex I Parties submit national communications (NCs) at four-year intervals. While the reporting deadlines for Annex I Parties are fixed at every four years (with the most recent due January 1, 2018), the deadlines for non–Annex I Parties are based on the disbursement and provision of financial resources.[4] The Cancún Agreements at COP16 decided to enhance reporting under the Convention and introduce biennial reporting requirements. Annex I Parties were to submit biennial reports (BRs) beginning with the first Annex I BRs due January 1, 2014 (UNFCCC 2010, para. 13). Developed countries have a further obligation to submit annual GHG inventories. In contrast, non–Annex I Parties, consistent with their capacities and the support provided, were to provide their first biennial update reports (BURs) by December 2014. Further, small island developing states (SIDS) and least developed countries (LDCs) can submit BURs at their discretion (UNFCCC 2010, para. 41).

The Paris Agreement's enhanced transparency framework will replace the BRs and BURs with a biennial transparency report (BTR), at the latest by December 31, 2024, when the reporting and review guidance will become the same for all countries. Countries will continue to apply the current system until the submission of the last BRs (no later than December 31, 2022) and last BURs (no later than December 31, 2024). In addition, all countries are still required to provide a quadrennial NC under the UNFCCC.[5]

Figure 1 illustrates the differences between the existing MRV system under the UNFCCC and the Paris Agreement's enhanced transparency framework.

Under the Paris Agreement's reporting process, countries have the obligation to regularly report through a BTR on

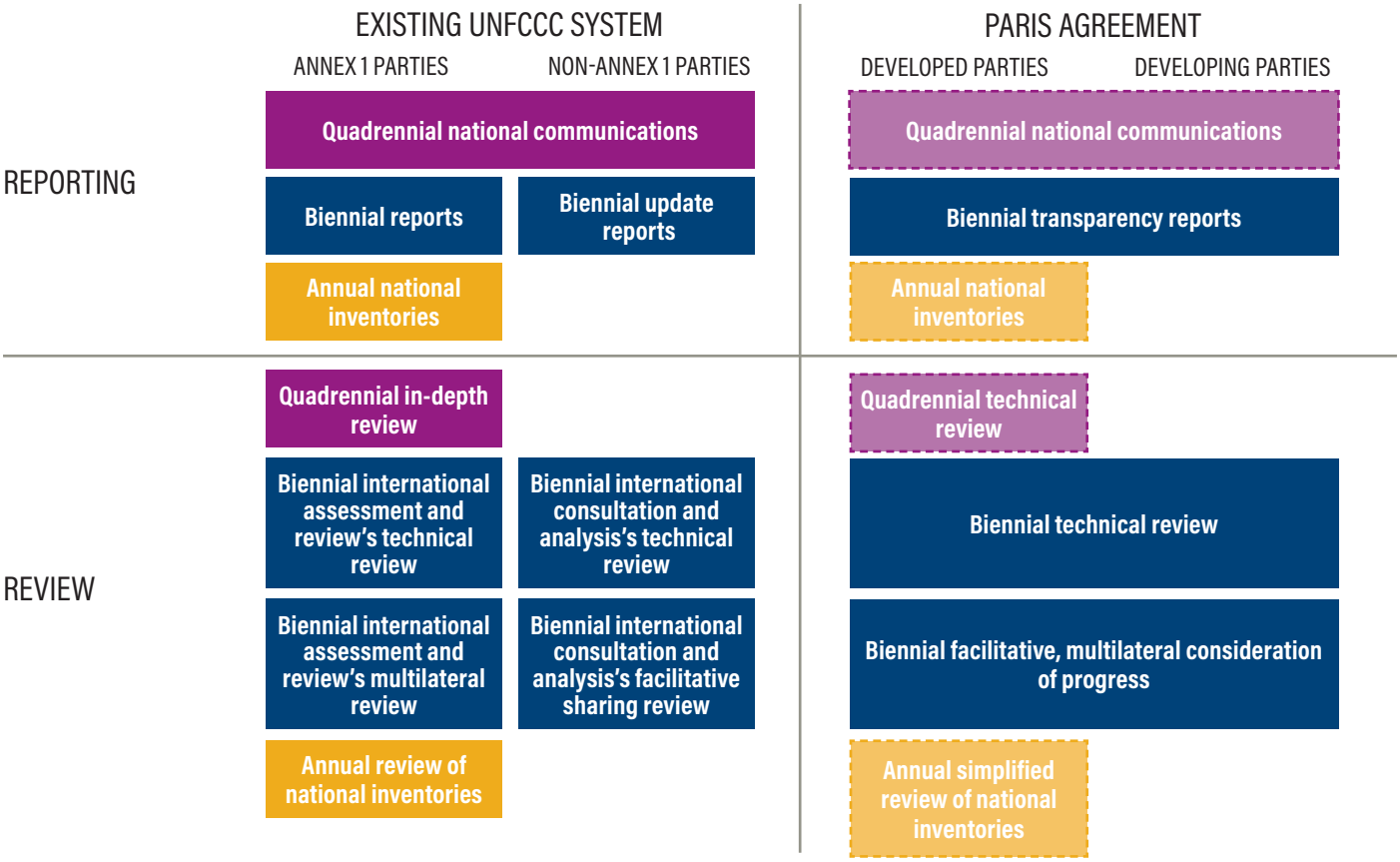
- their national GHG inventories;
- information necessary to track progress made in implementing and achieving their NDCs; and
- information on financial, technology-transfer, and capacity-building support provided and mobilized to developing country Parties (this obligation is mandatory only for developed country Parties; but other Parties that provide support should report).

In addition, all countries "should" (voluntarily) provide information related to climate change impacts and adaptation. Developing countries "should" provide information on financial, technology-transfer, and capacity-building support needed and received. The Paris Agreement recognizes the special circumstances of small island developing states and least developed countries, which may submit BTRs at their discretion (UNFCCC 2015a, para. 90; UNFCCC 2018e, Annex, para. 4).

Following the submission of their national reports, and as part of the review process, Parties will undergo a technical expert review (TER) and participate in a facilitative, multilateral consideration of progress (FMCP) on the mandatory information provided ("shall requirements").

Though the BTR MPGs are the same for all countries, the Paris Agreement recognizes the challenges facing developing countries and thus provides flexibility in fulfilling the requirements to developing country Parties that need it in light of their capacities. The recently adopted MPGs include provisions for flexibility in relation to specific reporting and review requirements. However, it is important to highlight that the application of the flexibility provisions is to be self-determined by the developing country Party, which "shall clearly indicate the provision to which flexibility is applied, concisely clarify capacity constraints, noting that some constraints may be relevant to several provisions, and provide self-

Figure 1 | **The Existing UNFCCC MRV System and the Paris Agreement's Enhanced Transparency Framework**



Note: Solid-colored boxes indicate reports or review processes operationalized by the Paris Agreement. Shaded boxes with dashed outlines indicate reports or review processes that continue under the Convention. Developed country inventories not submitted with a biennial transparency report will be subject to a simplified review, which consists of a check by the UNFCCC secretariat.
Source: Updated from Dagnet et al. (2017) based on UNFCCC (2018e).

determined estimated time frames for improvements in relation to those capacity constraints" (UNFCCC 2018e, Annex, para. 6).

Appendix B illustrates the main differences in the reporting requirements under the current transparency system (through NCs and BURs) and under the Paris Agreement (BTRs). As can be noted, the reporting requirements for the BTR have increased significantly compared with those of the NCs and BURs, in terms of both the content and details of the information required and the legal nature of the requirement ("shall" versus "should" versus "may" versus "encouraged").

Capacity-Building Implications

Even with the flexibility provided in specific provisions, much greater effort will be required of developing country Parties to collect, manage, and treat all the necessary data and information to fulfill the reporting requirements every two years.[6] Since the first BTRs are expected to be submitted to the UNFCCC between 2022 and 2024, there is a short window of opportunity to enhance the capacities in developing countries in order to allow for a sustainable, continuous, and smooth transition from the current MRV system (BURs) to the enhanced transparency framework. This represents a major challenge for capacity-building efforts over the next few years.

National inventories

As noted earlier in this chapter, the Paris Agreement asks Parties to report on GHG inventories, progress toward their NDCs, climate change impacts and adaptation, and support provided or received and needed. All countries are already required to provide GHG inventories under the current MRV system; the submission of these inventories from developing countries has been irregular, however. As such, countries have flagged a number of challenges and capacity needs related to developing inventories (UNFCCC 2017a, para. 35; UNFCCC 2018b, para. 34). Because of the challenges in collecting and submitting inventories regularly for 39 (out of 88) non–Annex I countries, the latest GHG inventories do not

include data after 2010 (Vaidyula and Rocha 2018). For GHG national inventories, most developing countries—even those that are already using the 2006 Intergovernmental Panel on Climate Change (IPCC) guidelines—do not currently have the necessary institutional arrangements, human resources, and data availability to elaborate full inventory estimates every two years with the level of detail required by the MPGs and the "good practices" of the IPCC guidelines. In several cases, the current institutional arrangements are based on the use of external consultants and data collection from governmental and nongovernmental sources that don't yet have established formal contracts to allow for a timely (i.e., biennial) and efficient flow of information. In other cases, there is a lack of data at the country level.

Parties have also noted challenges related to sustainably collecting, managing, and coordinating relevant data (UNFCCC 2017a, para. 35; UNFCCC 2018b, para. 34). In particular, Parties have expressed support needs for emissions factors specific to developing countries (UNFCCC 2017a, para. 35; UNFCCC 2018b, para. 34). Without this information, the inventories submitted by Parties can be over- or underestimated, compromising the accuracy of the final inventory estimates. As the IPCC works to refine its guidelines for conducting future national GHG inventories, Parties are still seeking capacity building for the 2006 IPCC guidelines.

Tracking progress

Reporting on progress toward mitigation targets and goals will be new for developing countries (Vaidyula and Rocha 2018). Under the enhanced transparency framework, countries will need to elaborate the indicators that they will use to track progress. This information will then need to be presented in a structured summary, including information on the reference level and baselines and the most recent information on the selected indicator. Countries will need support to build their domestic MRV systems so that they are responsive to these new requirements to develop indicators and present progress against them.

Projections

Another area where developing countries will face great challenges is in elaborating projections. Most national governments have limited or no experience in developing projections of GHG emissions and removals as required by the MPGs (i.e., "with measures," "with additional measures," and "without measures"). When projections exist, they are developed by resource institutions and/or universities and may not have an "official" status.

Adaptation

Under the Paris Agreement, countries should also report on climate change impacts and adaptation. To support this reporting, Parties have expressed the need to bring climate risk modeling into national and sectoral plans (UNFCCC 2017a, para. 36). For example, Saint Lucia noted challenges in downscaling its climate risk modeling. Larger-scale modeling, as currently available, is difficult to integrate into current plans (Government of Saint Lucia 2017). Additional research on the domestic sectoral impacts of climate change can further facilitate these analyses and their integration into national planning. Without support, Parties may not be able to fully explore their opportunities for communicating information on climate change impacts and adaptation, under either the Paris Agreement's adaptation communication (Article 7) or its enhanced transparency framework (Article 13).

Support

All Parties, both developed and developing countries, continue to struggle to provide consistent and comprehensive data to track support provided and mobilized, or received. The lack of definition of climate finance may help partially explain some of these challenges (Bodnar et al. 2015). The lack of robust or incomplete financial data weighs heavily on countries' abilities to establish a trustworthy tracking system. But the way climate finance is managed and programmed can also affect countries' abilities to track associated commitments.

Countries have identified two distinct finance-related capacity gaps. First, countries need support to be able to access climate finance. For example, accessing some international climate finance requires familiarity with the procedures and processes of some providers. Some have noted their need to be able to request support more simply and quickly. This ability goes beyond simply being aware of the available resources; it also entails having the capacity and familiarity with resources needed to access them efficiently. Second, countries have noted the need for support in building frameworks to track and manage finance received. Cambodia noted that its "financial management mechanisms to effectively implement the adaptation and mitigations . . . are not in place" but reiterated its work "to build climate change financing and monitoring and evaluation frameworks" (GSSD 2015).

Market mechanisms

Parties have yet to agree on the modalities, procedures, and guidelines related to Article 6 of the Paris Agreement. Countries are still negotiating the fate of the Clean Development Mechanism (CDM) and the role it will play under the Paris Agreement. However, countries have expressed capacity-building challenges relating

to the CDM, such as ensuring that their designated national authority is fully operational despite capacity constraints and an absence of institutional structures (UNFCCC 2016, para. 60). In response, the need for training programs has been identified (UNFCCC 2016, para. 61). The Executive Board of the CDM continues to provide relevant support, including the training of designated national authorities (UNFCCC 2017a, para. 26; UNFCCC 2018b, para. 24). Regional collaboration efforts are also underway to enhance capacity (UNFCCC 2017a, para. 26; UNFCCC 2018b, para. 24). While the guidelines under Article 6 are still being developed, countries intending to use market mechanisms should strengthen their MRV systems, since participation in market mechanisms will require more stringent monitoring, reporting, and verification.

LESSONS FROM CURRENT EFFORTS AND NEEDS

Under the existing reporting requirements, non–Annex I Parties are requested to provide information on their capacity-building needs and activities. With Decision 2/CP.7, the Conference of the Parties (COP) agreed to the framework for capacity building in developing countries and mandated the secretariat to prepare an annual report on the implementation of the framework. As such, the secretariat's annual report focuses on the following information and its relation to the capacity-building priority areas highlighted in Decision 2/CP.7:

- Capacity-building activities undertaken by developing country Parties
- Needs, gaps, and constraints that such Parties have indicated
- Support provided by developed country Parties (UNFCCC 2017a, para. 4)

The annual synthesis reports draw on information reported by Parties in their national communications and biennial update reports. Drawing on the secretariat's work in preparing these syntheses, we can begin to highlight a number of key lessons. This chapter combines lessons from the challenges highlighted in country reports and the secretariat's syntheses with a number of short case studies highlighting country efforts to build capacity.

Box 2 provides an overview of the key lessons shared throughout this chapter and the associated case studies.

Box 2 | **Summary of Key Lessons and Case Studies**

This chapter provides a number of key lessons from capacity-building experiences under the Convention, including the gaps and needs as identified by countries in their international reports. Complementary case studies provide illustrative examples of how countries are addressing these challenges.

Key lessons:

- **Building and mobilizing developing capacity is a process that takes time and requires countries to "learn by doing."** A case study from Japan illustrates the multidecade process of building national MRV systems. Ghana's example underscores the value of building on existing structures.
- **Capacity for transparency can be strengthened through enhanced governance and institutional structures.** Lebanon has made efforts to enhance its institutional structures through coordination. Its case study illustrates one approach to building institutional structures. A case study from the Republic of Korea illustrates that country's approach to working with external stakeholders, including the private sector, and how this approach fits into the governance structure.
- **Legal architecture, supported by an enhanced governance structure, can play a key role in sustaining regular tracking of countries' efforts.** Reporting on adaptation has historically been difficult, but a Mexican case study illustrates how legislative arrangements have supported Mexico's efforts to improve its adaptation data. A case study from the United Kingdom demonstrates one approach for tracking progress toward climate goals based on a unique legal architecture.
- **Tracking tools and platforms are emerging to increase countries' abilities to monitor support received and progress toward their commitments.** To support reporting of support received, Colombia has built an innovative system for tracking finance received. The NDC Partnership's collaborative planning instruments help countries develop indicators toward implementation of their NDCs.
- **Capacity building can be strengthened by leveraging opportunities for integration of sustainable development goals and efforts for policy coherence.** Vanuatu is exploring opportunities to integrate reporting and tracking of climate and sustainable development actions. Serbia is exploring opportunities to more explicitly incorporate gender considerations into its climate transparency work.
- **Lasting systems and knowledge are critical to building capacity.** Active civil societies in Brazil and India conduct their own GHG emissions estimates, building expertise and learning within the country. The Dominican Republic engages academia in an effort to sustainably build and anchor long-lasting knowledge.

Key Lesson: Building or developing capacity is a process that takes time and requires countries to "learn by doing."

Countries have noted a capacity-building need related to the development of domestic MRV systems (UNFCCC 2017a, para. 44). Developing MRV systems is a process that will take many years, especially as the systems evolve in response to national circumstances and national needs. As the enhanced transparency framework requires Parties to provide information to track progress toward their NDCs, domestic MRV systems will allow Parties to better track and assess the progress of the implementation of their NDCs. Countries cannot be expected to meet reporting requirements without being given the opportunity to build capacity over time. Expectations that capacity will be built overnight or in the immediate short term are unrealistic.

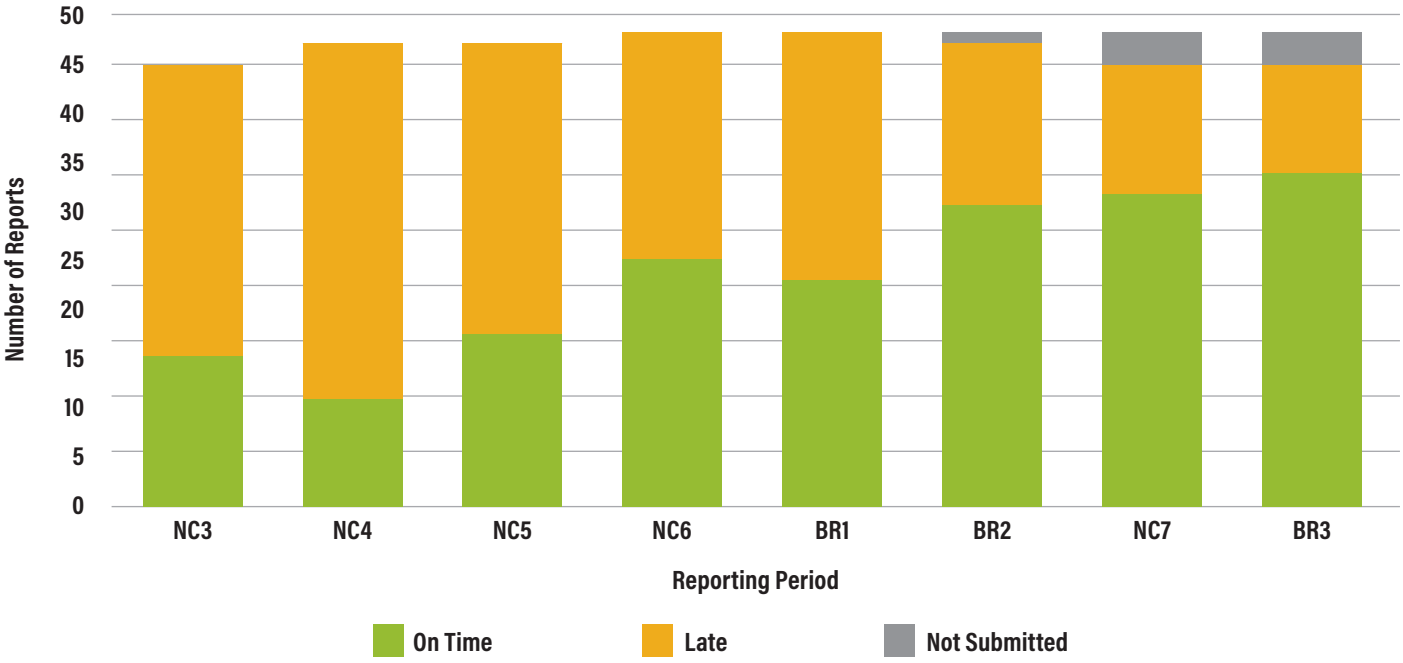
As we transition to the new enhanced transparency framework, one key question is if Parties will be able to submit their reports at the frequency required. Annex I countries are likely to be able to meet reporting deadlines and maintain biennial reporting given their lengthy experience of reporting under the Convention and the Kyoto Protocol. Since 2001, all NC3s, NC4s, NC5s, and NC6s have been submitted. Only one BR2 and a couple of NC7 and BR3s (submitted together at the beginning of 2018) are still outstanding.[7]

Over this period, Annex I Parties have increased the rate at which they submit their reports by the stated deadlines. NC6 (2014) was the first report to have more than half (23 of 44) of reports submitted by the deadline. Figure 2 below illustrates the steady progress that Annex I Parties have made in submitting their NCs and BRs by the deadline—increasing from only 24 percent of NC4s to 70 percent of BR3s on time.

Not only have Annex I Parties improved their abilities to report by the deadline, those that miss the deadline have reduced the time by which they submit their report "late." The average late NC3 was submitted nearly two years and five months after the deadline, while NC6s were, on average, submitted only three months after the deadline. With several NC7s and BRs still outstanding as of February 1, 2019, more than 13 months after the deadline, this most recent cycle of reports represents a step back for Annex I Parties. Figure 3 illustrates the average lateness of Annex I reports and demonstrates the improvement that Parties have made in submitting their reports closer to the deadline.

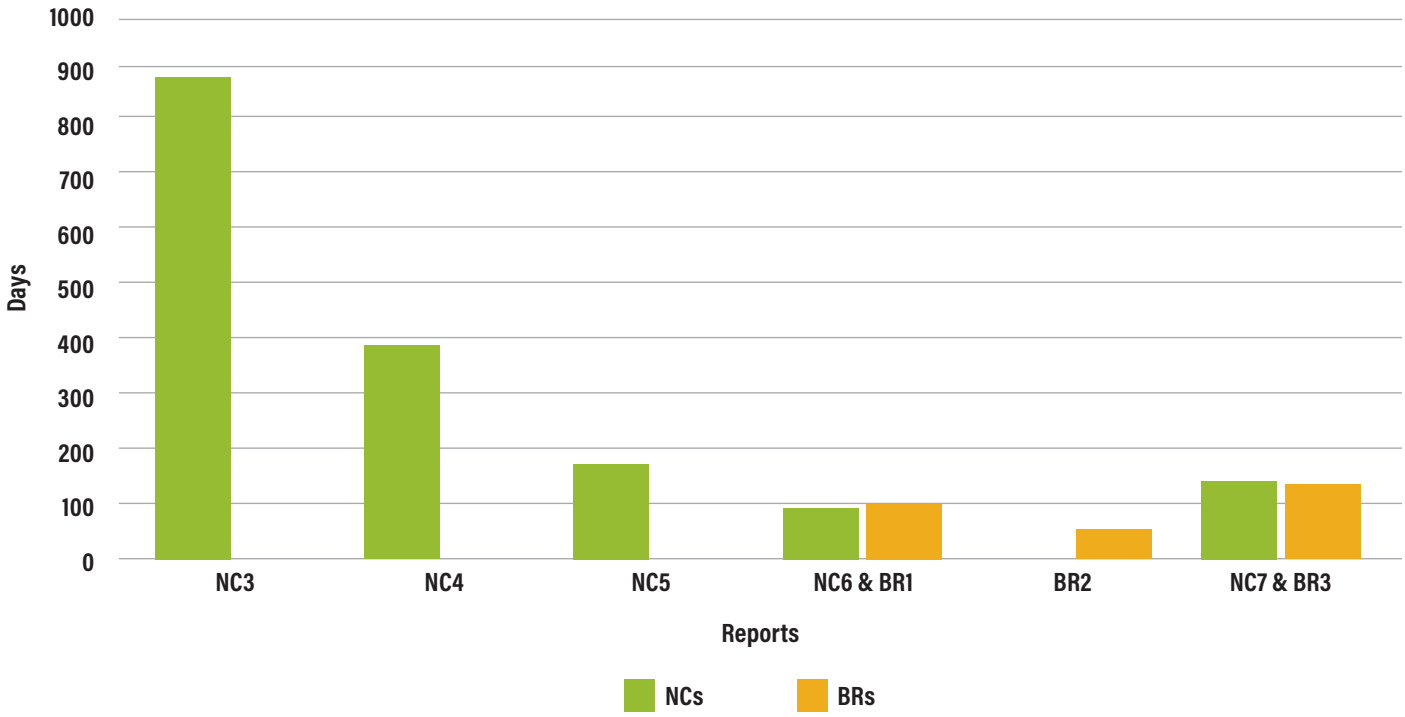
Although Annex I Parties now largely submit their reports at or near the deadline, they needed to build their reporting capacities over time. Expectations for on-time reporting without the requisite history or experience of preparing reports are not realistic. Countries clearly need to be granted the necessary time to improve processes to meet requirements.

Figure 2 | **Timeliness of Annex I Biennial Reports (BRs) and National Communications (NCs)**



Note: The reports are presented in the order in which they were due to be reported, regardless of the type of report. This table reflects data current as of February 1, 2019.
Source: Dagnet et al. (2019).

Figure 3 | **Average Delay in Late Reports for Annex I Parties**



Note: The reports are presented in the order in which they were due to be reported, regardless of the type of report. This table reflects data current as of February 1, 2019.
Source: Dagnet et al. (2019).

For non–Annex I Parties, the picture is very different. As of February 1, 2019, only 45 countries had submitted their first BUR. Similar analyses for non–Annex I Parties are not comparable because the deadlines for reporting are based on whether the Party receives the requisite support. For non–Annex I Parties, delays in reporting are not just a symptom of less capacity but also a product of the support system. Delays in receiving support have an impact on the Party's ability to report by an intended deadline even if the Party aims to do so. Therefore, timely and sustained support is an important prerequisite for assisting developing country Parties in submitting reports by a deadline.

In some cases, preparing reports can do more than just meet international requirements. Some Parties have indicated that the reporting processes necessary to prepare their NCs and BURs are themselves a capacity-building exercise and support the use of collected data for alternative purposes. Report preparation fosters "learning by doing." Ecuador has noted that the engagement stemming from preparation of the reports allows for active dialogue and consultations with various stakeholder groups (UNFCCC 2018b, para. 26). Not all countries find this to be the case. Some countries and experts have noted that no action tends to follow the submission of the reports, either in terms of recruiting additional capacity-building support or advancing domestic climate action. Therefore, in some instances, the reports are seen only as an international requirement without necessarily furthering domestic integration and collaboration. For the "learning by doing" and capacity-building processes to be effective, they must serve domestic purposes as well.

Country lessons: Japan, Ghana

Creating an effective, robust inventory system takes time and significant resources, as well as supportive legislative and institutional instruments. But countries should not wait until they have built the perfect system to engage fully in the regular estimation and reporting of GHG emissions. Here lessons from a developed country (Japan) and a developing country (Ghana) illustrate different stages in the process of learning. Because of earlier requirements placed on Japan, it has progressed significantly in building its capacity and institutional arrangements. Similarly, Ghana is building capacity over time based on its experiences.

For example, it took about 17 years for Japan to reach the level of sophistication portrayed in Figure 4 below. The journey started in 1992 with, as in many developing countries, a small inventory team consisting of staff from the Environment Agency and private consultants. Japan enhanced its original MRV system by setting up an inventory committee to develop and review the methodologies for estimating GHG emission reductions

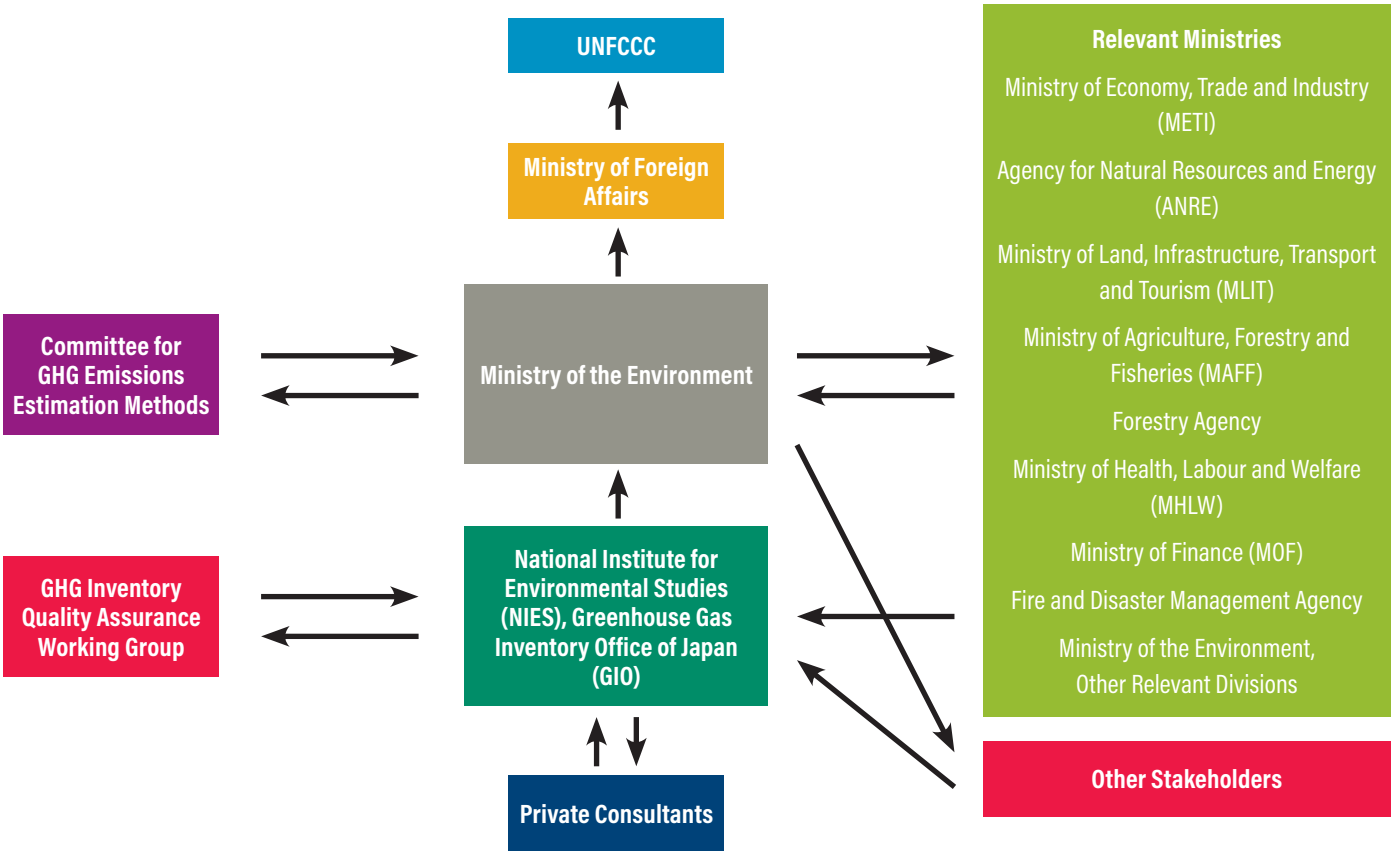
and engaging a broader set of stakeholders, including NGOs and academia. Japan then improved institutional arrangements further to meet the requirements of the Kyoto Protocol and enhance its quality assurance and quality control processes.

As part of this learning process, Japan developed clear roles and responsibilities and organized cross-governmental coordination, which are critical for success (Singh et al. 2016). Figure 4 illustrates a very sophisticated MRV system involving all line ministries but distinguishes the critical role of the national designated entity, the National Institute for Environmental Studies, in data collection, analysis, and recording and in the establishment of advisory bodies to perform quality insurance and verification activities and inform the design of methodologies. Mitsubishi UFJ Research and Consulting (2014) illustrates and discusses the history of Japan's journey in experiences in preparing national GHG inventories. In 1997, an ad hoc expert committee considered revisions to Japan's arrangements. Several years later, the Ministry of Environment was formed and took responsibility for preparing the national inventories. In 2002, Japan created the Greenhouse Gas Inventory Office to organize work in support of the inventory. Throughout this process, Japan continued to engage relevant ministries—slowly breaking down walls between ministries so that ministries now engage more actively.

Nearly 30 years ago, Japan's process and national arrangements for the inventory consisted of a small team, with limited engagement from other ministries. However, by building its arrangements slowly, Japan was able to work through barriers between ministries and establish a more complex institutional structure. Rushing to implement the current structure at the beginning of the process might have introduced only additional burdens. This example illustrates the importance of building processes over time and continuing to adjust institutional arrangements to best fit into the domestic national circumstances.

In the context of a developing country, Ghana's transparency institutional arrangements are continuing to evolve as it builds its capacity over time and learns from its unique experiences. Ghana's current efforts include the Climate Ambitious Reporting Program (GCARP), which was established in 2013 to enhance domestic MRV systems and improve reporting. The main object of GCARP is to develop a data management system to serve both domestic and international reporting requirements.

Figure 4 | **Japan's MRV System**



Source: Adapted from Mitsubishi UFJ Research and Consulting (2014).

Further, one of the four key functions of GCARP is to revise the country's institutional arrangements (Effah and Pahuja 2015). Updated institutional arrangements were designed to build upon existing relationships and experiences, while bringing together new experts and institutions (Effah and Pahuja 2015).

Among the lessons and challenges from this project, Ghana noted that full implementation of the program is slow and tough, but that starting anew would be extremely expensive and bring its own challenges (Asubonteng and Benefoh 2017). An important lesson learned is that it is important to focus on what currently works and strive to strengthen that. This also provides an opportunity for consistent progression and mainstreaming of improvements into the government's way of working (Asubonteng and Benefoh 2017).

While Japan took time to build its current institutional arrangements, Ghana has noted the importance of "learning by doing" with a plan to build on existing systems and structures with an eye for continuous improvement.

Key Lesson: Capacity for transparency can be strengthened through enhanced institutional arrangements.

Building capacity to put in place institutional structures can in turn help ensure the effectiveness of further capacity building. The effective exchange of information is fundamental. In some instances, institutional frameworks are not yet able to coordinate the range of new or emerging initiatives.[8] Even as countries invest in building appropriate institutional structures, they also need to invest in building the necessary expertise to support these structures. In discussing the continuing challenge of strengthening the institutional arrangements for national reporting (i.e., NCs and BURs), some countries have highlighted the need to train and retain national experts, thereby lessening dependency on external support (UNFCCC 2017a).

The institutional arrangements in each country will vary based on that country's unique national circumstances and broader government structures. Despite these differences, however, lessons can still be learned about how other countries organize their institutional arrangements. The case studies below emphasize some broad elements, such as coordinating mechanisms' stakeholder engagement with data providers.

Country lessons: Lebanon, Republic of Korea

INSTITUTIONAL AND COORDINATING MECHANISM

In order to make the process more effective, capacity-building efforts need to respond to a country's domestic needs and provide benefits beyond the MRV system. In its BUR2, Lebanon described how it made fulfilling transparency reporting requirements meet domestic needs as well. The BUR2 notes that Lebanon's BUR expert team had prepared more than a simple report and had begun "drafting a vision for efficient institutional arrangements and transparent reporting . . . for the Paris Agreement implementation era" and that this process has led to "national momentum for a broader involvement of national stakeholders" (Republic of Lebanon 2017a).

One of the key challenges for Lebanon is creating an institutional system that supports the collection, exchange, storage, and use of relevant data across national institutions. In its first and second BURs, Lebanon listed a number of gaps and needs related to the management of data:

- Lack of arrangements for data monitoring and reporting
- Dispersal of data across national agencies
- Hesitation to share data between public and private institutions
- Time delays in gathering and accessing data
- Dependence on informal data-sharing and collection agreements

Lebanon has long sought to address these joint challenges through the creation of a holistic MRV system. The creation and development of an MRV coordinating entity (MRVCE) is a key component of Lebanon's Capacity-building Initiative for Transparency (CBIT) project proposal, though suggestions for a similar unit date back to at least the first BUR (Republic of Lebanon 2015). The MRVCE will focus on supporting the measurement of progress toward climate policies, including NDC goals, and assessing ways to improve the effectiveness of the nation's transparency strategy (Republic of Lebanon 2017b). Together with an MRV network of partners, the MRVCE will support the coordination of existing mechanisms while aiming to improve cooperation, reduce duplication, and leverage synergies (Republic of Lebanon 2017b). Building a coordinated institutional structure will support Lebanon's efforts to improve the collection, exchange, and management of data for the enhanced transparency framework and contribute to improved governance of the framework.

STAKEHOLDER ENGAGEMENT

One of the main challenges faced by countries is the data gap—where countries do not have the data they need because of a lack of data supply arrangements or inadequate cooperation from data providers, including other government agencies or private sector companies. Such impasses can result from companies' reluctance to share confidential data due both to competition concerns and fear of burdensome and duplicative reporting requirements (with similar information required by various ministries or departments, at different times and for different purposes). In both cases, effective and in-depth consultation and negotiation with the private sector will be critical to address perceived technical, procedural, or trading barriers and to identify solutions that enhance trust and cooperation between the government and business actors, and build ownership of the scheme by companies.

The Republic of Korea's GHG and Energy Target Management System (TMS), established in 2010 as a component of the Korean National Green Growth Strategy, sets targets for businesses and collects data to track progress (Korea Energy Agency 2015). The development of the TMS was based on thorough consultation and negotiations between the government and private companies to

- set specific reduction targets for energy consumption and, more broadly, GHG emissions;
- design standardized procedures for measurement and reporting (codesigned by the government and companies), setup of independent third-party verification, and public disclosure of data from companies; and
- generate time-series analysis to track the level of emissions reduction and the degree of compliance with standards (Shrivastava 2015).

By developing the TMS alongside businesses, the government was able to promote cooperation between the government and the private sector, build trust, and ensure ownership by key stakeholders (Shrivastava 2015).

Over the 2015–18 period, the TMS grew from 85 to 840 industrial companies. Company reporting under the system follows a robust annual work cycle that includes setting targets, sharing and verifying implementing plans, and meeting the reporting requirements (Shrivastava 2015). This annual cycle supports the government's preparation of national communications and biennial update reports. In the end, the TMS provides a model for regular tracking of GHG emissions, with a strong data set, independent expert verification, and a whole-of-government approach (Shrivastava 2015).

Key Lesson: Legal architecture, supported by an enhanced governance structure, can play a key role in sustaining regular tracking of countries' efforts.

While institutional arrangements are important for preparing reports under the enhanced transparency framework and for coordinating information, strengthening existing legal architectures or establishing clear new ones can be a key enabling factor for sustaining periodic assessment and reporting of countries' efforts. As illustrated in the case studies below, such legal architectures require political buy-in and leadership at the highest level. This enables them to generate or mobilize new capacities, fostered by the establishment of procedures and independent institutions to facilitate compliance and enforcement and reduce potential administrative burden on existing bodies (Singh et al. 2015).

Furthermore, clear legal architectures could be an important enabling factor for generating data and using it appropriately to inform policy design and shape the decision-making process. The legislative framework can establish mandatory reporting to implement GHG reporting provisions consisting of compulsory, timely, and systematic reporting of GHG emissions from all sectors (as done in the United Kingdom under its Climate Change Act 2008), as well as regular climate change risk assessments that can inform adaptation measures. This legislative signal could be important to secure a sustained budget for staff to perform the minimum requirements on a continuous basis. The case studies below highlight how such legislative signals and associated governance architectures have enhanced the countries' capacity to monitor their adaptation efforts (Mexico in particular) and track progress toward national and international goals in line with a five-year cycle (United Kingdom).

Country lessons: Mexico, United Kingdom

STRENGTHENING CAPACITY FOR ADAPTATION DATA MANAGEMENT

On-the-ground experience in setting up systems for national monitoring and evaluation (M&E) for adaptation is still scant. Mexico has emphasized mainstreaming vulnerability assessments in policymaking and prioritizing adaptation in national and sector policy planning and budgeting. Political leadership has been a key ingredient over the past two decades to support vulnerability assessments for several climate change scenarios. NCs include assessment of climate change vulnerability in the areas of water resource scarcity, forestry, agriculture, coastal zones, drought, and desertification, with specific emphasis on the Gulf Coast region. The National Institute of Ecology and Climate Change also measured the vulnerability of 480 municipalities.

A critical success factor has been the legally binding mandate for an M&E adaptation system included in Mexico's General Law on Climate Change, adopted in 2012. The law requires that national adaptation policy be underpinned by measuring, monitoring, reporting, verification, and evaluation instruments (Articles 26 and 27), including vulnerability and adaptation indicators in the Climate Change Information System (Article 77). These legislative requirements have helped spur all institutions to use indicators, tracking systems, and evaluation to inform policymaking.

STRENGTHENING CAPACITY TO TRACK PROGRESS TOWARD NATIONAL AND INTERNATIONAL COMMITMENTS

In another case, the United Kingdom has built a system for tracking progress based on domestic law. The United Kingdom's Climate Change Act 2008 introduced carbon budgets that set legally binding limits on the total GHG emissions allowed in five-year periods. The first budget covered the years 2008–12. These budgets are used to align the trajectory with the United Kingdom's long-term target of at least an 80 percent reduction in emissions by 2050 compared with 1990 levels. The overall approach of the MRV system includes an annual evaluation of progress toward meeting the carbon budgets, carried out by the independent Climate Change Committee, which prepares a detailed report on national and sectoral GHG emissions as well as a variety of indicators, including at the level of individual mitigation actions. The United Kingdom met the first and second carbon budget targets for 2008–12 and 2013–17.

The United Kingdom's underlying MRV system was key to supporting this tracking process. Several elements have been noted as particularly important to the success of this approach (Kilroy et al. 2017):

- Tiered indicators for evaluating policies and measures allow for assessments of emission trends and their causes.
- Wide-ranging data sources provide insights into the reasons for emission trends, including on contextual factors.
- Forward-looking indicators can provide a picture of what needs to happen to meet the budget.
- Preexisting and high-quality emissions data derived from the national GHG inventory are used as the basis to track progress.
- Five-year budgets allow high emissions in one year to be compensated for by lower emissions in another year, as long as the five-year budget is met.
- Independent evaluations by an NGO give the results legitimacy.

While the United Kingdom's experience may not be easily replicated in its entirety, it demonstrates the importance of setting interim or short-term goals and establishing a process to track progress toward these goals within the context of a larger goal.

Key Lesson: Tracking tools and platforms are emerging to increase countries' abilities to monitor support received and progress toward their commitments.

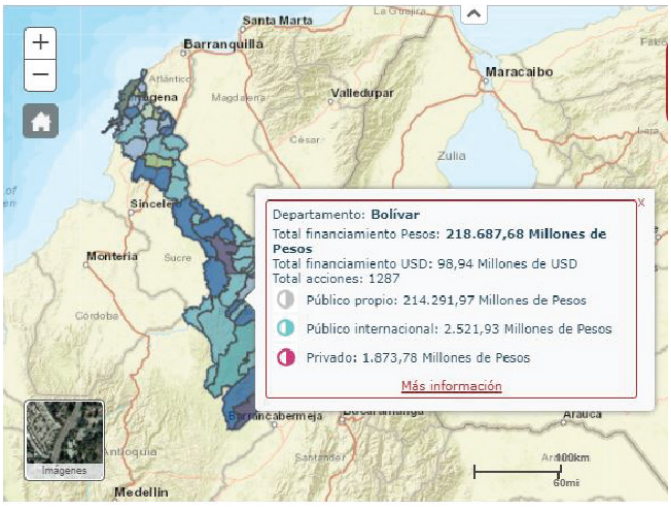
Countries' abilities to assess and monitor the impact of their actions, together with the financial flow supporting such actions, using relevant indicators, based on the type of contributions (targets) they committed to, is a critical condition for the implementation of the enhanced transparency framework and collective assessment of the Paris Agreement's goals. As highlighted below, new tools and approaches are emerging that can boost countries' capacities to track not only their progress toward the implementation and achievement of their NDCs but also the finance provided and mobilized or received.

Country lessons: Colombia, NDC Partnership

STRENGTHENING THE CAPACITY TO TRACK SUPPORT RECEIVED

In order to better understand and track how much funding is being channeled toward mitigation and adaptation projects (both national and international), Colombia has designed a public and user-friendly online platform with infographics, tables, and maps (Figure 5). This platform tracks not only public (domestic and international) finance flows but also private ones at the project level. The platform is effective because it allows users to download climate finance data and see them through various variables, for instance, by sector, state,

Figure 5 | **Illustration of the Climate Finance Platform**



Source: Reproduced from Masullo et al. (2017).

municipality, financial source, and financial instrument (Masullo et al. 2017). The platform has helped give government officials, citizens, and other users a significantly more complete picture of climate finance flows, as well as a better understanding of how the financial resources have been invested and the gaps that remain.

Colombia has also established a Financial Management Committee tasked with producing policy guidance to scale up, track, and report climate finance. With other partners and stakeholders, the Department of National Planning has developed methodological guidelines to help decision-makers at the national and regional levels identify, classify, and assess sources of climate finance consistently. The committee also promoted coordination and dialogue on finance and climate change.

As a result, the platform has significantly improved the decision-making process, accountability, and trust between government and its key stakeholders and partners, as well as international reporting on finance. In its third BUR, submitted in December 2018, Colombia noted that thanks to the platform, "the country has an ever better control and reporting" of the resources it "receives to support its fight against climate change" (Gobierno de Colombia 2018).

STRENGTHENING THE ABILITY TO ASSESS PROGRESS TOWARD IMPLEMENTATION AND ACHIEVEMENT OF NDC GOALS, AND TO MONITOR CAPACITY BUILT THROUGHOUT THE IMPLEMENTATION PROCESS, USING A "ONE-STOP-SHOP" TOOL

The NDC Partnership is a global coalition of more than 80 countries and 30 international institutions launched in 2016 at COP22 in Marrakech "to enhance cooperation so that countries have access to the technical knowledge and financial support they need to achieve large-scale climate and sustainable development goals as quickly and effectively as possible" (NDC Partnership n.d.). Many countries that sought support from the NDC Partnership to implement and enhance their NDCs have been developing a mapping, tracking, and mobilization tool called the Partnership Plan.

The Partnership Plan consists of a mapping of existing and needed technical-assistance, capacity-building, and investment projects; a cartography of existing and potential donors and implementing partners; and the identification of clear outputs and outcomes together with a series of performance indicators and entities leading or driving the implementation of specific projects or assistance. The development of such a plan requires the mobilization of relevant stakeholders (e.g., private sector entities, civil society organizations, implementing partners, and development partners) through various workshops, roundtables, and bilateral consultations.

From the 15 Partnership Plans produced so far, a number of benefits for countries have been realized:[9]

- The plans have provided a holistic picture of countries' needs (including capacity building more broadly, together with the technical assistance required to strengthen the monitoring and evaluation systems), as well as of existing and potential interventions to address them. Having such a picture helps countries identify and manage areas that need resource mobilization.
- The plans have served as a planning and monitoring tool to track results and progress transparently as they identify forward-looking indicators, providing a picture of what is desired or expected to happen and by when, together with indicators evaluating the status of planned policies and measures over time.
- The plans have ensured harmonized programming and identified synergies among interventions.
- The plans have created ownership by identifying clear roles and responsibilities of the national and implementing partners involved.
- The plans have enhanced transparency and accountability, and therefore trust, between governments and their national stakeholders and international partners.

With so many functions, the Partnership Plans serve as valuable "one-stop-shop" tools not only to understand progress in implementation and toward NDC goals, but also to assess countries' progress in building their capacities over time.

Emerging approaches for data management systems

Blockchain technology, also known as distributed ledger technology, is emerging as a new area of research and development whose application to GHG data management systems could help build trust in emissions inventories and the use of market mechanisms. In a "blockchain," each added block of data is "chained" and becomes part of a growing list of records, supervised by the members of the network. At a time when the reliability of reported data is becoming paramount for society, especially for sensitive (high-risk) purposes like supporting carbon pricing mechanisms, the transfer of assets and the recording of transactions through a secure database, as enabled by this technology, could be promising.

While this technology is not yet mature, many applications for climate-related MRV are emerging (Cage 2019). For instance, in Thailand, the Siam Solar Energy project, led by the private sector, is using blockchain to accelerate the data verification process, allowing real-time tracking of GHG carbon inventories and automated issuance of carbon credits. The technology is expected

to significantly reduce the costs and time associated with the issuance of carbon credits (South Pole 2018). Similarly, in Costa Rica, the Ministry of Environment and Energy intends to develop an open-source blockchain registry to track national offset units traded in market-based mechanisms under Article 6 of the Paris Agreement, or like Japan's Joint Crediting Mechanism (Fuessler et al. 2018), while Jamaica's support request to the CBIT includes exploring the use of blockchain to enhance its data management system. As part of its 2020 smart-city strategy, the city of Dubai considered using a blockchain for transactions between businesses (smart contracts on energy and transport), as well as for a variety of legal, accounting, and quality assurance tasks. Dubai has envisioned using the same system for climate-related MRV applications.

Blockchain is emerging as a transformative digital technology in digitizing and automating MRV by improving security, efficiency, and transparency in a range of climate-related management applications. It is expected to first be used to improve transparent storage and recording systems for GHG emission reporting, especially for carbon emission trading under Article 6. But it could also foster higher participation, enhanced ambition, and large-scale investments in climate actions to achieve the Paris goals.

The technology requires further screening, however, and must be accompanied by adequate governance systems, protocols, regulations, and institutional arrangements (Cage 2019). Other challenges, such as energy use, linking digital and physical processes, security, and privacy, need to be further considered (Brunsdale 2019). To encourage further studies and the deployment of this technology in support of climate action, the UN Climate Change secretariat has initiated and facilitated the creation of the Climate Chain Coalition (UNFCCC 2018a).

Key Lesson: Capacity building can be strengthened by leveraging opportunities for integration of sustainable development goals and efforts for policy coherence.

There is growing recognition of the need for greater synergy and integration between the operationalization of enhanced transparency systems for mitigation and adaptation actions, and efforts to establish monitoring and evaluation frameworks for the 2030 Agenda for Sustainable Development and other related agendas, such as the Sendai Framework for Disaster Risk Reduction. Mexico, for instance, has also enhanced integration between mitigation, adaptation, and development policy monitoring systems to better inform its policymaking. The country is among the first Parties to have monitored both mitigation and adaptation activities under a single system. This approach allows policymakers to consider and assess synergies between mitigation and adaptation efforts to enhance policy coherence and effectiveness, and to integrate monitoring efforts to reduce costs (Kuhlmann 2014).

Similarly, because climate actions embedded in the NDCs and the Sustainable Development Goals (SDGs) are deeply interconnected, both agendas entail immense data, monitoring, and reporting challenges. Yet, in most countries, distinct monitoring and reporting frameworks have been developed for climate action and SDG implementation. Progress is not currently monitored and reported in a consistent and harmonized fashion. This separation can generate duplications, increase the reporting burden for sector ministries and local actors, and lead to missed opportunities for greater policy coherence.

Linking NDC and SDG monitoring frameworks and improving efficiency in related data collection would help policymakers better understand and address policy linkages, potential trade-offs, and synergies between climate action and other sustainable development priorities. More integrated approaches would also facilitate the assessment of climate change impacts on the poor and most vulnerable, especially women, thus promoting alignment of NDC implementation with the pledge to "leave no one behind," which is central to the 2030 Agenda. More comprehensive reports and reviews addressing such linkages would inform the design of more coherent and effective policies.

Capacity-building approaches could use these opportunities to reduce unnecessary burdens and empower countries (and communities) to concurrently create complimentary solutions for the 2030 Agenda and the Paris Agreement. In particular, countries have articulated the need to enhance policymakers' knowledge and analytical capacity, especially as they relate to the nexus between climate action and sustainable development (UNFCCC 2016, para. 58), including addressing gender issues.

Country lessons: Vanuatu, Serbia

DEVELOPMENT AND USE OF AN INTEGRATED MRV FRAMEWORK

A growing number of countries are requesting capacity building to link their MRV systems on climate change and the monitoring and evaluation processes for the SDGs. This demand is increasingly reflected in the request letters and Partnership Plans of the NDC Partnership country members.

Vanuatu is among these countries and has been working with support from the NDC support program of the United Nations Development Programme (UNDP) to include the SDGs in its MRV system. An SDG-Tracker

Tool, which links climate actions and the SDGs, is one of the key features of the Vanuatu Integrated MRV framework. This tool enables policymakers to assess sustainable development impacts of mitigation actions that help advance both the NDC and the SDGs. The SDG-Tracker Tool proposes different steps to monitor and report on the SDG impacts of mitigation activities:

1. Identification of NDC projects and programs, and their possible SDG benefits or impacts
2. Identification of parameters and data to be monitored
3. Storing of monitored data in a central database
4. Analysis of SDG data
5. Verification by designated agency
6. Communication and reporting of the analysis results

The results of the analyses for all projects and programs are expected to be aggregated into an SDG performance report, whose key results will also be communicated under the international transparency framework of the Paris Agreement.

The tool is intended to highlight the mutual and cobenefits between the NDC and SDGs, as well as some potential trade-offs. Specific emphasis is likely to be put on tracking the NDC's contribution to advancing universal and sustainable energy access for all, which corresponds to SDG 7. Indeed, the key mitigation component of Vanuatu's NDC is a sector-specific target of transitioning to close to 100 percent renewable energy in the electricity (energy) sector by 2030. The tool will also monitor linkages with all the other SDGs, such as greater access by women and children to educational and income-based opportunities due to electricity access.

The UNDP framework builds stakeholders' capacities to use such a tool through training and technical guidance. A similar approach integrating SDG monitoring into MRV systems is being replicated in Uganda and Kenya. Uganda is also working on aligning the results and reporting framework of its third national development plan, for 2019–23 (NDP III), with the climate change indicators developed to underpin the NDC and the indicator matrix of the SDGs, the green growth strategy, and Africa's Agenda 2063. The National Planning Authority and the Climate Change Department of the Ministry of Environment and National Resources also aim to harmonize the reporting frameworks for the NDC and the SDGs in 2019.

GENDER RESPONSIVENESS

Gender considerations can be integrated into the various stages of the transparency system: at the initial stage of the preparation of transparency reports, during the reporting and review phase, and/or when producing a funding proposal to the GEF, or through the national budget (Borgogno 2019). This can be done by engaging key stakeholders when collecting and sharing the information. The opportunity is particularly strong regarding the reporting and review of adaptation actions, when producing or evaluating the vulnerability assessments.

In its funding proposal for the Capacity-building Initiative for Transparency, Serbia highlighted the use of previous analysis on gender and climate (conveyed in its second national communication in its vulnerability assessment section). It sought to enhance the use of gender indicators and asked for support for collecting sex-disaggregated data. In keeping with the Gender Action Plan, Serbia flagged its intent to mobilize its gender focal point and collaborate with international and national institutions working on gender issues (such as UN Women and its ministries of labor and social affairs).

A number of toolkits are emerging, such as UNDP's Gender Responsive National Communications Toolkit, as benchmarks for identifying key elements of a gender roadmap or climate action plan, to facilitate South-South or South-North collaboration and peer-exchange among countries, as is the case in the western Balkans.

Key Lesson: Lasting systems and knowledge are critical to building capacity.

Parties have noted the challenges in preparing national communications because the reports are a "highly demanding exercise" (UNFCCC 2017a, para. 34). To meet the requirements, countries have often had to hire consultants, receive climate finance funding, or work with nongovernmental organizations to build technical capacity. South Africa, for example, noted that it had to hire two contract staff to support the production and compilation of its third national communication and second BUR (DEA 2017).

A common challenge for many capacity-building activities has been the sustainability of project outputs, something rarely mentioned in reporting on capacity building. To be most effective, projects or activities should not be one-offs but should support continued capacity growth while supporting government goals and related activities. Further, the results from capacity-building projects and programs should be lasting and integrated into everyday sustainable activities of the government.

Country lessons: Brazil, India, Dominican Republic

A number of countries have noted their success in integrating climate change into school curricula. Some new undergraduate and graduate programs have been launched to support the integration of climate change into formal curricula (UNFCCC 2017a, para. 15). Uzbeki-

stan, for example, has revamped its primary and secondary education systems and has approved plans to integrate sustainable development issues in curricula across different levels of education. Despite these successes, challenges remain, including lack of access to education materials, training of local educators, language-appropriate materials, and policy-level knowledge (UNFCCC 2018b, paras. 37–38; UNFCCC 2017a, para. 40).

Civil society organizations in Brazil and India have worked to develop their own capacities and enhance understanding of their country's GHG emissions and removals. Brazil's Climate Observatory, a coalition of civil society organizations, developed the Greenhouse Gas Emissions Estimate System (SEEG) to annually independently estimate Brazil's GHG emissions and removals (SEEG 2019). Since Brazil is a non–Annex I Party under the Convention, it is not required to prepare annual GHG inventories. As such, the annual data from SEEG can be used to inform policy discussions and research in Brazil. As a project led by civil society, SEEG supports building expertise among NGOs and experts.

The success and experience in Brazil led to South-South peer exchanges, as both Peru and India sought to build similar estimates (SEEG 2019). In India, a group of five organizations and other individual experts came together to develop the GHG Platform India (2016). The platform was recognized in India's BUR2 as an indicator of the "vibrant civil society network and range of climate change actions . . . being undertaken by these organizations across the country" (MoEFCC 2018, 204). Not only does the platform produce annual emissions estimates, but it also has supported the training and capacity building of more than 800 practitioners, enhancing understanding of inventory preparation and other key elements. Building this technical expertise in civil society can create resources for governments and national institutions.

As important as it is to build technical expertise in civil society, it is also critical to build technical expertise among permanent government staff. It is also essential to have well-trained staff who can build and help shape the institutional structures around them. The Dominican Republic is hoping to train a new generation of experts by partnering with universities to offer courses on GHG inventories. To date, two courses have been offered in a pilot format, but the government is considering ways to expand these courses and offer them permanently. These courses are designed to introduce students to the methodologies, experiences, and practices behind producing GHG inventories.

The Dominican Republic has recognized the value of engaging academia and universities to support such capacity development. As part of its CBIT proposal, the country will train and engage experts in academia to support efforts to meet the reporting requirements under the enhanced transparency framework. Since the academic sector experiences less turnover than the public sector, engaging and leveraging the expertise of universities and research centers can help the Dominican Republic build sustained capacity to support the Agreement's requirements. Egypt has taken a similar approach. This example illustrates an important takeaway: countries' needs and demands should be addressed by increasing domestic capacity rather than by using consultants on an ad hoc or project-by-project basis. Universities and national training centers may be ripe for further exploration of such efforts.

ENHANCING CAPACITY BUILDING UNDER THE CONVENTION AND THE PARIS AGREEMENT

As Parties begin their preparations for implementation of the enhanced transparency framework, with reporting first due by December 31, 2024, and as they seek to identify how capacity-building support can best advance transparency goals, it is crucial to examine the structures already in place and the upcoming decisions that will shape future capacity building. Further, this paper explores how several processes under the Paris Agreement—the transparency framework's technical expert review and facilitative, multilateral consideration of progress; the global stocktake; and the mechanism to facilitate implementation and promote compliance—support capacity building for the enhanced transparency framework. A multitude of capacity-building bodies under the UNFCCC provide transparency-related support. This chapter introduces these bodies and shows the relevance of their existing support activities for the enhanced transparency framework, including highlighting a number of key decision points under negotiation in 2019 that will impact how capacity building serves the Paris Agreement and supports the implementation of the enhanced transparency framework. Finally, the chapter maps some of the initiatives working to support the implementation of the transparency framework.

The 2001 Capacity-Building Framework

In 2001, countries agreed to the Marrakesh Accords and the UNFCCC capacity-building framework. The framework identifies 15 priority areas for capacity building under the Convention. The 2001 capacity-building framework is still in place and needs to remain relevant in the context of the Paris Agreement. Box 3 highlights the objective of capacity building, as defined in 2001, and lists the 15 priority areas.

Since the adoption of the Paris Agreement, as capacity-building needs have evolved over time to reflect changes in climate science and policy, several themes additional to the capacity-building framework have emerged. The UNFCCC secretariat reports on emerging themes as identified by Parties through its annual synthesis reports on the implementation of the framework for capacity building in developing countries and in its comprehensive review of the framework's implementation. Because the Paris Agreement represents a shift in the UNFCCC policy landscape, emerging capacity-building themes should be captured. Building on the secretariat's 2017 and 2018

Box 3 | Priority Areas for Capacity Building in Developing Countries

Decision 2/CP.17 notes that the objective of capacity building should be to "assist developing countries to build, develop, strengthen, enhance, and improve their capabilities to achieve the objective of the Convention through the implementation of the provisions of the Convention" (UNFCCC 2001a, para. 14, Annex).

The decision lists 15 capacity-building priority areas:

1. Institutional capacity building, including the strengthening or establishment, as appropriate, of national climate change secretariats or national focal points
2. Enhancement and/or creation of an enabling environment
3. National communications
4. National climate change programs
5. GHG inventories, emission database management and systems for collecting, managing, and utilizing activity data and emission factors
6. Vulnerability and adaptation assessment
7. Capacity building for implementation of adaptation measures
8. Assessment for implementation of mitigation options
9. Research and systemic observation, including meteorological, hydrological, and climatological services
10. Development and transfer of technology
11. Improved decision-making, including assistance for participation in international negotiations
12. Clean Development Mechanisms
13. Needs arising out of the implementation of the Convention's Article 4, paragraphs 8 and 9
14. Education, training, and public awareness
15. Information and networking, including the establishment of databases (UNFCCC 2001a, para. 15, Annex)

Table 1 | Distribution by Priority Area of Capacity-Building Activities Submitted by the United Nations and Other Institutions, 2012–15

PRIORITY AREA	DESCRIPTION	NUMBER OF ACTIVITIES	PERCENT
14	Education, training, and public awareness	339	17
2	Enhancement of the enabling environment	251	13
10	Development and transfer of technology	211	11
1	Institutional capacity building	198	10
8	Implementation of mitigation options	130	7
7	Implementation of adaptation measures	127	6
15	Information and networking	109	5
9	Research and systematic observation	99	5
3	National communications	98	5
4	National climate change programs	90	5
11	Improved decision-making	88	4
12	Clean Development Mechanism	85	4
6	Vulnerability and adaptation assessment	73	4
5	GHG inventories	57	3
13	DC/LDC support	29	1

Source: UNFCCC (2016), Table 2.

synthesis reports, the third comprehensive review, and other experiences, we identify four additional themes for consideration:

- National MRV systems
- MRV of land use, land-use change, and forestry (LULUCF), including reducing emissions from deforestation and forest degradation (REDD+)
- Accountability of and access to climate finance
- Gender and human rights considerations

The *Third Comprehensive Review of the Implementation of the Framework for Capacity-Building in Developing Countries* provided insight into the relationship of international support provided with the original 15 priority areas, offering "indicative samples of the magnitude of activities undertaken in developing countries related to capacity-building" (UNFCCC 2016, para. 23). The comprehensive review from the UNFCCC reports only a number of activities associated with each priority area and does not identify the individual activities or the amount of funding associated with each. Without this information, it is difficult to assess whether these projects under the Convention have responded to needs related to transparency or reporting. Over the period 2012–15 (i.e., immediately prior to the Paris Agreement), support for capacity building focused on the priority areas relating to education, training, and public awareness; enabling environments; the development and transfer of technology; and institutional capacity building.

How Can the Paris Agreement Support Transparency-Related Capacity Building?

A number of processes created by the Paris Agreement—including the technical expert review and the facilitative, multilateral consideration of progress (FMCP) under the transparency framework, the global stocktake (Article 14), and the mechanism to facilitate implementation and promote compliance (Article 15)—are vital to support capacity-building efforts. In particular, the linkages between the transparency framework and Articles 14 and 15 could offer opportunities to enhance capacity building.

The following description is helpful to understand how these three processes address capacity building:

- Reporting under Article 13 asks countries to report on their financial, technological, and capacity support needed and received. This represents a key opportunity to identify capacity needs and areas for improvement.
- The review processes under Article 13 will identify areas of improvement and assist in the identification of capacity-building needs in individual countries encountered when countries fulfill their requirements. The FMCP also helps countries understand whether and how their peers have been addressing similar gaps and challenges.
- The global stocktake under Article 14 could highlight, among other things, common barriers and best practices that countries can take into account to address their most common capacity-building needs and enable them—collectively—to commit to more ambitious actions.
- The mechanism under Article 15 to facilitate implementation and promote compliance may identify individual challenges and help countries engage support arrangements. This mechanism can also identify, examine, and make recommendations to address systemic issues.

Reporting under the enhanced transparency framework

As described above, the enhanced transparency framework requests that Parties report on their capacity-building needs. The specific guidelines for this reporting are discussed in more detail in Appendix B and compared with guidelines for reporting on similar topics under the existing transparency arrangements. However, to summarize these guidelines, Parties are asked to report on

- "the approach a Party seeks to take to enhance capacity-building support;
- country-specific capacity-building needs, constraints and gaps in communicating those needs, and an explanation of how the capacity-building support needed would improve the provision of such information;
- processes for enhancing public awareness, public participation and access to information in relation to capacity building" (UNFCCC 2018e, Annex, para. 139).

Countries are asked to provide further information on specific projects, as available and applicable.

Further, to support improvement over time, Parties are asked to share information on

- "areas of improvement identified by the Party and the technical expert review team in relation to the Party's implementation of Article 13 of the Paris Agreement;
- how the Party is addressing or intends to address areas of improvement as referred to in paragraph 7(a) above, as appropriate;

- those developing country Parties that need flexibility in the light of their capacities are encouraged to highlight the areas of improvement that are related to the flexibility provisions used;
- identification of reporting-related capacity-building support needs, including those referred to in paragraph 6 above, and any progress made, including those previously identified as part of the technical expert review referred to in chapter VII below" (UNFCCC 2018e, Annex, para. 7).

The reporting of this information is useful to inform a Party's own planning, communicate its needs to support providers and the rest of the community, and inform the transparency framework's review processes, the global stocktake, and the mechanism to facilitate implementation and promote compliance.

Review under the enhanced transparency framework

The Paris Agreement and the MPGs very clearly outline a role for the technical expert review (TER) under the enhanced transparency framework to "identify areas of improvement for the Party" (UNFCCC 2015b). According to the guidelines, the TER teams "shall communicate to the Party concerned draft areas of improvement, constituting initially of preliminary 'recommendations' (for 'shall' provisions) and/or 'encouragements' (for non-'shall' provisions)" (UNFCCC 2018e, Annex, para. 126d).

While countries are to provide "self-determined estimated time frames for improvements in relation to those capacity constraints," their "domestic plans and priorities with regard to improved reporting . . . are not subject to a technical expert review, but the information may inform discussions on areas of improvement and identification of capacity-building needs between the technical expert review team and the Party concerned" (UNFCCC 2018e, Annex, paras. 6 and 8). Also, when a developing country Party applies flexibility provided for in these MPGs, the review teams shall not review the Party's determination to apply such flexibility or whether the Party possesses the capacity to implement that specific provision without flexibility (UNFCCC 2018e, Annex, para. 149e).

Even with limits on the interactions between the review team and the country, the exchange of information and knowledge (and even potential technical disagreement) between Parties and TER teams have proven to be one of the most efficient mechanisms for capacity building, particularly because it generates focused technical discussions around specific challenges that Parties face in fulfilling the reporting requirements and may even result in proposals for potential solutions.

The in-country review format may be the best way to fully explore the interactions between Parties and the TER teams. However, developing countries thus far have had limited experiences with the teams of technical experts undertaking the technical analysis of BURs and may, at first glance, be reluctant to host in-country reviews.

The list of "recommendations" and/or "encouragements," together with the interactions between the Party and the TER team, helps each Party further understand its capacity-building needs to improve reporting over time. In addition, the technical expert review can highlight areas where Parties have improved to help identify good practices that may be useful to other Parties experiencing similar challenges (Dagnet et al. 2017).

Under the facilitative, multilateral consideration of progress facilitative, multilateral consideration of progress (FMPC), Parties can listen to others' experiences and have a dialogue about successes and challenges. This peer-to-peer exchange can identify challenges common across Parties while also allowing Parties to learn how others have built capacity in the face of similar challenges. Often, however, there is not enough time during these meetings to fully flesh out and discuss shared challenges. FMCP workshops take place during UNFCCC negotiating sessions, which limits the available time and creates "competition," as country representatives must choose which conflicting session they most need to attend in order to negotiate on their country's behalf. The online platform established by the MPGs should be used to create more opportunities for interactions among Parties and registered observers and serve as a tool for capacity building by allowing for more efficient peer-to-peer exchange of lessons learned.

The recently adopted guidelines outline these processes and their relative timelines. The two processes operate independently, but the FMCP process is set to begin "as soon as possible following the publication of a Party's technical expert review report." If the review report is not available within 12 months of the submission of the BTR, the secretariat will schedule the FMCP working session for the next available opportunity (UNFCCC 2018e, Annex, para. 197).

Global stocktake

The enhanced transparency framework is also closely linked to the global stocktake (GST). Outputs from the transparency framework (biennial transparency reports submitted by Parties, technical expert review reports, and records of the facilitative, multilateral consideration of progress) will be vital inputs into the GST (UNFCCC 2018c, paras. 37a, 37d).

The mandate for the GST to address capacity-building issues is clearly defined: The GST is to collect information on "barriers and challenges, including finance, technology and capacity-building gaps faced by developing countries" (UNFCCC 2018c, para. 36f). Therefore, identifying common, overarching, or systemic capacity challenges that may impact the ability of all Parties to make progress toward the Agreement's goals has been included within the GST's mandate.

The GST will be structured in three components: information collection and preparation, technical assessment, and consideration of outputs. During the information collection and preparation component, Parties, non-Party stakeholders, and UNFCCC observer organizations will be able to provide inputs for consideration, and the Paris Committee on Capacity-building will be invited to prepare a synthesis report on its area of expertise. The technical assessment component will then consider and discuss these inputs and assess the collective efforts through an open, inclusive, transparent, and facilitative technical dialogue during in-session roundtables, workshops, or other activities. Cofacilitators of the technical dialogue will describe its outputs in summary reports, taking into account equity and the best available science for each thematic area, including "means of implementation and support." The GST will culminate in the consideration of outputs, consisting of "high-level events where the findings of the technical assessment will be presented, and their implications discussed and considered by Parties." Further, the outputs should "identify opportunities for and challenges in enhancing action and support in collective progress in relation to the thematic areas . . . as well as possible measures and good practices and international cooperation and related good practices" (UNFCCC 2018c, para. 34a).

All components, and in particular the outputs, will offer the Parties and others opportunities to highlight overarching or systemic capacity-building needs as well as those to identify solutions and good practices that can be replicated across different countries or regions.

The mechanism to facilitate implementation and promote compliance

The mechanism to facilitate implementation and promote compliance will consist of an expert committee of 12 members with recognized competence in relevant scientific, technical, socioeconomic, or legal fields that will meet at least twice a year, beginning in 2020 (UNFCCC 2018d, paras. 5, 12). In relation to capacity building, the committee can play two distinct roles: supporting and facilitating implementation by individual Parties and addressing systemic issues faced by multiple Parties.

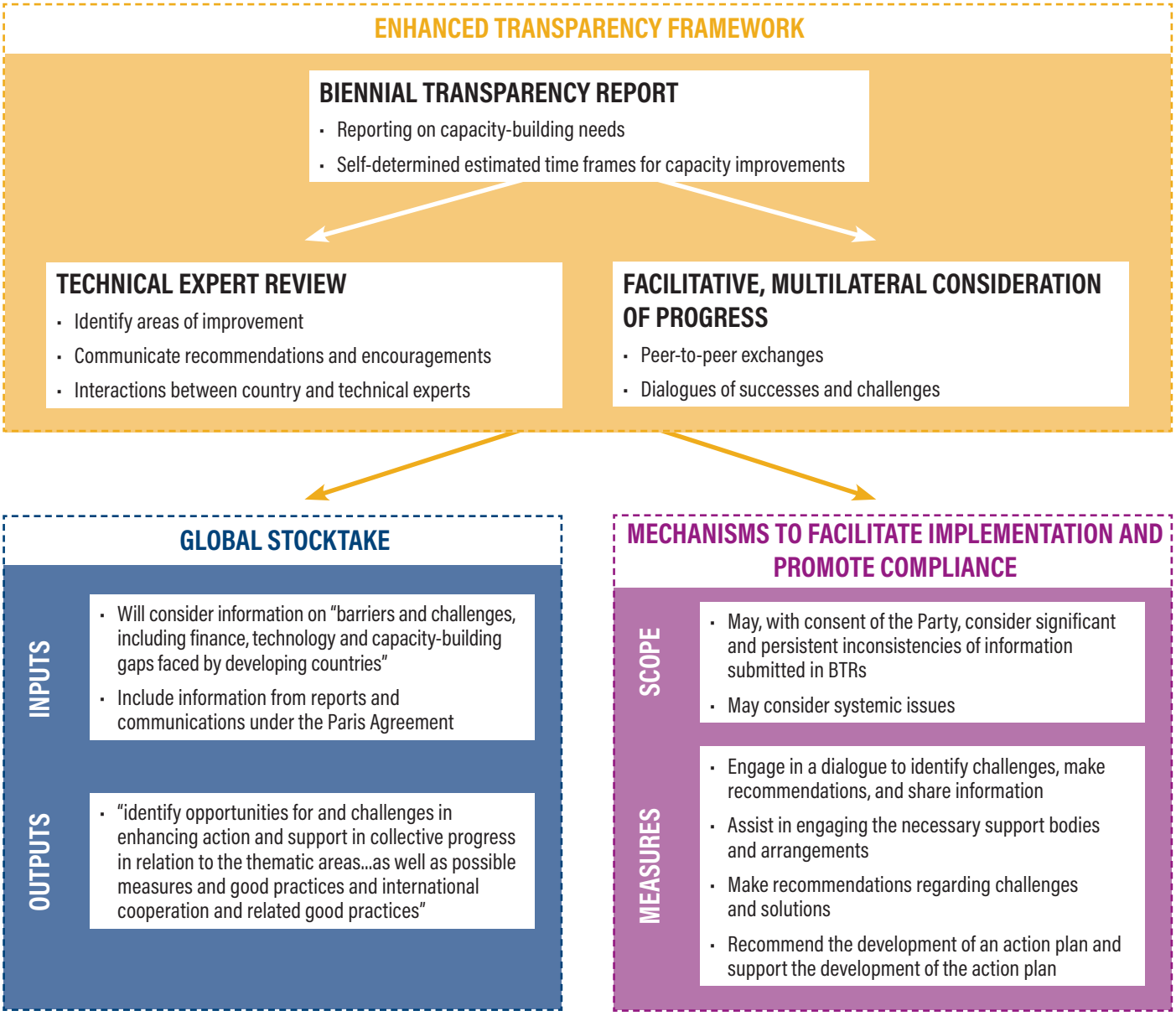
In the individual case, the committee "may, with the consent of the Party concerned, engage in a facilitative consideration of issues in cases of significant and persistent inconsistencies of the information submitted by a Party" with the guidelines of the enhanced transparency framework. Any consideration by the committee will be based on the recommendations made in the final TER reports, together with any written comments provided by the Party during the review. In its consideration of such matters, the committee shall take into account the support that was provided to the Party, as well as the flexibilities provided in the MPGs (UNFCCC 2018d, para. 22b).

By operating transparently, nonadversarially, and nonpunitively, the committee can address cases of significant and persistent inconsistencies in a more focused manner (Oberthür and Northrop 2018). For example, the committee can take the following actions:

1. Engage in a dialogue with the Party concerned to identify challenges, make recommendations, and share information, including in relation to accessing finance, technology, and capacity-building support.
2. Help the Party concerned engage with the appropriate finance, technology, and capacity-building bodies or arrangements under or serving the Paris Agreement in order to identify possible challenges and solutions.
3. Make recommendations to the Party concerned with regard to challenges and solutions and communicate such recommendations, with the consent of the Party concerned, to the relevant bodies or arrangements, as appropriate.
4. Recommend the development of an action plan and, if so requested, assist the Party concerned in developing the plan (UNFCCC 2018d, para. 30).

The mechanism may also play a role in addressing systemic issues with respect to implementation of and compliance with the provisions of the Paris Agreement faced by a number of Parties and bring such issues and, as appropriate, any recommendations to the attention of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) for its consideration (UNFCCC 2018d, para. 32).

Figure 6 | **Capacity-Building Linkages between Articles 13, 14, and 15**



Source: Dagnet et al. (2019).

By playing these two roles, the committee may play a special role in addressing capacity-building issues related to the enhanced transparency framework and the implementation of the Paris Agreement more broadly. Questions linger, however, about how effectively the committee will be able to fulfill this capacity-building role.

Figure 6 summarizes the discussions on the individual elements, including reporting and review under Article 13, the global stocktake under Article 14, and the mechanism to facilitate implementation and promote compliance under Article 15. This illustration demonstrates how different processes under the Paris Agreement engage and support capacity building.

Role of UNFCCC Institutions in Supporting Capacity Building and the Enhanced Transparency Framework

A wide range of bodies and initiatives under the Convention offer capacity-building support and activities. The institutions play an important role in current efforts and are expected to continue to do so under the Paris Agreement. Table 2 highlights the large number of bodies that support capacity building and identifies the relevance of this support to the enhanced transparency framework.

While Table 2 highlights the variety of capacity-building bodies and initiatives under the Convention, Parties need to make a number of key decisions in the

Table 2 | **The Landscape of Capacity-Building and Support Initiatives under the Convention and Its Operating Entities**

BODY	SUMMARY INTRODUCTION	RELEVANCE TO ENHANCED TRANSPARENCY FRAMEWORK OF THE PARIS AGREEMENT
Paris Committee on Capacity-building (PCCB)	The PCCB was created in 2015, during COP21, to enhance the UNFCCC institutional arrangement and oversee a comprehensive work program that includes identifying capacity gaps and needs; fostering international, regional, national, and subnational cooperation; assessing how to increase synergies, coordination, collaboration, and coherence among existing bodies and activities within and outside the UNFCCC; promoting the development and dissemination of relevant tools and methodologies; and collecting best practices and lessons learned to enhance ownership and retention of capacity at national, regional, and subnational levels (UNFCCC 2015a, para. 73).	The PCCB is tasked with supporting efforts under and implementation related to the Paris Agreement. Capacity-building gaps and needs related to the enhanced transparency framework are within this purview.
Durban Forum	In 2011, Parties decided to create the Durban Forum, an annual in-depth discussion on capacity building (UNFCCC 2011b, para. 144). The Durban Forum has met every year since 2012 during the May/June sessions of the Subsidiary Body for Implementation.	Discussions under the Durban Forum, which are crucial to exploring capacity-building experiences, often include discussions of transparency-related topics.
Consultative Group of Experts (CGE)	The CGE was created in 1999 to respond specifically to the need to improve the preparation of national communications (CGE 2018). The COP, through Decision 19/CP.19, continued the CGE for five years, from 2014 to 2018, and mandated the CGE to also provide support for the preparation of BURs (CGE 2018). At COP24, the CGE was extended through 2026 and mandated to serve the Paris Agreement.	The CGE has now been mandated to serve the implementation of the Paris Agreement, including providing support for the preparation of biennial transparency reports.
Capacity-building Initiative for Transparency (CBIT)	In Decision 1/CP.21, paragraph 84, countries established the CBIT to support developing countries in meeting their requirements under Article 13. The decision also outlined three key objectives of the CBIT: "(a) to strengthen national institutions for transparency-related activities in line with national priorities; (b) to provide relevant tools, training and assistance for meeting the provisions stipulated in Article 13 of the Agreement; (c) to assist in improvement of transparency over time" (UNFCCC 2015a, para. 85).	The CBIT is expected to play a key role in helping countries meet transparency requirements as defined in Article 13 of the Paris Agreement, as mandated by Decision 1/CP.21, paragraph 84.
Global Environment Facility (GEF)	In addition to hosting the Capacity-building Initiative for Transparency (see entry above), the GEF has long supported transparency arrangements under the Convention by lending support to the preparation of NCs and BURs.	These national reports provide the foundation for transparency arrangements under the Paris Agreement.
Green Climate Fund (GCF)	The GCF's Readiness and Preparatory Support Programme offers support for the development of National Adaptation Plans (NAPs) and other adaptation planning processes (GCF n.d.). Efforts also under the Readiness and Preparatory Support Programme aim to improve access to climate finance by aligning national strategies with funding proposals and country priorities (GCF n.d.).	The GCF is expected to play a critical role in implementing mitigation actions related to NDCs seeking support. In addition, GCF support for the formulation of NAPs will strengthen national reporting on adaptation actions. The GCF also supports implementing mitigation actions.

Table 2 | **The Landscape of Capacity-Building and Support Initiatives under the Convention and Its Operating Entities** (cont.)

BODY	SUMMARY INTRODUCTION	RELEVANCE TO ENHANCED TRANSPARENCY FRAMEWORK OF THE PARIS AGREEMENT
Adaptation Fund (AF)	The AF also has a Readiness Programme for Climate Finance, which similarly aims to improve access to climate finance (Adaptation Fund 2018).	As part of its accreditation support, the AF works to strengthen reporting and accountability systems.
Adaptation Committee (AC) and Least Developed Countries Expert Group (LEG)	The AC was established with the adoption of the Cancún Agreements in 2010 to provide technical support and guidance to Parties, enhance the sharing of information, and consider information on needs and gaps (UNFCCC 2010, para. 20). The LEG was formed in 2001 to support the preparation and implementation of national adaptation programmes of action (NAPAs) (UNFCCC 2001b). The LEG's mandate was further expanded to support the NAP process (UNFCCC 2011a, paras. 13–17). At COP21 in Paris, countries decided to request that the AC and LEG "develop modalities to recognize the adaptation efforts of developing country Parties" (UNFCCC 2015a, para. 41). Modalities to recognize adaptation efforts, successes, and challenges are critical as countries report on climate change impacts and adaptation under the enhanced transparency framework.	Article 13, paragraph 8, calls for Parties to provide information on adaptation actions, including NAPs. Article 7 also calls on Parties to submit adaptation communications. Support and guidance from the AC and LEG with regard to communicating adaptation efforts, needs, gaps, and lessons will inform transparency reporting.
Least Developed Countries Fund (LDCF)	The LDCF supports the implementation of NAPAs (UNFCCC 2005).	Implementation and reporting of adaptation actions support the call in Article 13, paragraph 8, for Parties to provide information on adaptation actions. Article 7 also calls on Parties to submit adaptation communications.
Standing Committee on Finance (SCF)	In 2010, Parties established the SCF to improve coherence and coordination in, among other things, MRV of the support provided to developing countries. Since then, the COP has requested that the SCF prepare biennial assessments and overviews of climate finance flows.	The biennial assessment report highlights the many challenges faced in reporting climate finance flows.
Clean Development Mechanism (CDM) Executive Board	The CDM Executive Board is responsible for supervising the CDM under the Kyoto Protocol. Activities under the CDM include organizing workshops and providing both technical and regulatory support (UNFCCC 2017b).	The CDM provides one of the foundations for transparency in reporting. Though Article 6 negotiations did not conclude at COP24, the Paris Agreement will demand different capacity-building needs than did the Kyoto Protocol's CDM.
Executive Committee of the Warsaw International Mechanism for Loss and Damage	During COP19, Parties created the Warsaw International Mechanism for Loss and Damage, which works on "enhancing knowledge and understanding of comprehensive risk management approaches to address loss and damage associated with the adverse effects of climate change" (UNFCCC 2012, para. 5).	Under the enhanced transparency framework, Parties can report information on loss and damage. Enhancing understanding of loss and damage supports this reporting.

coming year, particularly related to the Paris Committee on Capacity-building and the Consultative Group of Experts.

The Paris Committee on Capacity-building's current comprehensive work program includes

- identifying capacity gaps and needs;
- fostering international, regional, national, and subnational cooperation;
- assessing how to increase synergies, coordination, collaboration, and coherence among existing bodies and activities within and outside the UNFCCC;
- promoting the development and dissemination of relevant tools and methodologies; and
- collecting best practices and lessons learned to enhance ownership and retention of capacity at national, regional, and subnational levels (UNFCCC 2015a, para. 73).

The agreed focus area for 2017–19 is to carry out a stocktake of all capacity-building activities for the implementation of NDCs in the context of the Paris Agreement. This stocktake is intended to identify existing capacity-building needs and gaps (UNFCCC 2017c, para. 6(b)(iii)). The enhanced transparency framework requires Parties to monitor their capacity-building activities related to the strengthening of their domestic MRV systems and their abilities to fulfill international requirements. One key component of the transparency framework is reporting from developing countries on capacity-building needs. Countries have struggled so far to perform this task, largely because of challenges associated with distinguishing between finance, technology development and transfer, and capacity building. The PCCB is exploring opportunities to address this question.

COP25 is supposed to review "the [PCCB's] progress, need for extension, . . . effectiveness and enhancement" (UNFCCC 2015a, para. 81). Countries will need to make a number of decisions with regard to the PCCB, including whether to extend the workplan beyond 2020, provide guidance on the workplan, or provide resources to the committee. These decisions may define how the PCCB is able to support countries in implementing the enhanced transparency framework and the Paris Agreement more broadly.

At COP25, Parties also have to make decisions regarding the Consultative Group of Experts. The CGE has been perceived as providing key technical support under the Convention by helping developing country Parties meet their reporting obligations. For example, developing country Parties have noted with appreciation that the trainings, training materials, and tools provided by the CGE have helped build capacity. Further, others have found the CGE tabular tables useful in identifying specific gaps in data sets for national GHG inventories. However, the CGE's mandate was scheduled to end in 2018.

At COP24, Parties agreed to extend the term of the CGE for eight years, through 2026; noted that the CGE shall serve the Paris Agreement; and reviewed the terms of reference for the CGE. Negotiations over the terms of reference are set to begin at the 50th meeting of the Subsidiary Body for Implementation (SBI 50) in June 2019 and conclude by COP25.

Parties must undertake several key negotiations and make several important decisions this year regarding the capacity-building arrangements under the Convention. Parties have the opportunity to adjust and improve these arrangements to better serve the enhanced transparency framework and to ensure that capacity building is more effective and transformational than in the past.

International Initiatives Providing Transparency-Related Support

Many initiatives have emerged to help countries improve their transparency systems. These initiatives differ in terms of scope, type of activities, geographical coverage, and other factors. This section discusses the role of several international initiatives, especially the Capacity-building Initiative for Transparency (established in Paris in 2015); maps other initiatives; and notes the importance of coherence and coordination among initiatives.

The CBIT provides support directly related to the enhanced transparency framework. Countries submit requests for support, which provide valuable insights into how countries view their support needs and priorities. Analysis of these support requests illustrates the transparency-related capacity-building support sought under these initiatives.

In Decision 1/CP.21, paragraph 84, countries established the CBIT to support developing countries in meeting their requirements under Article 13. The decision also outlined three key objectives of the CBIT: "(a) to strengthen national institutions for transparency-related activities in line with national priorities; (b) to provide relevant tools, training and assistance for meeting the provisions stipulated in Article 13 of the Agreement; (c) to assist in improvement of transparency over time" (UNFCCC 2015a, para. 85). The Global Environment Facility was requested to support the operation of the CBIT. The GEF thus established the CBIT Trust Fund in September 2016 (GEF 2018a). Since then, the CBIT has been integrated into the GEF-7 replenishment cycle, which has allocated $63 million to the CBIT (GEF 2018b).

The 2018 progress report on the CBIT initiative recorded that 45 projects had been approved by the GEF secretariat, 41 of which are country projects and four are global projects, totaling $63 million (GEF 2018b). This represents strong, new international support for capacity building in developing countries. Table 3 maps themes in support request proposals under the CBIT. The table illustrates CBIT project activities—in line with the original GEF programming guidance—and the percentage of approved projects that align with these activities.

Many other initiatives, though not at the scale of the CBIT, provide transparency-related capacity-building support. A sample of selected initiatives focused on transparency-related capacity building is captured in Appendix D. Appendix D provides short descriptions and web links offering more information about these various initiatives, which have had success and begun to build capacity in a number of developing countries. With a diversity of actors, strong coordination and coherence must be ensured among the various initiatives, a point that has been made repeatedly in the past (e.g., Dagnet et al. 2015).

Table 3 | **Support Activities from CBIT Projects**

CBIT PROJECT ACTIVITIES	APPROVED PROJECTS (PERCENT)
Enhancement and/or establishment of new institutional arrangements	78
Use of NDC transparency activities to inform policy design	90
Capacity building, training, and knowledge sharing	100
Enhancement and/or establishment of new MRV systems	88
GHG inventory data collection/management tools	70
Scenario modeling	18
Tracking climate finance	30
MRV methodologies for mitigation actions	53
MRV methodologies for adaptation actions	45
Activities focused on agriculture, forestry, and other land use (AFOLU)	30

Source: GEF (2018a).

There are some efforts to enhance coordination and collaboration, such as the MRV Group of Friends—an initiative from the UNFCCC to periodically gather transparency-support providers to discuss ways they can improve coordination. Further efforts and a commitment from support providers to enhance their coordination are welcomed.

One tenet of the NDC Partnership, for example, is to avoid duplicating support provided by other organizations, initiatives, or bodies. Many countries seeking support from the NDC Partnership to implement their NDCs highlighted the need to strengthen or build robust measurement, reporting, and verification systems to better track their efforts (policies, measures, finance mobilized or received) and identify opportunities to enhance their ambition over time. When the NDC Partnership receives such transparency-related requests, it systematically explores whether existing initiatives like the CBIT, the GCF Readiness Programme, or others are already being mobilized. If so, the Partnership examines whether its bilateral support can complement such initiatives. If direct bilateral support from the NDC Partnership is not appropriate, efforts are made to address countries' barriers in approaching and seeking support from other relevant initiatives.

A regional approach to capacity building with respect to transparency is also emerging to strengthen and sustain technical capacity for reporting and enhance decision-making processes by generating regionally pooled institutional arrangements, data, activities, and expert technical capacities (Barbour 2019). This is the case of the recently launched Caribbean Cooperative MRV Hub. Such an approach may be particularly transformational in addressing the human and capacity gaps in small countries, while enabling countries to prepare for the enhanced transparency framework's technical expert group review (UNFCCC 2018e, Annex, para. 157).

CONCLUSION

Despite many decades of cooperation under the Convention, most developing countries have yet to build a sustainable institutional capacity to regularly communicate, share, and review their efforts to reduce GHG emissions and adapt to climate change. In many cases, the expressed political will of the NDCs to combat climate change contrasts with an inability of national institutions (and their staff) to implement the Paris Agreement as effectively and quickly as intended.

This paper has explored the new requirements for the Paris Agreement's enhanced transparency framework and shown that these requirements represent greater efforts

to communicate on climate change action and support. The paper has also explored how processes under the Paris Agreement—including the technical expert review and the facilitative, multilateral consideration of progress under Article 13, the global stocktake under Article 14, and the mechanism to facilitate implementation and promote compliance under Article 15—are powerful capacity-building instruments since they play a critical role in helping countries both improve their transparency-related governance systems and meet their data and information needs for reporting. Countries should see these mechanisms as opportunities for peer exchange and learning, where advice on ways to address barriers and gaps and identify solutions and investment opportunities can be obtained to get better data, make better evidence-based decisions, and raise ambition.

In reviewing capacity needs, as communicated by Parties, the paper has identified a number of key lessons that should inform future capacity-building efforts. Throughout the paper, these lessons have been paired with a description of particular challenges or opportunities, and case studies from countries that have begun examining these questions in their own circumstances. Good practices are now emerging in developing countries, where countries have managed to create new ways to improve their data and decision-making processes.

Building or developing capacity is a process that takes time and requires countries to "learn by doing." Capacity cannot be built overnight; it will take years. Expectations that countries will immediately be able to fulfill their requirements under the enhanced transparency framework are unrealistic. The process of learning and building capacity must, however, be made more effective to enable faster progress, by leveraging countries' experiences, lessons learned, and emerging tools or approaches developed over the past 20 years.

Capacity for transparency can be strengthened through enhanced governance and institutional structures and supported by the right participatory approach. Countries must organize institutional and governance structures able to collect, report, and use data for decision-making. Governments' ability to engage effectively with key stakeholders is critical to obtaining data of quality and in turn providing the right signals and guidance to convince stakeholders to support governments' efforts.

Legal architecture provides a key basis for the tracking of progress and efforts. Further, new, and innovative tracking tools and platforms are emerging to support the understanding of progress. Implementing the enhanced transparency framework requires that countries provide reports on their GHG emissions and progress toward climate goals. In preparing for these assessments, countries must be able to gather the specific data necessary, including estimates of GHG emissions, information on climate change impacts and adaptation, and indicators to track progress. Countries have noted the need for help accessing support and then to understand and track the support received. While there have been greater discussions on capacity building for GHG inventories in the past, requirements for reporting on support received and a desire to better understand how support is utilized have driven a push for greater capacity in tracking support.

Opportunities for mutual benefits should be seized, such as the possibility of integrating national climate measurement, reporting, and verification systems with the monitoring and evaluation processes required to support the 2030 Agenda for Sustainable Development. Such an approach can streamline efforts and enhance policymakers' abilities to identify cobenefits and cost-effective measures. Further, a growing number of countries are seeking to ensure policy alignment among NDCs, national adaptation plans, green growth plans, and SDG-related plans through the design of integrated indicators for these different agendas. This illustrates increased recognition that a more integrated approach to developing national climate change and SDG indicators, and to reporting and reviewing progress, could allow governments not only to minimize duplications and costs but also to enhance policy coherence.

Lasting systems and knowledge are critical to building capacity. More effort is required to build the critical knowledge within key national institutions, by looking at the educational channels and exploring further pedagogical approaches, including twinning programs, to produce active national and regional peer and professional communities. National capacity-building centers—national universities and training centers—need to play a central role in the building of more durable processes for collecting and managing better data, while creating sustainable skills and jobs.

Many bodies, established under the Convention and/or serving the Paris Agreement, have a mandate to monitor, evaluate, and organize activities related to capacity building. But as countries move to implement the Paris Agreement, capacity-building bodies need to remain relevant to meeting the Agreement's goals and keep pace with societal, technological, economic, and institutional changes. These bodies should provide the right space, surface best practices, and generate the level of information, advice, platforms, and other outputs needed to guide countries' efforts on the ground. The Paris Committee on Capacity-building is tasked with reviewing the international institutional arrangement on capacity

building by COP25 in 2019. This exercise should take stock of what works and what does not, and identify weaknesses and opportunities in the international structure to strengthen it. In addition to these formal international mechanisms and bodies, many initiatives and bilateral efforts are addressing various capacity-building gaps in transparency and can be leveraged. All these actors need to operate in a well-coordinated manner to secure both synergy and complementarity between all these initiatives.

While this paper has mapped the international review mechanisms, UNFCCC bodies, and various bilateral and multilateral initiatives to identify and leverage the opportunities at hand, further research is needed to identify more transformational types of capacity building. Efforts must be made to put forward more innovative, long-term, and sustainable capacity-building approaches that go beyond individual knowledge and result in sustained storage and retention of the necessary knowledge and data to inform the design of more ambitious action. The preparation of national capacity-building strategies is one way of moving toward a nationally owned programmatic approach that can promote endogenous institutional mobilization and replace the project-by-project approach that has dominated in the past. Regardless, with the limited time left to curb the trajectory of global emissions and achieve climate-resilient societies, efforts to advance capacity building must be smarter and more effective, integrated, and sustainable than over the past 20 years.

This paper provides only a landscape analysis of a set of experiences, processes, and lessons learned that can be leveraged to support countries in their transparency-related capacity-building journeys. More research can be done as new initiatives, approaches, and tools emerge. Further consultations and analysis need to be undertaken to determine how to further strengthen the mandates of existing bodies, such as the CGE and PCCB (as decisions are expected by the end of this year), and make them more effective. After all, capacity building is a process, whose research and implementation continue.

APPENDIX A: INFORMAL QUESTIONNAIRE

In early 2018, as part of their efforts to gather feedback and elicit expertise, the authors distributed a brief, informal questionnaire to a number of stakeholders, experts, and practitioners. The questionnaire was distributed to capacity-building recipients, capacity-building providers, and several experts with experience working on capacity building for transparency, especially within the context of the UNFCCC. In total, 15 experts responded to the questionnaire in their personal capacities. The feedback and ideas shared through this initial questionnaire shaped the authors' approach to this paper.

Questions for all

- What types of capacity-building support would you consider to be effective for the successful implementation of the Paris Agreement's enhanced transparency framework?
- What types of capacity-building support are developing countries requesting to implement the enhanced transparency framework?

Questions for capacity-building recipients

- What capacity-building initiatives in support of the enhanced transparency framework are underway (in your country or region)?
- Do the initiatives (identified in the question immediately above) directly respond to capacity gaps and needs previously identified in national reports (NatComms, BURs, NDCs)?
- Do you feel that national reports (NatComms, BURs, NDCs) are an effective way to communicate capacity gaps and needs to donors and the international community?
- Aside from fulfilling reporting requirements, why do you report on capacity gaps and needs through national reports?
- Does your country's domestic MRV framework support your understanding and reporting on capacity gaps and needs?
- How have capacity gaps and needs impacted your ability to report on capacity gaps and needs?

Questions for capacity-building providers

- What factors guide your provision of capacity-building support? Do you consider national reports (NatComms, BURs, NDCs) from developing countries when determining your provision of support?
- What types of capacity-building support do you offer? How are these types determined?
- What are the main capacity-building challenges that you see in establishing the enhanced transparency framework?
- How do you define and assess the success of your capacity-building actions? Are some actions more successful than others?

APPENDIX B: COMPARING NON–ANNEX I/DEVELOPING COUNTRY REPORTING MANDATES UNDER EXISTING AND NEW TRANSPARENCY GUIDELINES

Table B1 illustrates the differences in reporting for non–Annex I Parties/developing country Parties under the existing transparency arrangements—national communications (NCs) and biennial update reports (BURs)—and the new Paris Agreement biennial transparency reports (BTRs). Note that the existing arrangements described in the table apply only to non–Annex I Parties, while the BTR arrangements apply to all Parties to the Paris Agreement (except reporting of support received and needed). The first column generally indicates the information to be provided, and the next three columns note the relevant mandate from the reporting guidelines found in Decision 17/CP.8 for NCs, Decision 2/CP.17 for BURs, and Decision 18/CMA.1 for BTRs. These columns note the relevant paragraph in the guidelines and the legal nature of the mandate ("shall," "should," "encouraged," or "may").

Table B1 | **Comparison of Non–Annex I/Developing Country Reporting Mandates**

MAIN INFORMATION REQUIRED	NCS (DECISION 17/CP.8, ANNEX)	BURS (DECISION 2/CP.17 ANNEX III)	BTRS (DECISION 18/CMA.1)
		National GHG Inventories	
Institutional arrangements	**Encouraged** to describe procedures and arrangements undertaken to collect 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 (para. 13).	Same as NCs	**Shall** report on the following functions related to inventory planning, preparation and management: Its national entity or national focal point with overall responsibility for the national inventory; Its inventory preparation process, including division of specific responsibilities of institutions participating in the inventory preparation to ensure that sufficient activity data collection, choice and development of methods, emission factors and other parameters are in accordance with the IPCC guidelines referred to in chapter II.C.1 below and these modalities, procedures and guidelines; Its archiving of all information for the reported time series, including all disaggregated emission factors and activity data, all documentation about generating and aggregating data, including quality assurance/quality control (QA/QC), review results and planned inventory improvements; Its processes for the official consideration and approval of the inventory (para. 19).
Methodologies	**Should** use Revised 1996 (para. 8). **Encouraged** to apply IPCC GPG 2000 (para. 11). **Encouraged** to provide information on methodologies used,... including a brief explanation of the sources of emission factors and activity data (para. 21).	**Should** use Revised 1996, IPCC GPG 2000 and IPCC GPG LULUCF 2003 (para. 5).	**Shall** use 2006 IPCC Guidelines. Encouraged to use the 2013 Wetland Supplement (para. 20). **Shall** report methods used, including the rationale for the choice of methods, in accordance with good practice elaborated in the IPCC guidelines..., and the descriptions, assumptions, references and sources of information used for the emission factors and activity data used to compile the GHG inventory (para. 39). **Shall** provide information on the category and gas, and the methodologies, emission factors, and activity data used at the most disaggregated level, to the extent possible, according to the IPCC guidelines (para. 40).

Table B1 | **Comparison of Non-Annex I/Developing Country Reporting Mandates** (cont.)

MAIN INFORMATION REQUIRED	NCS (DECISION 17/CP.8, ANNEX)	BURS (DECISION 2/CP.17 ANNEX III)	BTRS (DECISION 18/CMA.1)
Last reporting year	**Shall** estimate national GHG inventories for the year 1994 for the initial national communication or alternatively may provide data for the year 1990. For the second national communication, non-Annex I Parties shall estimate national GHG inventories for the year 2000 (para. 7).	**Shall** cover, at a minimum, the inventory for the calendar year no more than four years prior to the date of the submission... subsequent biennial update reports shall cover a calendar year that does not precede the submission date by more than four years (2/CP.17, para. 41g).	**Shall** be no more than two years (X–2) prior to the submission of its national inventory report; ***with flexibility*** to instead have their latest reporting year as three years (X–3) (para. 58).
Time series	(See entry above.)	**Encouraged** to provide a consistent time series back to the years reported in the previous NC (para. 7).	**Shall** report a consistent annual time series starting from 1990; ***with flexibility*** to instead report data covering, at a minimum, the reference year/period for its NDC and, in addition, a consistent annual time series from at least 2020 onward (para. 57).
Gases	**Shall** report CO_2, CH_4 and N_2O (para. 14). **Encouraged** to report HFCs, PFCs and SF_6 (para. 15) and CO, NO_x and NMVOCs (para. 16).	Same as NCs	**Shall** report CO_2, CH_4, N_2O, HFCs, PFCs, SF_6 and NF_3; ***with flexibility*** to instead report at least three gases (CO_2, CH_4 and N_2O) as well any of the additional four gases (HFCs, PFCs, SF_6 and NF_3) that are included in the Party's NDC, are covered under Article 6, or have been previously reported (para. 48). **Shall** report actual emissions of HFCs, PFCs, SF_6 and NF_3, providing disaggregated data by chemical (e.g., HFC-134a) (para. 49). **Should** report CO, NO_x, and NMVOCs (para. 51).
Key categories	**Encouraged**, to the extent possible, to undertake any key source analysis as indicated in the IPCC good practice (para. 12).	Same as NCs	**Shall** describe the key categories, including information on the approach used for their identification, and information on the level of disaggregation used (para. 41). **Shall** report the individual and cumulative percentage contributions from key categories, for both level and trend, consistent with the IPCC guidelines (para. 42).
Recalculations	No requirement	Same as NCs	**Shall** report recalculations for the starting year...and all subsequent years of the inventory time series, together with explanatory information and justifications for recalculations with an indication of relevant changes and their impact on the emission trends (para. 43).

Table B1 | **Comparison of Non-Annex I/Developing Country Reporting Mandates** (cont.)

MAIN INFORMATION REQUIRED	NCS (DECISION 17/CP.8, ANNEX)	BURS (DECISION 2/CP.17 ANNEX III)	BTRS (DECISION 18/CMA.1)
Uncertainties	**Encouraged** to provide information on the level of uncertainty associated with inventory data and their underlying assumptions (para. 24).	Same as NCs	**Shall** report the results of the uncertainty analysis as well as methods used, underlying assumptions (para. 44); ***with flexibility*** to instead provide, at a minimum, a qualitative discussion of uncertainty for key categories, using the IPCC guidelines…where quantitative input data are unavailable to quantitatively estimate uncertainties, and are encouraged to provide a quantitative estimate of uncertainty for all source and sink categories of the GHG inventory (para 29).
QA/QC	No requirement	Same as NCs	**Shall** implement and provide information on general inventory QC procedures in accordance with its QA/QC plan and the IPCC guidelines; ***with flexibility*** are encouraged to to implement and provide information on general inventory QC procedures in accordance with its QA/QC plan and the IPCC guidelines (para. 34). **Should** apply category-specific QC procedures in accordance with the IPCC guidelines for key categories and for those individual categories in which significant methodological changes and/or data revisions have occurred (para. 35). **Should** implement QA procedures by conducting a basic expert peer review of their inventories, in accordance with the IPCC guidelines (para. 35).
Mitigation Actions/Information Necessary to Track Progress			
Scope	**Shall**…provide to the COP information on the general descriptions of steps taken or envisaged for formulating, implementing, publishing and regularly updating national and, where appropriate, regional programmes containing measures to mitigate climate change (para. 37).	**Should** provide information, in a tabular format, on actions to mitigate climate change (para. 11).	**Shall** provide a description of its NDC under Article 4, against which progress will be tracked (para. 64). **Shall** provide information on actions, policies and measures that support the implementation and achievement of its NDC (para. 80).

Table B1 | **Comparison of Non-Annex I/Developing Country Reporting Mandates** (cont.)

MAIN INFORMATION REQUIRED	NCS (DECISION 17/CP.8, ANNEX)	BURS (DECISION 2/CP.17 ANNEX III)	BTRS (DECISION 18/CMA.1)
Methods	**Encouraged** to use whatever methods are available and appropriate in order to formulate and prioritize programs containing measures to mitigate climate change; this should be done within the framework of sustainable development objectives, which should include social, economic and environmental factors (para. 38).	No requirement	**Shall** identify the indicator(s) that it has selected to track progress towards the implementation and achievement of its NDC (para. 65). For the first NDC... **shall** clearly indicate and report its accounting approach, including how it is consistent with Article 4, paragraphs 13 and 14, of the Paris Agreement (para. 71). For the second and subsequent NDC...**shall** provide information...consistent with the decision (para. 72). **Shall** provide a description of each methodology and/or accounting approach used (paras. 74–76). **Shall** provide the information...in a structured summary to track progress made in implementing and achieving its NDC (para. 77).
Level of detail	**Encouraged** to provide, to the extent their capacities allow, information on programmes and measures implemented or planned which contribute to mitigating climate change... including, as appropriate, relevant information by key sectors on methodologies, scenarios, results, measures and institutional arrangements (para. 40).	**Shall** provide the following information to the extent possible: (a) Name and description of the mitigation action, including information on the nature of the action, coverage (i.e., sectors and gases), quantitative goals and progress indicators; (b) Information on methodologies and assumptions; (c) Objectives of the action and steps taken or envisaged to achieve that action; (d) Information on the progress of implementation of the mitigation actions and the underlying steps taken or envisaged, and the results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible; (e) Information on international market mechanisms (para. 12).	**Shall** provide the following information on its actions, policies and measures, to the extent possible, in a tabular format: (a) Name; (b) Description; (c) Objectives; (d) Type of instrument (regulatory, economic instrument or other); (e) Status (planned, adopted or implemented); (f) Sector(s) affected (energy, transport, industrial processes and product use, agriculture, LULUCF, waste management or other); (g) Gases affected; (h) Start year of implementation; (i) Implementing entity or entities (para. 82). **May** also provide the following information for each action, policy and measure reported: (a) Costs; (b) Non-GHG mitigation benefits; (c) How the mitigation actions...interact with each other, as appropriate (para. 83). **Shall** provide, to the extent possible, estimates of expected and achieved GHG emissions reductions for its actions, policies and measures in the tabular format; ***with flexibility*** instead to encourage the reporting (para. 85).

Table B1 | **Comparison of Non-Annex I/Developing Country Reporting Mandates** (cont.)

MAIN INFORMATION REQUIRED	NCS (DECISION 17/CP.8, ANNEX)	BURS (DECISION 2/CP.17 ANNEX III)	BTRS (DECISION 18/CMA.1)
Projections	No requirement	Same as NCs	**Shall** report projections, ***with flexibility*** instead to encourage the reporting (para. 92).
		Climate Change Impacts and Adaptation	
National circumstances	**Where relevant, may** report on the use of policy frameworks, such as national adaptation programmes, plans and policies for developing and implementing adaptation strategies and measures (para. 36).	No requirement	**Should** provide the following information, as appropriate: (a) National circumstances relevant to adaptation actions of Parties, including biogeophysical characteristics, demographics, economy, infrastructure and information on adaptive capacity; (b) Institutional arrangements and governance, including for assessing impacts, addressing climate change at the sectoral level, decision-making, planning, coordination, addressing cross-cutting issues, adjusting priorities and activities, consultation, participation, implementation, data governance, monitoring and evaluation, and reporting; (c) Legal and policy frameworks and regulations (para. 106).
Impacts, risks, and vulnerabilities	**Should** provide information on their vulnerability to the adverse effects of climate change...(para. 29). **Encouraged** to provide information on the scope of their vulnerability and adaptation assessment, including identification of vulnerable areas that are most critical (para. 32).	No requirement	**Should** provide the following information, as appropriate: (a) Current and projected climate trends and hazards; (b) Observed and potential impacts of climate change, including sectoral, economic, social and/or environmental vulnerabilities; (c) Approaches, methodologies and tools, and associated uncertainties and challenges used in paragraph 107(a) and (b) above (para. 107).
Adaptation priorities	**Encouraged** to 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 (para. 35).	No requirement	**Should** provide the following information, as appropriate: (a) Domestic priorities and progress towards these priorities; (b) Adaptation challenges and gaps and barriers to adaptation (para. 108).

Table B1 | **Comparison of Non-Annex I/Developing Country Reporting Mandates** (cont.)

MAIN INFORMATION REQUIRED	NCS (DECISION 17/CP.8, ANNEX)	BURS (DECISION 2/CP.17 ANNEX III)	BTRS (DECISION 18/CMA.1)
Adaptation strategies	**Encouraged** to 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 (para. 35).	No requirement	**Should** provide the following information, as appropriate: (a) Implementation of adaptation actions in accordance with the global goal for adaptation, as set out in Article 7, paragraph 1, of the Paris Agreement; (b) Adaptation goals, actions, objectives, undertakings, efforts, plans (e.g., national adaptation plans and subnational plans), strategies, policies, priorities (e.g., priority sectors, priority regions or integrated plans for coastal management, water and agriculture), programmes and efforts to build resilience; (c) How best available science, gender perspectives and indigenous, traditional and local knowledge are integrated into adaptation; (d) Development priorities related to climate change adaptation and impacts; (e) Any adaptation actions and/or economic diversification plans leading to mitigation co-benefits; (f) Efforts to integrate climate change into development efforts, plans, policies and programming, including related capacity-building activities; (g) Nature-based solutions to climate change adaptation; (h) Stakeholder involvement, including subnational, community-level and private sector plans, priorities, actions and programmes.
Implementation of adaptation	**Should** provide information... on adaptation measures being taken to meet their specific needs and concerns arising from these adverse effects (para. 29).	No requirement	**Should** provide the following information, as appropriate, on progress in: (a) Implementation of the actions identified in chapter IV.D above; (b) Steps taken to formulate, implement, publish and update national and regional programmes; strategies and measures, policy frameworks (e.g. national adaptation plans) and other relevant information; (c) Implementation of adaptation actions identified in current and past adaptation communications, including efforts towards meeting adaptation needs, as appropriate; (d) Implementation of adaptation actions identified in the adaptation component of NDCs, as applicable; (e) Coordination activities and changes in regulation, policies and planning (para. 110).
Monitoring and evaluation of adaptation	No requirement	No requirement	**Should** report on the establishment or use of domestic systems to monitor and evaluate the implementation of adaptation actions (para. 112).
Loss and damage	No requirement	No requirement	**May provide, as appropriate,** information related to enhancing understanding, action and support, on a cooperative and facilitative basis, to avert, minimize and address loss and damage associated with climate change impacts, taking into account projected changes in climate-related risks, vulnerabilities, adaptive capacities and exposure (para. 115).

Table B1 | **Comparison of Non-Annex I/Developing Country Reporting Mandates** (cont.)

MAIN INFORMATION REQUIRED	NCS (DECISION 17/CP.8, ANNEX)	BURS (DECISION 2/CP.17 ANNEX III)	BTRS (DECISION 18/CMA.1)
Good practices and lessons learned	No requirement	No requirement	**Should** provide the following information, as appropriate, related to cooperation, good practices, experience and lessons learned (para. 116).
Finance, Technology, Capacity-Building Support Needs and Support Received			
National circumstances	No requirement	No requirement	**Should** provide information on national circumstances and institutional arrangements relevant to reporting on support needed and received, including: (a) A description of the systems and processes used to identify, track and report support needed and received, including a description of the challenges and limitations; (b) Information on country priorities and strategies and on any aspects of the Party's NDC under Article 4 of the Paris Agreement that need support (para. 130).
Assumptions, definitions, methodologies	No requirement	No requirement	**Should** describe the underlying assumptions, definitions and methodologies used to provide information on support needed and received (para. 131).
Financial support needs	**Should** describe...proposed and/or implemented activities for overcoming the gaps and constraints (para. 49).	**Should** provide updated information on constraints and gaps, and related financial, technical and capacity-building needs (para. 14).	**Should** provide textual information to the extent possible, and as available and as applicable: (a) Sectors for which the Party wishes to attract international finance, including existing barriers to attracting international finance; (b) Description of how the support will contribute to its NDC and to the long-term goals of the Paris Agreement (para. 132). **Should** provide in a tabular format...(para. 133).
Financial support received	**Should** also provide information on financial resources and technical support provided...(para. 51).	**Should** also provide updated information on financial resources, technology transfer, capacity-building and technical support received...(para. 15).	**Should** provide in a tabular format...(para. 134).
Technology support needs	**Encouraged** to provide information on country-specific technology needs (para. 54).	**Should** provide information on technology needs, which must be nationally determined (para. 16).	**Should** provide textual information to the extent possible, and as available and as applicable: (a) Plans, needs and priorities related to technology development and transfer, including those identified in Technology Needs Assessments, where applicable; (b) Technology development and transfer related needs for the enhancement of endogenous capacities and technologies (para. 135). **Should** provide in a tabular format...(para. 136).

Table B1 | **Comparison of Non-Annex I/Developing Country Reporting Mandates** (cont.)

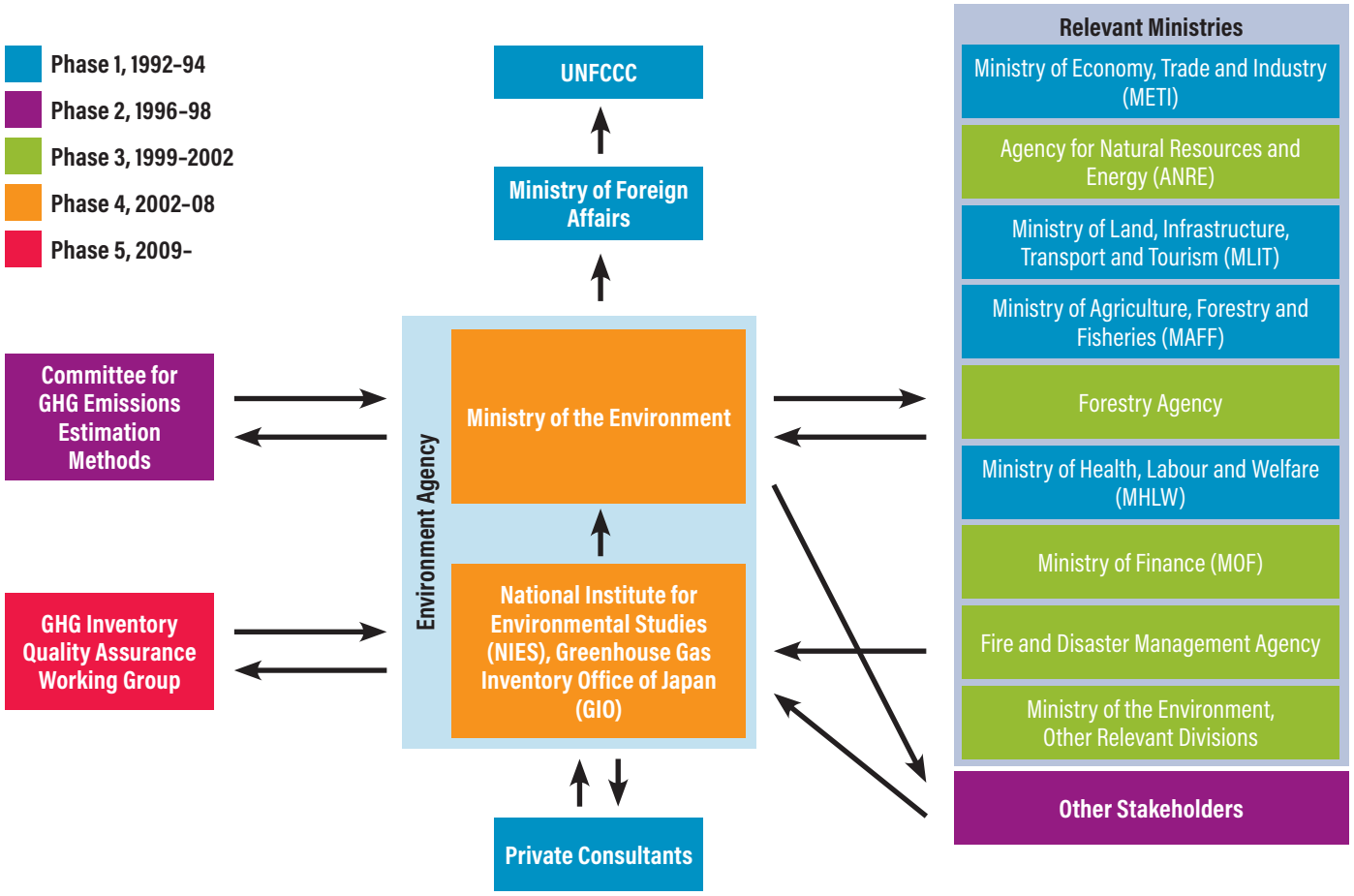
MAIN INFORMATION REQUIRED	NCS (DECISION 17/CP.8, ANNEX)	BURS (DECISION 2/CP.17 ANNEX III)	BTRS (DECISION 18/CMA.1)
Technology support received	**Encouraged** to provide information on...assistance received from developed country Parties and the financial mechanism of the Convention and, as appropriate, on how they have utilized this assistance in support of the development and enhancement of endogenous capacities, technologies and know-how (para. 54).	**Should** also provide updated information on financial resources, technology transfer, capacity-building and technical support received (para. 15). **Should** provide information... on technology support received (para. 16).	**Should** provide textual information to the extent possible, and as available and as applicable: (a) Case studies, including key success and failure stories; (b) How the support contributes to technology development and transfer, endogenous capacities and know-how; (c) The stage of the technology cycle supported, including research and development, demonstration, deployment, diffusion and transfer of technology (para. 137). **Should** provide in a tabular format...(para. 138).
Capacity support needs	**Should** describe...proposed and/or implemented activities for overcoming the gaps and constraints (para. 49).	**Should** provide updated information on constraints and gaps, and related financial, technical and capacity-building needs (para. 14).	**Should** provide textual information to the extent possible, and as available and as applicable: (a) The approach a Party seeks to take to enhance capacity-building support; (b) Country-specific capacity-building needs, constraints and gaps in communicating those needs, and an explanation of how the capacity-building support needed would improve the provision of such information; (c) Processes for enhancing public awareness, public participation and access to information in relation to capacity building (para. 139). **Should** provide in a tabular format...(para. 140).
Capacity support received	**Should** also provide information on financial resources and technical support received (para. 51).	**Should** also provide updated information on financial resources, technology transfer, capacity-building and technical support received (para. 15).	**Should** provide textual information to the extent possible, and as available and as applicable: (a) Case studies, including key success and failure stories; (b) How support received has enhanced a Party's capacity; (c) Capacity-building support received at the national and, where appropriate, subregional and regional level, including priorities, participation and the involvement of stakeholders (para. 141). **Should** provide in a tabular format...(para. 142).
Support needed and received for transparency-related capacity building	**Should** provide information on financial resources and technical support for the preparation of their national communications provided (para. 50).	**Should** also provide updated information on financial resources, technology transfer, capacity-building and technical support received...including for the preparation of the current [BUR] (para. 15).	**Should** provide information on support needed and received for implementing Article 13 of the Paris Agreement and transparency-related activities, including on, to the extent possible: (a) Support needed and received for preparing reports pursuant to Article 13; (b) Support needed and received for addressing the areas for improvement identified by the technical expert review teams (para. 143). **Should** provide in a tabular format...(para. 144).

NOTE: Bold and italics emphasis within Table B1 has been added by the authors. The information in Table B1 includes extract of COP decisions, together with the assessment of the authors.

APPENDIX C: THE HISTORY OF JAPAN'S MRV SYSTEM

It took many years for Japan to build out its MRV system to the current level of sophistication and coordination. Figure C1 illustrates Japan's MRV system and uses color to demonstrate the evolution in the system over time. The figure and the legend note the various phases during which the system expanded and indicate when various elements were incorporated into the system.

Figure C1 | **The Evolution of Japan's MRV System**



APPENDIX D: SELECTED CAPACITY-BUILDING INITIATIVES

Table D1 provides a selected list of a few initiatives providing transparency-related support or work.

Table D1 | **Selected List of Transparency-Related Support Initiatives**

INITIATIVE	DESCRIPTION	WEB LINK
Partnership on Transparency in the Paris Agreement (PATPA)	PATPA was established in 2016 to promote support for practical exchange and policy dialogue between countries on enhanced climate transparency (PATPA n.d.). This initiative built on the earlier 2010 international partnership on mitigation and MRV between Germany, South Africa, and South Korea. PATPA expanded its scope to cover the transparency not only of mitigation actions, but also of adaptation and support. More than 100 countries participate in PATPA activities, together with numerous agencies, research organizations, and other international initiatives (PATPA n.d.).	www.transparency-partnership.net/
Information Matters	Information Matters is a project of GIZ, Germany's international development agency. The project aims to support countries in preparing their transparency reports under the Convention. It does so through approaches specific to developing countries in close consultation with country stakeholders and through national workshops, which bring together country and international experts (GIZ n.d.)	www.giz.de/en/worldwide/30164.html
Initiative for Climate Action Transparency (ICAT)	ICAT was established in 2016 to promote the use of a common voluntary framework to assess the impacts of countries' policies and actions, report progress, and foster greater transparency, effectiveness, and ambition (ICAT 2016). The initiative relies on the development of guidance and capacity-building activities to improve the availability and quality of data and enable countries to promote efficient and cost-effective policies. In addition to developing guidance, ICAT integrates capacity-building activities and knowledge-sharing to engage countries in the use of a common framework.	climateactiontransparency.org/
Partnership to Strengthen Transparency for co-Innovation (PaSTI)	PaSTI seeks to support developing countries, particularly in the Asia-Pacific region, to strengthen transparency by engaging non-state actors and developing innovative incentive mechanisms that support the exchange of data (Overseas Environmental Cooperation Center, Japan 2019).	www.oecc.or.jp/en/pasti/index.html
Coalition on Paris Agreement Capacity Building	The coalition is comprised of a pool of experts with experience in greenhouse gas MRV and capacity-building activities. This coalition has provided an expert forum for the coordination and acceleration of improved capacity-building activities and has published recommendations for capacity-building strategy, including expert input to the PCCB and CBIT (Coalition on Paris Agreement Capacity Building 2019).	www.capacitybuildingcoalition.org/
Partnership for Market Readiness (PMR)	The PMR rallies countries, organizations, and experts to explore and identify innovative approaches to GHG mitigation using markets and carbon pricing, including the underlying MRV system. An MRV workstream focuses on developing guidance for implementing and designing MRV systems that can support carbon-pricing efforts (PMR 2016).	www.thepmr.org/
Low Emission Development Strategies Global Partnership (LEDS-GP)	LEDS-GP aims to advance climate-resilient low-emission development and support transitions to a low-carbon economy through coordination, information exchange, and cooperation among countries and key organizations.	www.ledsgp.org
Research collaborative led by the Organisation for Economic Co-operation and Development (OECD) to track private climate finance	The OECD research collaborative brings governments, research institutions, and international finance institutions to partner and share best available data, expertise, and information to advance policy-relevant research on tracking private climate finance in a comprehensive and timely manner. This work aims to contribute to the design of international guidance for the tracking and transparency of support (OECD 2018).	www.oecd.org/finance/tracking-climate-finance.htm

ENDNOTES

1. This paper uses the phrase "existing arrangements" to refer to the transparency systems and processes established prior to the Paris Agreement. These arrangements include the reporting of biennial reports for Annex I Parties and biennial update reports for non–Annex I Parties. These arrangements will continue until superseded by the Paris Agreement's enhanced transparency framework.
2. This definition builds upon and updates the definition presented in Dagnet et al. 2015, which was originally adapted from the definition included in OECD 2010. It reflects the growing consensus that countries should drive their own development and that capacity should be built from within to reduce the need for external assistance.
3. Articles 11 and 12 of the Paris Agreement echo Articles 3.2, 3.4, and 6 of the UN Framework Convention on Climate Change.
4. For the evolving history of NC reporting deadlines, see the following COP decisions. For Annex I Parties: Convention, Article 12.5; Decision 9/CP.2, para. 4a; Decision 11/CP.4, para. 2a; Decision 4/CP.8, para. 3; Decision 10/CP.13, para. 2; Decision 9/CP.16, para. 5; Decision 2/CP.17, para. 14. For non–Annex I Parties: Convention, Article 12.5; Decision 8/CP.11, para. 3; Decision 1/CP.16, para. 60b.
5. Parties to the Paris Agreement will be able to submit their national communications using the same guidance as for their biennial transparency reports, but they will be required to add supplemental chapters on research and systematic observation and education, training, and public awareness, according to existing NC guidance.
6. Eight years after the adoption of the BUR guidance, only 45 countries were able to submit their first BUR, as of February 1, 2019.
7. As of February 1, 2019, Ukraine had not submitted its BR2, BR3, or NC7. Belarus and the United States have not submitted their BR3s or NC7s.
8. This paper uses the terms "institutional framework(s)," "institutional structure(s)," and "institutional arrangements" interchangeably. In the context of the Paris Agreement's enhanced transparency framework, we use these terms to refer to "a law or other formal provision that assign[s] primary responsibility as well as the authority to an agency for the collection, processing, and dissemination" of related information and also includes "arrangements or procedures to facilitate data sharing and coordination between data producing agencies" (OECD 2007). The MPGs of the enhanced transparency framework do not define "institutional arrangements."
9. As of February 2019, the following countries had produced a Partnership Plan: Colombia, the Dominican Republic, Guatemala, Honduras, Mali, the Marshall Islands, Mongolia, Morocco, Mozambique, Namibia, Rwanda, Saint Lucia, São Tomé and Príncipe, Uganda, and Vietnam. Many others, like Côte d'Ivoire, Grenada, Pakistan, and the Seychelles, have started the process and should complete it by the end of 2019.

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World Resources Institute is a global research organization that turns big ideas into action at the nexus of environment, economic opportunity, and human well-being.

Our Challenge
Natural resources are at the foundation of economic opportunity and human well-being. But today, we are depleting Earth's resources at rates that are not sustainable, endangering economies and people's lives. People depend on clean water, fertile land, healthy forests, and a stable climate. Livable cities and clean energy are essential for a sustainable planet. We must address these urgent, global challenges this decade.

Our Vision
We envision an equitable and prosperous planet driven by the wise management of natural resources. We aspire to create a world where the actions of government, business, and communities combine to eliminate poverty and sustain the natural environment for all people.

Our Approach
COUNT IT
We start with data. We conduct independent research and draw on the latest technology to develop new insights and recommendations. Our rigorous analysis identifies risks, unveils opportunities, and informs smart strategies. We focus our efforts on influential and emerging economies where the future of sustainability will be determined.

CHANGE IT
We use our research to influence government policies, business strategies, and civil society action. We test projects with communities, companies, and government agencies to build a strong evidence base. Then, we work with partners to deliver change on the ground that alleviates poverty and strengthens society. We hold ourselves accountable to ensure our outcomes will be bold and enduring.

SCALE IT
We don't think small. Once tested, we work with partners to adopt and expand our efforts regionally and globally. We engage with decision-makers to carry out our ideas and elevate our impact. We measure success through government and business actions that improve people's lives and sustain a healthy environment.

ABOUT PACT

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 PACT consortium's work, please visit: http://www.wri.org/pact.

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