



Handbook on institutional arrangements to support MRV/transparency of climate action and support

Consultative Group of Experts

United Nations Framework Convention on Climate Change secretariat
June 2020



United Nations
Framework Convention on
Climate Change

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Abbreviations and acronyms

BTR	biennial transparency report
BUR	biennial update report
CGE	Consultative Group of Experts
CO₂	carbon dioxide
DSA	data sharing agreements
ETF	enhanced transparency framework under Article 13 of the Paris Agreement
FTE	full-time equivalent
FMCP	facilitative, multilateral consideration of progress
GHG	greenhouse gas
ICA	international consultation and analysis
IPCC	Intergovernmental Panel on Climate Change
IT	information technology
MOU	memorandum of understanding
MPGs	modalities, procedures and guidelines
MRV	measurement, reporting and verification
NC	national communication
NDC	nationally determined contribution
NGO	non-governmental organization
non-Annex I Party	Party not included in Annex I to the Convention
QA/QC	quality assurance/quality control
SDG	Sustainable Development Goal
TER	technical expert review



About this handbook

The [CGE](#) provides technical support and advice to developing country Parties for implementing the existing MRV arrangements under the Convention and the ETF under the Paris Agreement.

This handbook is one of three resource products that constitute the [CGE Toolbox on Institutional Arrangements](#), which the CGE developed in accordance with its workplans for 2019–2020. The handbook aims to help experts and practitioners on the ground improve their national institutional arrangements, which are instrumental to implementing the existing MRV arrangements under the Convention and the ETF under the Paris Agreement in a timely and sustainable manner.

The other two resource products in the CGE Toolbox on Institutional Arrangements are: a compilation of country experiences and lessons learned and a compilation of references to other relevant technical resources.

A person wearing a green suit jacket is holding a small, translucent globe of the Earth. The globe is held gently in both hands, and the person's fingers are visible. The background is a blurred green, matching the suit. A blue rectangular box is overlaid on the right side of the image, containing the chapter title and a paragraph of text.

Chapter 1

Introduction

Countries need a regular and reliable flow of information about their GHG trends and projections, the effects of their policies and measures, their climate risks, their opportunities and actions to reduce GHG emissions, and support needed and received for climate action. Such information supports evidence-based national decision-making and the timely submission of quality national reports to the Convention and the Paris Agreement. In order to compile and report this information on a biennial basis, or more frequently for other national needs, countries need appropriate institutional arrangements.

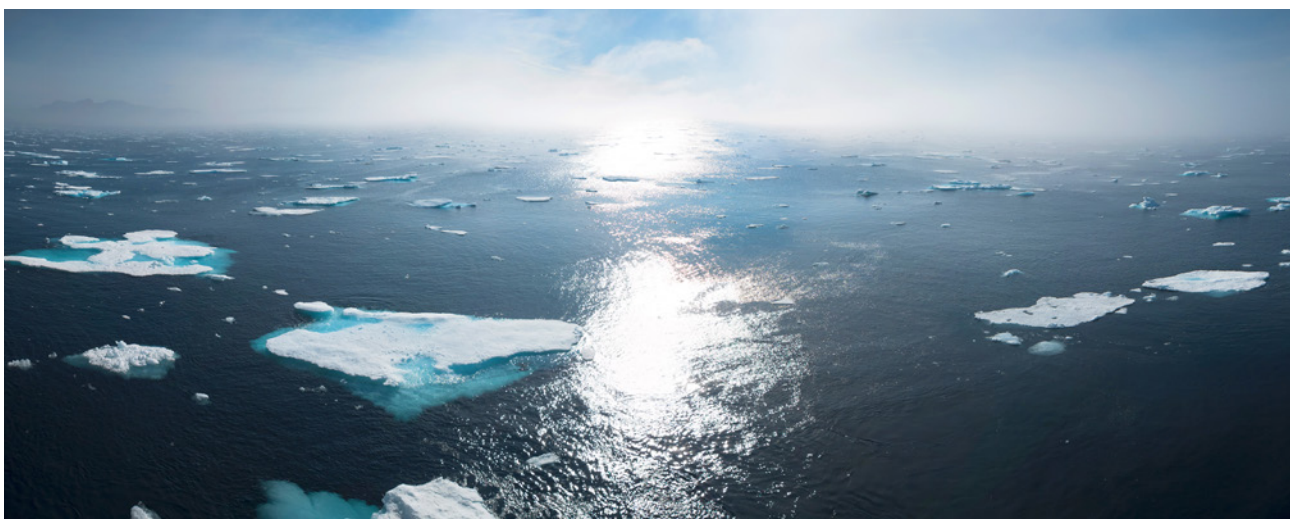


The United Nations Framework Convention on Climate Change (hereinafter referred to as the Convention) provides the foundation for the intergovernmental response to climate change and its impacts on humanity and ecosystems. In order to collectively address climate change and achieve the objective of the Convention and the purpose and goals of the Paris Agreement, countries need to mobilize actions that maximize opportunities for low GHG emission and climate-resilient development and minimize risks to financial returns, social cohesion and environmental protection. Mobilizing action requires prioritizing action and investment. Doing so requires an understanding not only of the problems, the capability of different actions to solve them, the costs of these actions, and the co-benefits or conflicts of the actions with national development strategies and SDGs – but also of the opportunities and actions to harness them.

The regular collection, analysis and use of reliable information on climate action and support to reduce GHG emissions and increase resilience, and data on GHG emission trends, both historical and projected, is essential for evidence-based decision-making and information-sharing, which in turn build trust and understanding and promote stakeholder engagement. This data collection and reporting activity forms a critical component of what is commonly known as 'MRV' under the Convention and has recently been encapsulated by the term 'transparency' under the Paris Agreement. For the purpose of readability, in this handbook, the term 'transparency' refers to MRV activities associated with both the existing MRV arrangements under the Convention and the ETF under the Paris Agreement.

With the objective of communicating reliable, transparent and comprehensive information on GHG emissions, actions and support, the transparency of climate action and support forms an essential basis for understanding current GHG emission levels, the ambition of existing efforts, as well as understanding progress on both the national and international scale.

The existing MRV arrangements under the Convention provide for a system where the requirements concerning information to be reported, the timetable for the submission of national reports and the extent of international review of information are less onerous for non-Annex I Parties than those Parties that are included in Annex I to the Convention. The ETF under the Paris Agreement builds on and enhances the existing MRV arrangements and establishes a framework for all Parties to operate under a common set of modalities, procedures and guidelines (MPGs) with flexibility for those developing country Parties that need it in the light of their capacities.



The transition from the existing MRV arrangements to the ETF will introduce enhanced scope and depth of reporting for developing countries, which underscores the importance of having strong sustainable institutional arrangements in place. The enhanced scope and depth of reporting constitutes a significant challenge in terms of the resources and efforts needed in responding to the reporting requirements. A continuous process of improvement, collection, processing, analysis, compilation, reporting and review of data is likely to fully occupy a core team of national experts throughout the two-year reporting cycles. In addition, the process will require engagement with a broad range of stakeholders for the collection of data and the use of outputs by decision makers.

Strong institutional arrangements will be vital to enabling countries to provide reliable, comprehensive and regularly updated information that meets the enhanced reporting requirements and serves national decision makers and action-implementing stakeholders. Box 1 provides more details on the benefits of strong institutional arrangements.

Box 1 Benefits of strong institutional arrangements

The benefits of strong sustainable institutional arrangements range from supporting decision-making to enhanced and efficient reporting. Strong institutional arrangements will enable critical long-term national capacity to:

- Inform national decision makers on progress on climate action and the level of climate ambition;
- Equip decision makers with the continually improved evidence they need to choose the right course of action and secure investments. Actions must work in harmony with national development strategies and the SDGs;
- Provide reliable information to the international community through regular national reporting which, among other functions, shows national achievements in planning and implementing ambitious climate action, contributes to building trust and understanding, and attracts public and private investment;
- Fulfill international reporting requirements in a timely manner and on a sustainable basis.

It is critical to note that there is no one-size-fits-all model for institutional arrangements. Systems should be designed and tailored such that they will be sustainable under the respective national circumstances. However, some common elements that are essential to supporting continuous improvement in the quality of reporting have been identified on the basis of country experiences and lessons learned.¹ How these elements are implemented allows for different approaches depending on the national circumstances.

In this context, this handbook aims to provide guidance on enhancing institutional arrangements that support the transparency of climate action and support. More specifically, it offers practical tips for the transition at the national level from the current project-based arrangements (focused on producing individual reports), which lack continuity and adequate resources, to arrangements that establish sustainable teams and data flows that can provide regular and continuously improving, robust information for national reports and to national decision makers.

¹ The experiences of countries and lessons learned with respect to the design and implementation of institutional arrangements can be drawn from many sources, including facilitative sharing of views workshops, the CGE Toolbox on Institutional Arrangements and CGE surveys.



The handbook is structured as follows:

Chapter 2
Defining
institutional
arrangements

Provides conceptual explanations of institutional arrangements in the context of transparency, including the thematic scope and key components of institutional arrangements;

Chapter 3
Setting up
institutional
arrangements

Describes the actions involved in developing institutional arrangements, including:

- Defining transparency objectives and outputs;
- Structuring institutional arrangements for transparency;
- Establishing legal frameworks;
- Securing human and financial resources;
- Developing systems and tools;

Chapter 4
Ensuring the
sustainability
of institutional
arrangements

Showcases elements that are essential to sustaining institutional arrangements and continually improving them, including:

- Ensuring high-level support and funding;
- Mainstreaming the transparency framework;
- Defining clear terms of reference;
- Ensuring the career progression of national experts;
- Using consultants;

Chapter 5
Step-by-step
to setting up
and adapting
institutional
arrangements

Offers a practical quick-start guide to developing or enhancing institutional arrangements;

Chapter 6
Reporting on
institutional
arrangements

Provides guidance on reporting on institutional arrangements in national reports.



Chapter 2 Defining institutional arrangements

Well-functioning institutional arrangements are flexible and sustainable, and they facilitate a consistent and continuous flow of data, engage national and subnational expertise, ensure coordination between institutions, and drive recurring, engaging and continuously improving outputs.



This chapter provides conceptual explanations of institutional arrangements in the context of transparency by outlining the thematic scope and key components of institutional arrangements.

2.1 Transparency themes

The thematic scope of the information required to be reported under the existing MRV arrangements and the ETF informs the design and development of institutional arrangements. According to the provisions contained in the decisions listed below, transparency themes can be clustered as national GHG inventory, mitigation, adaptation and support:

- Decision 17/CP.8 and its annex for the preparation of NCs;
- Decision 2/CP.17 and its annexes III and IV for the preparation of BURs and modalities and guidelines for ICA;
- Decision 18/CMA.1 and its annex for the preparation of BTRs, TER and FMCP;
- Decisions 12/CP.17 and its annex, 13/CP.19 and its annex, and 14/CP.19 and its annex for measuring, reporting and verifying the reference levels for and results from the voluntary implementation of REDD+ activities.²

It is important to recognize that, while reporting in NCs under the Convention will continue, BURs and ICA process will be superseded by BTRs, TER and FMCP under the ETF after the final BURs are submitted. Once the submission of the BTRs start, it is possible to submit NCs together with BTRs as a single report following the MPGs for the ETF.³ In addition, countries will need to include in the single report, supplemental chapters on research and systematic observation and on education, training and public awareness. Therefore, institutional arrangements should be designed keeping in mind this evolution, allowing for continuous improvement to data collection, processing, analysis, compilation and reporting, and for putting in place a process to channel the feedback and recommendations from the TER and FMCP process.

Table 1 presents an overview of the thematic scope of reporting and data requirements.

² In decision 1/CP.16, paragraph 70, the COP encouraged developing country Parties to contribute to mitigation actions in the forest sector by undertaking the following activities: reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks.

³ Parties may submit their NCs and BTRs as a single report in accordance with the MPGs for the ETF for information also covered by the UNFCCC reporting guidelines on NCs (decision 1/CP.24, para. 43).

Table 1 Thematic scope of reporting and data requirements

Theme	Sub-themes and data requirements
National GHG inventory 	<ul style="list-style-type: none"> National circumstances and institutional arrangements; National inventory report of emissions by sources and removals by sinks of GHGs; Information on methods and cross-cutting elements (e.g. information on the category and gas, and the methodologies, emission factors and activity data used at the most disaggregated level; description of key categories; recalculations; uncertainty assessments; assessment of completeness; and QA/QC plan); Estimates of emissions and removals for all categories, gases and carbon pools considered in the GHG inventory; Consistent annual time series.
Mitigation ⁴ 	<ul style="list-style-type: none"> National circumstances and institutional arrangements; Description of the NDC; Information necessary to track progress made in implementing and achieving its NDC; Mitigation policies and measures, actions and plans, including those with mitigation co-benefits resulting from adaptation actions and economic diversification plans; Projections of GHG emissions and removals, as applicable; and Other information relevant to tracking progress.
Adaptation ⁵ 	<ul style="list-style-type: none"> National circumstances, institutional arrangements and legal frameworks; Impacts, risks and vulnerabilities, as appropriate (current and projected climate trends and hazards, observed and potential impacts of climate change, including sectoral, economic, social and/or environmental vulnerabilities); Adaptation priorities and barriers; Adaptation strategies, policies, plans, goals and actions to integrate adaptation into national policies and strategies; Progress on implementation of adaptation; Monitoring and evaluation of adaptation actions and processes; Information related to averting, minimizing and addressing loss and damage associated with climate change impacts; Cooperation, good practices, experience and lessons learned.
Support ^{6,7} 	<ul style="list-style-type: none"> National circumstances, institutional arrangements and country-driven strategies; Description of underlying assumptions, definitions and methodologies used to provide information on support provided, mobilized, needed and received; Information on financial support provided, mobilized, needed and received under Article 9 of the Paris Agreement; Information on technology development and transfer provided, needed and received under Article 10 of the Paris Agreement; Information on capacity-building support provided, needed and received under Article 11 of the Paris Agreement; Information on support needed and received for the implementation of Article 13 of the Paris Agreement and transparency-related activities, including for transparency-related capacity-building.

4 In accordance with Article 3 of the Paris Agreement, as nationally determined contributions to the global response to climate change, all Parties are to undertake and communicate ambitious efforts as defined in Articles 4, 7, 9, 10, 11 and 13 with the view to achieving the purpose of the Paris Agreement.

5 As footnote 4 above.

6 As footnote 4 above.

7 Sub-themes include information on support needed and received by developing country Parties, and information on support provided and mobilized by other Parties that provide support.

2.2 Key components of institutional arrangements

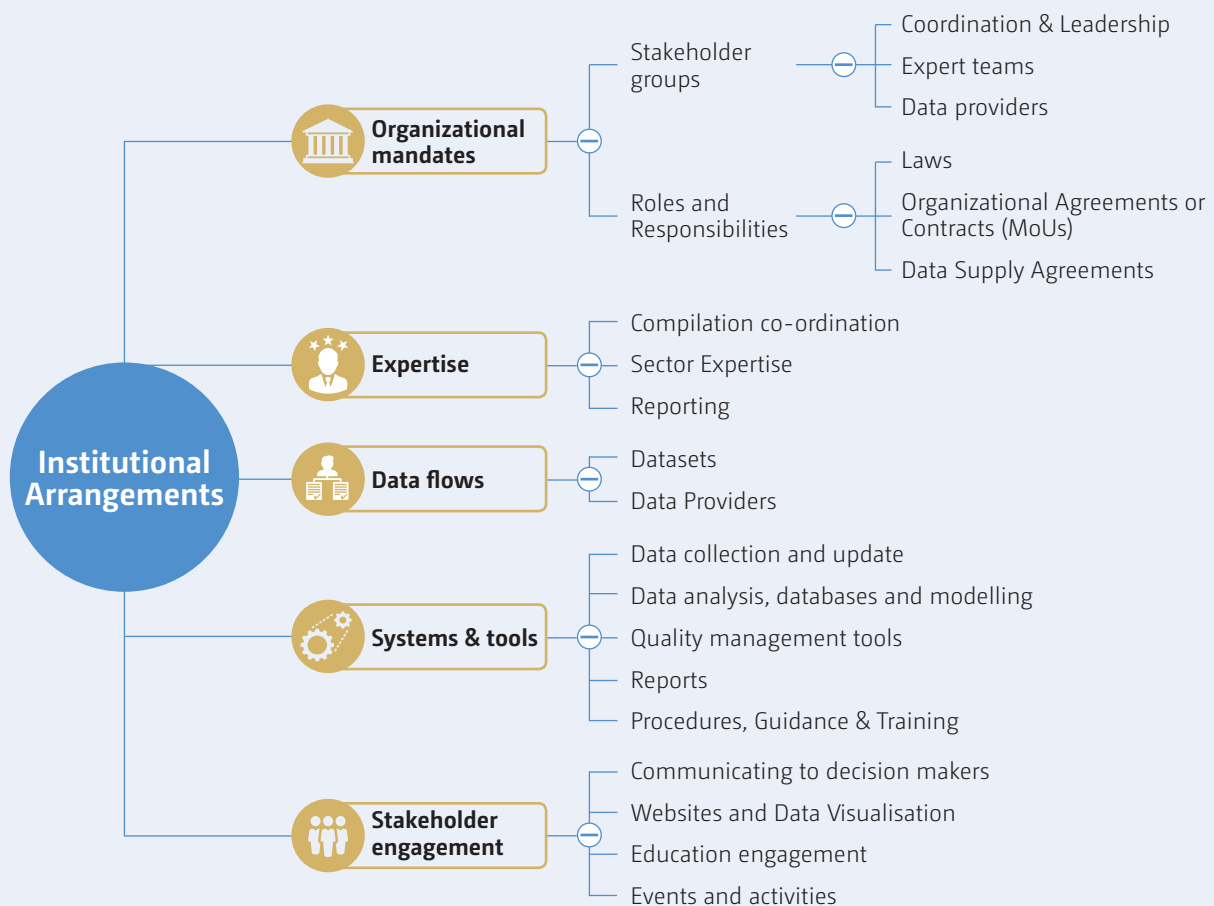
Institutional arrangements will vary among countries depending on the national circumstances, priorities for action and demands for informing stakeholders involved in the implementation of action and reporting. In some countries, a single organizational structure may be responsible for all themes, objectives and outputs, whereas in other countries these responsibilities may be divided among different independent organizations.

Institutional arrangements can be organized around five separate components (see figure 1). These are:

1. Organizational mandates;
2. Expertise;
3. Data flows;
4. Systems and tools;
5. Stakeholder engagement.

These components span a range of organizations, from government ministries and agencies, to academic and research institutions, to private entities and consultants. Further, developing these components is a process of continual, gradual improvement tracked through a well-developed improvement plan.

Figure 1 Key components of institutional arrangements



2.2.1 Organizational mandates

Organizational mandates should include terms of reference designed to guarantee that the human, financial and data resources needed are made available and to clarify the decision-making process. Critically, these organizational mandates facilitate collaboration between experts and expert organizations and are required to, for example, ensure a regular supply of new data (e.g. DSAs), manage data confidentiality, guarantee access to data and engage private sector organizations to provide data or consultancy. Adapting existing arrangements for data collection and provision of expertise (e.g. statistical, economic or environmental data) will help to embed the transparency system in mainstream ongoing data-collection and analysis activities. Mechanisms that establish strong organizational mandates include national climate laws, organizational agreements or contracts, individual contracts and DSAs (see section 3.3 on establishing legal frameworks).



Suitable, clear organizational mandates guarantee the availability of experts, the flow of data, efficient systems and tools, and sufficient stakeholder engagement to deliver useful insights to decision makers and fulfil regular national reporting obligations under the Convention and the Paris Agreement.

2.2.2 Expertise

The team of national experts should be capable of regularly gathering and processing data in order to produce the agreed outputs in a timely manner. The team should have suitable back-up expertise and access to relevant training materials. There should also be effective recruitment, retention and succession procedures in place that motivate the long-term and active involvement of experts in the reporting process. These aspects depend on suitable organizational mandates, as described in section 2.2.1 above. In the early phases of developing institutional arrangements, it may be helpful to contract external support to train and mentor the team of national experts. The team of national experts may also wish to bring in temporary additional support for new developments from time to time.



Having a strong team of national experts ensures that expert resources are available to regularly generate technical outputs that inform decision makers and wider audiences of upcoming challenges, and the country's progress and climate ambition. The team will be responsible for knowledge retention and transfer between experts and organizations, continuous improvement, the smooth succession of national expert roles and training of junior experts.



2.2.3 Data flows

Reliable, regular data flows are essential for well-functioning institutional arrangements and the delivery of a national transparency framework. This includes defining the need for and uses of data, managing the delivery of the required datasets from a range of data providers on a regular basis and continuously improving data and reducing uncertainty. The data sets include national statistics and government data, various forms of measurement data, company and trade association reports, and censuses and surveys that have already been undertaken and reported. They also include new data specifically developed to fill gaps in knowledge where existing data does not exist, including new surveys, measurements and other statistical data collected on specific anthropogenic activities (e.g. forestry, agriculture, use of fluorinated gases), climate risks and vulnerabilities as well as on the costs, benefits and co-benefits of adaptation and mitigation actions, and information on financial, technology and capacity-building support for action. Identifying and engaging with stakeholders who hold, produce and could supply this data will be important. DSAs (as mentioned in section 2.2.1 above) will be important for securing reliable data flows.



Well-functioning data flows ensure that data needed to understand the challenges faced (e.g. to reducing GHG emissions or climate-related risks and vulnerabilities) and to clearly demonstrate progress and climate ambition is available and accessible. These data flows will be critical to generating reliable indicators and reports that inform and engage a wide range of stakeholders in taking action.

2.2.4 Coordination, systems and tools

Coordination, systems and tools are important for the smooth functioning of the transparency system. This encompasses managing the collection, analysis, QA/QC, summarizing and archiving of data. Institutional arrangements need to provide for the development and maintenance of workplans, engagement tools, databases, data analysis, indicators and reports.



Effective coordination, systems and tools ensure that the team of national experts are able to access the data and manage the data flow, perform QA/QC and produce timely outputs of a sufficient quality that improves over time. They will also facilitate the engagement of a wide range of stakeholders who provide data and make use of the outputs.

2.2.5 Stakeholder engagement

Collecting data and making use of the outputs requires stakeholder engagement, including the public, local governments and communities, businesses and other decision makers. The greater the engagement the better (and more useful) the transparency system will be for evidence-based decision-making and the production of reports. Stakeholder engagement involves seeking out key individuals and organizations and offering benefits in exchange for their involvement (e.g. providing data, insights and resources) with the transparency system. Stakeholders engaged in national policy-making and business decision-making will provide an important link to the wider impacts of climate action and the integration of climate action with national social, environmental, economic and sustainability goals.



Strong stakeholder engagement ensures that the transparency system reaches a broad range of stakeholders, including those from national government, local government, the private sector, academia, NGOs, the media and the public, so that data can be gathered from the most reliable and relevant sources and the outputs can inform their decision-making processes. Engagement should include stakeholders involved in the implementation of action, as well as stakeholders who provide data and advice on understanding the data.



Chapter 3

Setting up institutional arrangements

Institutional arrangements for transparency should build on existing national arrangements, where feasible, or be restructured to promote effectiveness. They should facilitate important data flows and the availability of expertise to prepare reports and inform stakeholders. They should also include a wide range of organizations. Understanding and communicating the objectives of the institutional arrangements and clearly presenting the related organizational structures is important to their successful implementation.



Institutional arrangements will be unique to each country. There is no formula for integrating relevant organizations other than to focus on the data flows and the decision makers that will implement action. When transitioning to the ETF under the Paris Agreement, many countries will need to revisit their existing institutional arrangements and establish a way for diverse organizations to work together in the longer term. Institutional arrangements that support the implementation of the ETF are likely to involve new cross-sectoral teams (across government and between public agencies and the private sector) and data flows. Countries will also need to engage and inform new stakeholders, and require new or modified laws, directives and terms of reference. Irrespective of the frequency of reporting, in order to inform decision makers and influence decisions, regular engagement activities and consistent and concise updates to the evidence base will be needed (e.g. sub-annually).

It is also important to note that while the guidelines for the preparation of NCs and BURs and the MPGs for the ETF distinguish between mitigation and adaptation, the underlying transparency systems for adaptation and mitigation could be very similar in their structure, management and operation. In addition, the same sectoral stakeholders (e.g. in the agriculture, transport, energy sectors) often have mandates to include both adaptation and mitigation actions in their sectoral strategies. Hence when considering the establishment or refinement of institutional arrangements, many of the same individuals and organizations will be involved across themes. Box 3 provides an illustration of the need for cross-sector, cross-government and private sector collaboration when developing systems to drive climate action.

Box 3 Linking mitigation and adaptation action

Climate action is often sector based. Its impact is often relevant for a variety of targets and objectives. This can include goals related to a national development strategy, an SDG, wider benefits for health, economy, biodiversity, as well as climate change mitigation and/or adaptation. Many actions will have benefits for both mitigation and adaptation and will engage common stakeholders (e.g. a coastline mangrove restoration project to improve sea defences that also sequesters carbon). Similar data-collection and reporting tools can track sectoral climate actions that relate to both mitigation and adaptation.

A central registry of actions helps to standardize data-collection formats and identify where cross-cutting benefits are not currently exploited or monitored. This centralized approach can help connect institutions involved with data collection for mitigation and adaptation and flag common data sources and data-collection processes, while identifying potential data gaps to be resolved. This process of maintaining a common registry of actions also streamlines the reporting process and reduces the burden of reporting.

The process of linking mitigation and adaptation action overall streamlines the data-management work required of an MRV coordinator and provides an accessible evidence base for more effective management of information on mitigation and adaptation indicators.

A planning phase should define the overarching thematic scope, objectives and outputs. Once these have been determined, the appropriate institutional arrangements should be set up and implemented. Sections 3.1–3.5 below outline the process of setting appropriate institutional arrangements.



3.1 Defining transparency objectives and outputs

When designing institutional arrangements, it is important to articulate the overarching climate goals and targets and the transparency outputs needed to track them. This helps to identify and prioritize the relevant data, expertise and organizations. It also helps institutions involved understand how transparency activities interact with their own mandates and other national development priorities.

Climate goals and targets should inform the scope and detail of the needs for transparency of action. Such objectives should drive the development and improvement of institutional arrangements and the underlying expertise, data flows, coordination, systems and tools, and stakeholder engagement needed to track progress. For example, an objective of improving resilience in the energy sector would drive a demand for better data on the risks and vulnerabilities facing the energy sector owing to climate change and coordination with the organizations that could provide such information. Based on this data, adaptation goals and targets for ‘improved resilience’ could be developed and a comprehensive set of actions planned, implemented and monitored. Table 2 presents an illustrative example of structure that captures and shares information on the targets and goals that define the scope of the transparency system. This type of a summarized tabular format could complement more detailed descriptions of transparency objectives to illustrate the mandates for the system when presenting information on institutional arrangements.



Table 2 An illustrative example of structure that captures and shares information on the targets and goals that define the transparency system

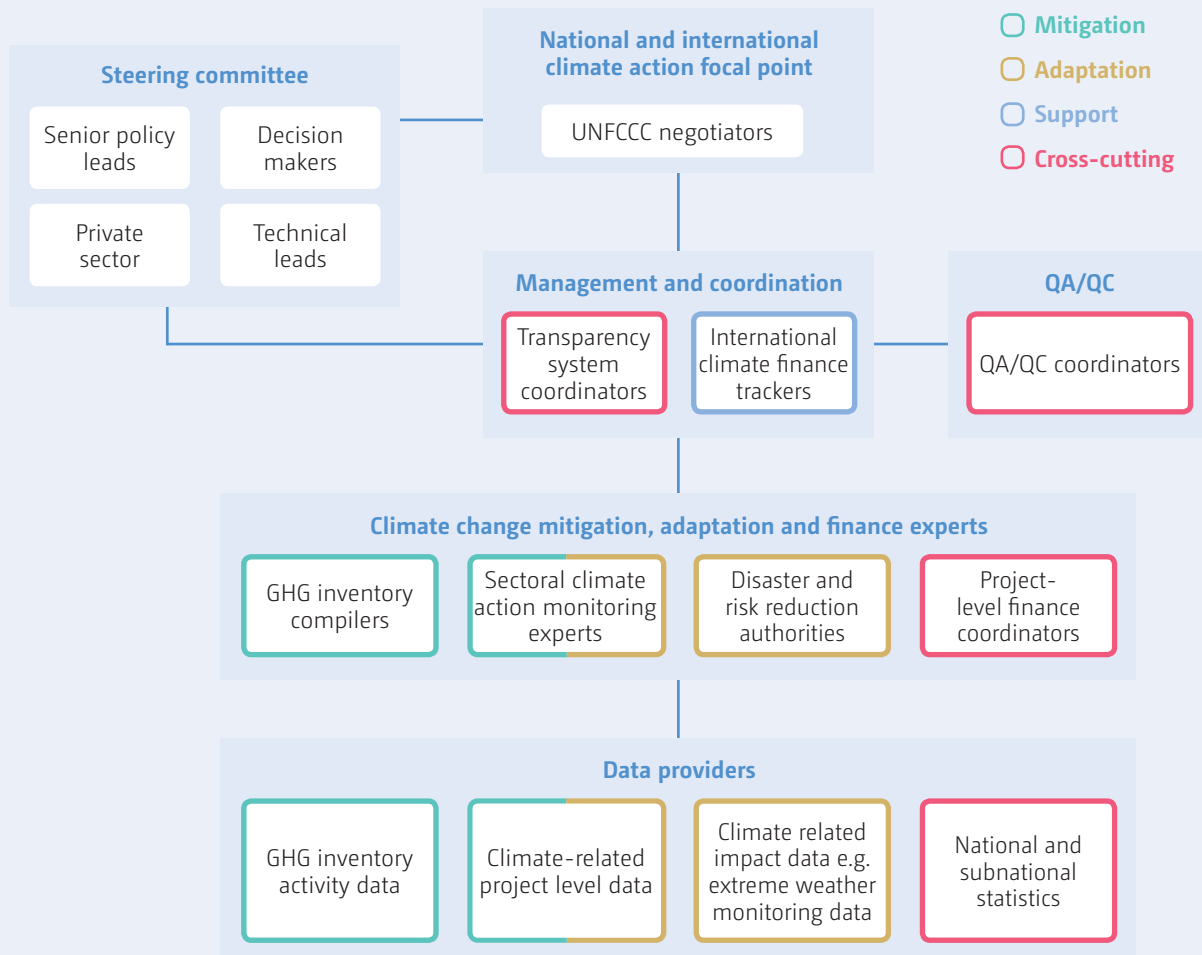
Theme ¹	Sectors and categories ²	Target/goal	Climate response activities ³	Geographical resolution ⁴	Temporal resolution ⁵	Transparency output format ⁶ and frequency ⁷	Information required by transparency system ⁸
Adaptation	Energy	Reduce the energy system vulnerability index from X in 2010 to Y by 2030	Improved resilience in the energy sector	Nationwide	2020–2030	National Energy Council (annual update) BTR (biennial) NC (every four years)	Vulnerabilities and loss and damage in the energy infrastructure Benefits of resilient energy
Mitigation	Agriculture	Reduce annual agriculture emissions by X per cent by 2030 compared to 2010	Climate friendly agricultural practices	Targeted farms	2020–2040	National agricultural bulletins (annual update) BUR/BTR (biennial) NC (every four years)	GHG trends for current vs. climate-friendly farming practices
Support	Cross-cutting	Implement \$X of support in adaptation and mitigation action by 2030	Improved access to international green finance	Nationwide	2020–2050	Treasury reports and accounts (annual update) BUR/BTR (biennial) NC (every four years)	Available finance and actions that could benefit or have benefited from it

¹ Identify the themes included. ² Identify relevant sectors (e.g. energy, transport, agriculture, water, waste, other sectors). ³ List the tracking activities that the national transparency system supports. ⁴ The geographical area covered by the scope of the transparency system objective. ⁵ The temporal resolution of the transparency system objective. ⁶ Highlight any specific reporting formats (e.g. table structures, schemas, variables needed for specific reporting). ⁷ How frequently is the data updated? ⁸ Short summary of the information required by transparency system in order to support the action implementation.

3.2 Structuring institutional arrangements

Structuring institutional arrangements helps to define coherent roles and responsibilities among the involved organizations. Describing the structure of the institutional arrangements in an organization chart offers a visual summary of the organizational linkages. Figure 2 offers a generic structure that can be adapted to specific national circumstances. The structure reflects the cross-cutting nature of managing the gathering, analysis, compilation, reporting and use of data across the different transparency themes. There are common roles and responsibilities, practices and procedures. Clarifying the organizational structure and defining the roles and responsibilities in this way can help formalize and communicate the functional position of organizations within the transparency system. An informative diagram of organizational structure could also include organization names and link to a more detailed table highlighting specific roles and responsibilities.

Figure 2 Model structure of institutional arrangements with optional components, coded by thematic scope



Note: The structure should be designed in a manner that capitalizes on the opportunities for synergized approaches in data collection for reporting under the different international instruments, such as the SDG monitoring framework and/or monitoring under the Sendai Framework for Disaster Risk Reduction 2015–2030 (see section 3.3.2 for more information).

Figure 2 is illustrative and should be adapted as part of a stakeholder engagement and consultation process. Box 4 provides potential questions for a stakeholder engagement process, while case study 1 offers an example from Montenegro of an MRV system and its organizational structure. Some common roles and responsibilities of key stakeholders are outlined thereafter.

Box 4 Key questions for the stakeholder consultation process

When developing the organizational structure of institutional arrangements, key questions during the stakeholder consultation process should include:

Organizational mandates

- Which organization should be the main focal point for collating all information on climate impacts and action? This organization will bring together information from a range of ministries and agencies, the private sector, academia and subnational governments.
- What is the scope of the planned transparency system? What themes (mitigation, adaptation, support) are included? Which organizations already coordinate and provide expertise on data collection and reporting on these themes?
- What national strategic ministerial-level steering committees exist that would benefit from input from the transparency system to support decision-making and mainstreaming of climate action? Do these committees have climate-related working groups that should participate in the transparency system?
- How can the institutional arrangements be developed so that departments and ministries responsible for national development activities prioritize and mainstream data collection and monitoring of climate action and impacts for their sectors? How can institutional arrangements be organized so that they are able to provide this information for collation into a climate action focused narrative by the lead environmental/climate monitoring ministry and/or its responsible agency? How can institutional arrangements ensure that the individual and institutional capacity/memory built is retained and enhanced over time?
- What existing systems, structures and organizations can be built upon (e.g. national statistical or environment agency activities)?
- How can these organizational structures support monitoring and reporting on a broader agenda beyond climate change that includes the SDGs and national strategies? Which mechanisms would benefit from shared data flows and coordination?
- Are the same themes being dealt with separately by different organizational groups? If so, how is data collection and analysis being coordinated between these groups? This is particularly important when considering information on actions that have both mitigation and adaptation impacts.

Expertise

- Who are the experts needed for the transparency system and which agencies, government departments, academic institutions and private enterprises do they come from?
- How do experts in non-government organizations contribute to the transparency system? Is regular interaction facilitated and are there any barriers to engagement?
- How can government agencies and departments cultivate, and retain in-house experts and also manage/direct/advise consultants actively? Are there existing knowledge management and training resources for archiving information and documenting processes to ensure work builds from existing efforts and also facilitates work of future staff?
- What role do national statistics offices, environment and sustainability departments and environment agencies play in the provision, analysis and QA/QC of data? Is there any overlap between departments in data-collection activities?

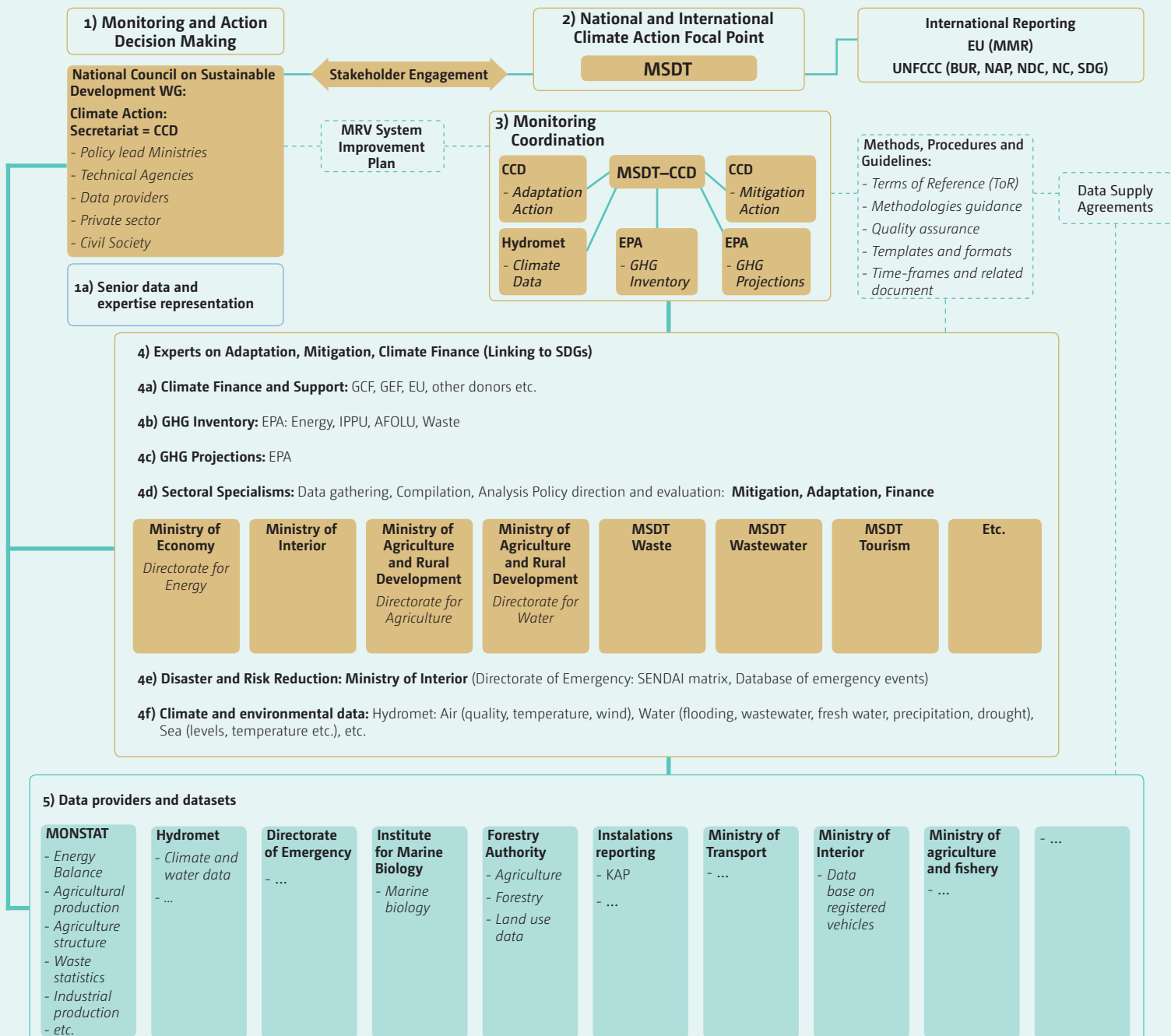
Data supply

- Which key stakeholders are necessary and/or proactive in collecting information on climate change adaptation and mitigation action and could be potential data suppliers, and how can they be integrated into the institutional arrangements of the transparency system?
- What legislative and policy instruments, as well as tools and modalities need to be developed to facilitate data flows between government agencies and from the private sector? Which government agencies are best suited to lead this process?

Case study 1 Montenegro's measurement, reporting and verification system

A good MRV system requires a strong organizational structure, based on clearly defined institutional arrangements. Montenegro worked with consultants to establish an MRV conceptual framework, using outside experts who had experience in establishing effective institutional arrangements. The framework provides a structure and recommendations for the key components of the MRV system, including proposed key functions (see figure CS-1). The MRV system will support Montenegro's climate change mitigation and adaptation efforts. Its implementation will also be crucial to achieving the ambitious national targets outlined in the intended NDC Montenegro submitted under the Paris Agreement in 2015. The organization chart was included in Montenegro's second BUR (2019).

Figure CS-1 Organization chart outlining the proposed key functions of Montenegro's MRV system organizational structure



3.2.1 National focal point

The institutional arrangements should provide for a national focal point which serves as a key link to the intergovernmental process and the international community. The national focal point is an international point of contact on climate reporting. This role is usually taken on by a government ministry with the mandate to manage the country's response to climate change, including climate-related reporting. The focal point coordinates the activities needed to ensure that outputs are prepared and are of sufficient quality to meet the country's commitments. As many government bodies operate in a non-technical manner, with staff frequently moving between departments, technical functions are sometimes delegated by a government ministry, via mandates or terms of reference, to a specialized climate change, environmental or statistical agency with the technical expertise to represent the country and prepare national reports.

3.2.2 National steering committee

A national climate change committee (or a similar official gathering of representatives of national ministries, the private sector and local governments) can provide a forum for collaboration around climate action, including monitoring challenges and actions. There may already be a committee under which a broad range of stakeholders gather to collaborate on nationally important cross-sectoral strategies, which could be built upon. The focus of the climate change committee will need to be on low GHG emissions development and climate resilience, and it will need to be informed by the transparency system. The committee should consist of senior representatives of organizations in a position to implement climate action (e.g. sectoral ministries such as ministries of energy, transport, forestry, agriculture and waste) and monitor that action (e.g. through national statistics, climate observations and hydrology, GHG trends and other research). The committee will also need support from a strong secretariat, provided by the management or coordination team (see section 3.2.3 below), to set appropriate agendas and ensure that the transparency system is able to inform its decisions.

3.2.3 Management and coordination: technical coordinating bodies and ministries

It is important that there be a designated organization to coordinate transparency work. The responsibilities of the coordination body should include tracking improvements to the transparency system, facilitating legal arrangements for data supply, day-to-day maintenance of data management platforms, and ensuring that cross-cutting links across transparency themes are recognized and developed. The coordination body should also be responsible for monitoring top-down finance and support, that is, the international and national sources of climate finance that fund wide-ranging improvements to the transparency system and address institutional needs. In this way, there is a centralized flow of information for the often-disparate funding sources that can offer a coherent view on the support received and still needed.



There are several types of institutions that could serve as the technical coordinating body for transparency work, such as:

- **A government ministry.** This could be the government ministry that also serves as the national focal point for the Convention, in which case it should have the appropriate coordination and technical capacity;
- **A national institution or agency.** Management and coordination can be delegated to a competent institution (e.g. in the statistical, meteorological or environmental field). Such an institution would already be focused on providing technical support and analysis to government officials for decision-making and reporting on environmental issues. It may also be able to offer expertise on certain sectors and access to some of the data sets needed for the compilation and could outsource data collection and compilation for other themes and sub-themes or sectors. A new institution could also be set up; however, this would require the development of new terms of reference and the recruitment of experts;
- **A private company, a university or an NGO.** The management and coordination could be contractually delegated to an organization outside the government, such as a university, research institute, consultancy firm or private company. This organization should be selected on the basis of its technical competency and capacity to coordinate the activities and expertise for the compilation and reporting of the necessary data and information. Contracts with such organizations typically set out well-defined deliverables and objectives and engage the organization over a suitable period of time (e.g. four to six years) to promote the sustained development and maintenance of the transparency system. A contract should also include clear guidelines on decision-making responsibilities for the contracted organization and the contracting government agency. Provisions should be in place for the full transfer of data, documents, calculation and reporting tools and knowledge of the transparency system from the contracted organization to the national focal point or new contracting organization at the end of the contract period. Further, the contracted organization should consult the national focal point and other relevant offices/staff on a regular basis to ensure that its work is responsive to the defined needs and priorities.

Whether the transparency system is coordinated within the national government or by an external organization, there should be provisions in place for the transfer of data, documents, calculation and reporting tools and knowledge of the thematic information in cases when a new manager or coordinator takes charge, and such provisions should ensure adequate training investment. These provisions help ensure national retention of institutional knowledge, the continuity of the transparency system and the fulfilment of quality standards in the future. Peru's approach to strengthening transparency activities by setting up a technical working group offers a good example. The working group facilitates high-level engagement with the transparency system and a coordinated approach for NDC implementation and tracking of progress (see case study 2).

Case study 2 Inter-sectoral coordination to ensure ownership of nationally determined contributions and facilitate high-level engagement with the transparency system in Peru

In 2017, Peru set up a technical working group to coordinate the national plan to implement the NDC. This is a collaborative approach to engaging experts and offers an example of structuring institutional arrangements. The working group facilitates a multi-stakeholder process of guiding the country's NDC Implementation Road Map. Experts from 13 ministries and the National Centre for Strategic Planning make up the NDC Multi-Sectoral Working Group.

The NDC Multi-Sectoral Working Group prepares the sectoral road maps for NDC implementation. The Working Group also prepares sector-based guidance on assessing the impacts of the NDC and reviewing progress against objectives biannually. The road maps describe mitigation and adaptation measures that have been identified as contributing to achieving the NDC targets and offer background information on transparency and details on practical implementation. The Working Group also enhances and facilitates stakeholder engagement activities. For example, a feedback session called "Let's Talk about NDC", coordinated by the Working Group, encouraged stakeholders at all levels to comment on the road maps. Through this intersectoral coordination group, Peru is actively strengthening dialogue among actors in the transparency system.



©<http://www.minam.gob.pe/cam-bioclimatico/dialoguemos/>

An institutional focal point was appointed to follow up on the activities of the NDC Multi-Sectoral Working Group. Another expert, an in-house 'technical liaison', was also hired to provide climate change expertise to both the Working Group and the Technical Secretariat. The Secretariat is responsible for coordinating the NDC Multi-Sectoral Working Group, providing specialized sectoral guidance on the road maps, particularly regarding coordinating between entities for joint measures (e.g. between the Ministry of Energy and Mines and the Ministry of Transport and Communications for measures related to electric transport). This coordinating body is particularly important for facilitating the organizational arrangements within the transparency system. The Secretariat plays a key role in the transparency system by facilitating the work of the NDC Multi-Sectoral Working Group and linking stakeholder engagement with cross-sectoral climate action.

The NDC Multi-Sectoral Working Group has successfully gathered input on NDC implementation from experts from a range of ministries and offers examples of good practices for intersectoral cooperation. The Working Group has established new discussion forums, contributing to a coordinated approach to NDC implementation.

Source: https://www.transparency-partnership.net/system/files/migrated_document_files/190318_gpd_parisabkommen_peru_rz.pdf



3.2.4 National experts

National experts are responsible for collecting, processing and arranging the data and information for reporting of transparency themes. These experts often specialize in one or more of the transparency themes or sub-themes (e.g. GHG inventory, sectoral vulnerability assessment) (see table 1). In general, national experts should:

- Have good relationships with data providers;
- Be comfortable with data analysis and calculations, and associated science and methods, including IPCC guidelines;
- Have a good understanding of the benefits and limitations of the data sets.

Some typical thematic expert profiles and useful guideline attributes are outlined in box 5 below.

Box 5 Common thematic expert profiles and attributes for transparency work



Mitigation: national greenhouse gas inventory experts

- Experts should have an understanding of the energy, transport, waste, industry, agriculture and forestry sectors. More specific expertise may be required for sectors that are particularly complex, for example, road, shipping or aviation for the transport sector, fluorinated gases for some industrial processes, livestock and land use for the agriculture sector, and landfills and waste water treatment for the waste sector;
- Experts should ideally have knowledge in the development of historical (e.g. from 1990 or 2005) and projected (e.g. to 2040 or 2050) time-series of estimated emissions and removals;
- Experts should be good with numerical data and data processing and analysis tools and models;
- Experts should have a thorough understanding of the IPCC guidelines⁸ and of the international reporting and review processes under the Convention and the Paris Agreement;⁹
- Experts undertaking projections should have a good understanding of national policy and economic development and any sectoral economic, production or impact models;
- Experts should be able to clearly articulate the gaps and resource constraints facing the data-collection process and have the capacity to prioritize and address these gaps.

⁸ The various IPCC guidelines are available at <https://www.ipcc-nggip.iges.or.jp/public/index.html>.

⁹ See <https://unfccc.int/process-and-meetings/transparency-and-reporting/the-big-picture/what-is-transparency-and-reporting>.



Adaptation: climate impact monitoring and analysis experts

The national expert team may include many individuals from different institutions. Collectively, they need to be able to perform analyses of climate trends and their impacts, translating these to vulnerability and climate change impact assessments. More specifically:

- Experts must have a comprehensive understanding of the sectoral or overall risks, vulnerabilities and impacts of a changing climate;
- Cross-cutting sectoral experts should have knowledge in disaster response, hydro/meteorology and thematic areas that are impacted by climate change such as agriculture, water, urban planning, health, transport and energy infrastructure;
- Sectoral experts should have a thorough understanding of the social and economic development issues of their sector (e.g. a thorough understanding of the impacts of drought on agricultural yields);
- Hydro/meteorologists and climate scientists should have broad knowledge of trends in climate and extreme weather events and their impacts on the physical environment;
- Disaster response teams who focus on preventative measures need an understanding of the causes of natural disasters and how to avoid their impacts;
- Experts should be well connected with policy officers and stakeholders who have a solid understanding of planned, ongoing and completed climate change adaptation projects in order to inform priorities;
- Experts should have a thorough understanding of the IPCC reports and guidelines on adaptation planning and reporting and of the reporting guidelines on adaptation for NCs and adaptation communications under the Paris Agreement.



Mitigation and adaptation: climate action planning, tracking and policy experts

- Experts should have an awareness of national and sectoral strategies, mitigation and adaptation projects, their status and their investment/support needed/provided;
- Experts should understand the options and impacts (including benefits) of actions, and the indicators to track progress of implementation;
- Strong links with government departments, the private sector, NGOs and policy think tanks that can provide input on the feasibility of implementing action and input on tracking the progress of implementation;
- Well connected to decision-making on national and subnational strategies and policy implementation;
- Good understanding of the financial, technological and capacity-building support provided for climate actions (e.g. which projects have received support or funding, how much has been provided, how much is still needed and from who) from a bottom-up (by project) and top-down (by fund) perspective.



3.2.5 Data providers

The transparency system relies on a consistent and continuous flow of data that supports the calculations and analyses required to inform decision-making and reporting on climate action and support. The data comes from a variety of sources, including national government departments and statistical offices, regional and local governments, private sector organizations, academia and NGOs. The data have usually been collected for other purposes by a team who is familiar with the data and has the technical skills and knowledge to improve and enhance the data collection. The team will be aware of the advantages and limitations of certain data sets and should be able to identify key improvements needed in the data-collection process when they understand the intended use of the data in the transparency system. The individual profile of a data provider is varied and could include statistical officers, industrial facility operators or environmental officers on local councils. Regardless of their position, data providers should be aware of how the data will be used, how they can most effectively contribute to the provision of good data and how they can improve their own data collection and management systems.

3.3 Establishing legal frameworks

The establishment of new data flow, compilation and reporting activities creates new requirements to be fulfilled by a larger and well-supported team of national experts. This almost always requires additional human and financial resources. The institutional arrangements require legally binding frameworks and mandates to provide for adequate resources. These frameworks formalize the new roles, responsibilities, resources and relationships needed to deliver the transparency system outputs. Some legal frameworks may already exist, for example, frameworks that make environment agencies responsible for national environmental data reporting commitments or statistical agencies and government departments responsible for collecting data. However, these frameworks must be updated and complemented in order to ensure sufficient data and resources are available to establish a fully functioning transparency system and that can deliver its mandated outputs. Such changes to the legal framework can include, but are not limited to:

- New laws and by-laws;
- The expansion of existing organizational mandates (e.g. on environmental data gathering and reporting);
- Well-structured service and framework contracts and/or MOUs;
- New DSAs.

More details on the possible legal and institutional frameworks are outlined in sections 3.3.1–3.3.4 below.

3.3.1 Climate laws

An overarching climate change law can create a legally binding mandate or legislative power to the institutional arrangements for transparency. Without a legal mandate for the organizational frameworks, it can be challenging to ensure that the individuals who carry out the defined regular activities within a transparency framework receive adequate resources. By developing a formal directive, a climate change law can legitimize resource requests and facilitate reforms and the formulation of new responsibilities. Similarly, when faced with institutional barriers over data ownership and a lack of cooperation among coordinators, experts and data providers, a climate change law can provide organizations or individuals with the authority required to incentivize data flows. The adoption of climate change laws helps to formalize the necessary collaboration and supply of data and expertise across government entities, and between the government and the private sector. A climate change law could, for example, serve as the legal foundation to establish institutions, organizational structuring and financing to move towards a low-carbon and climate-resilient economy. Legally binding climate change targets could also be incorporated along with the requirements for tracking progress and support. Several elements need to be considered when designing a climate change law:¹⁰

- **Focus.** The law could be focused on climate change alone or could place climate change in the context of wider sustainable development objectives;
- **Scope.** The mandate for climate policy could be driven by a domestic outlook on climate change targets and objectives or could be set within an international context, with explicit consideration for interlinkages of national efforts with international targets and approaches;
- **Design.** A decision must be made regarding how the law will be implemented and any targets achieved, whether through government planning and intervention or through free-market mechanisms. It is possible that both approaches will play a role;
- **Devolution.** The Paris Agreement recognizes that subnational actors play an important role in climate action. However, the level of centralization will vary from country to country. The level of devolution of responsibility should be determined.

Taking existing laws as examples, there are several key components to consider when designing a climate change law:

- **Statutory long- and short-term targets.** Long-term mitigation targets, informed by a well-developed evidence base and consistent with the NDC, provide clear strategic guidance for policymakers. Short-term mitigation targets can provide a cost-effective and progressive path towards the broader long-term targets;
- **A plan for adaptation action.** A short-term, continual approach to adaptation planning can provide a functional framework for addressing the risks and vulnerabilities with the aim of averting, minimizing and addressing loss and damage associated with climate change impacts;

¹⁰ Adapted from Fankhauser et al, April 2018, “10 years of the UK Climate Change Act”, available at http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2018/03/10-Years-of-the-UK-Climate-Change-Act_Fankhauser-et-al.pdf.



- **Duties and responsibilities.** Key roles should be clearly defined so that the transparency framework supports the implementation of action plans, including, where necessary, the formalization of an independent steering committee;
- **Monitoring and reporting requirements.** Incorporating national reporting requirements alongside international requirements can be helpful in keeping climate policy relevant and promoting accountability. Supporting an independent steering committee's role in reviewing progress against targets can also keep political momentum on track.

If relevant laws are already in place, especially if there has been significant reprioritization since the development of a climate change law, it may be necessary to periodically assess those laws to ensure they are still fit for purpose. It is important that any climate change law be focused on specific national circumstances. However, it can be useful to draw on the experience of other countries' well-developed climate change laws that have demonstrated a national commitment to the reform of institutional arrangements. One such example is the Climate Change Act 2008 of the United Kingdom of Great Britain and Northern Ireland (see case study 3).



Case study 3 Climate Change Act 2008 of the United Kingdom

The United Kingdom passed the Climate Change Act 2008, a comprehensive framework law that committed the country to statutory mitigation targets, developed a clear but flexible path to achieving these targets and established an independent body to review policy delivery and progress against long- and short-term targets. Key elements of the Climate Change Act 2008 include:

- A long-term mitigation target that mandates an economy-wide decrease in GHG emissions of 80 per cent compared with the 1990 level by 2050;
- Carbon budgets that dictate economy-wide caps on GHG emissions at five-year intervals, ultimately laying a pathway for the longer-term 2050 emission target;
- A continuous five-year planning cycle for adaptation action that starts with a climate change risk assessment, followed by a national adaptation programme;
- The establishment of the Committee on Climate Change, an independent advisory body whose role is to review and track mitigation and adaptation policy to ensure consistency with the long-term objective;
- Regularly mandated national reporting on progress against targets which includes an annual progress report on the carbon budgets produced by the Committee on Climate Change, and a biennial report on adaptation progress. The Government is legally obliged to respond to these progress reports.

The Climate Change Act 2008 has had success in the following ways:

- The political debate has improved. The mandated review process involving the Committee on Climate Change established a routine of assessing targets and discussing progress on the basis of scientific evidence;
- The climate consensus has held. As political landscapes change and commitment to particular policies and measures fluctuates, the Act has ensured that the consensus on the need for climate action has remained steady;
- Transformation of the power sector has occurred. The Act has been a major driver of the decarbonization of the energy sector since 2008 as the United Kingdom seeks to meet the short-term carbon budgets;
- The international reputation of the United Kingdom has strengthened. The Act, now emulated by various countries, was one of the first framework laws to address climate change. This has led the United Kingdom to play an important leadership role in negotiating the Paris Agreement.

Source: <http://www.legislation.gov.uk/ukpga/2008/27/contents>.



3.3.2 Existing organizational mandates

When considering the development of organizational mandates for the transparency system, existing mandates can sometimes provide outlines for successful national pathways for cooperation. Existing mandates that support established data flows can help to engage key stakeholders and may have already established relevant relationships and coordination systems. Adapting and expanding existing arrangements can be a way to use resources efficiently and can help to overcome institutional barriers to change and data ownership. Examples of existing organizational mandates are presented below:

- Reporting on the Montreal Protocol on Substances that Deplete the Ozone Layer, where a team is already compiling data on chlorofluorocarbon imports, exports and use in different equipment, which could be extended to include fluorinated gases where they replace chlorofluorocarbons in the same equipment;
- The Convention on Long-Range Transboundary Air Pollution, which requires reporting of a time series of air pollutant emissions. The collection of activity data is similar to that needed for most GHG emissions sources;
- Industrial reporting through a pollutant release and transfer register, by which industrial facilities and some livestock farming activities report their releases, including of GHGs;
- The Sendai Framework for Disaster Risk Reduction 2015–2030, which encourages national reporting, on a voluntary basis; related arrangements could be used for identifying, minimizing and tracking disasters, including climate-related natural disasters;
- Voluntary national reviews under the 2030 Agenda for Sustainable Development and the existing data collection process and database, which could be used to track a range of indicators, including those on SDG 13 (climate action).

The mandates that support these data flows can provide country-specific templates for reporting mitigation, adaptation and support data on the transparency themes. One such example is the Greenhouse Gas Reporting Program of the United States of America (see case study 4).

Case study 4 Greenhouse Gas Reporting Program of the United States

The development of the Greenhouse Gas Reporting Program of the United States is an example of how existing authorities can be leveraged to enact mandatory GHG reporting. The Clean Air Act, section 114, gave the United States Environmental Protection Agency the authority to collect data on air emissions. Under the 2008 Consolidated Appropriations Act, the United States Congress directed the Environmental Protection Agency use its existing authority under the Clean Air Act to develop a rule on mandatory reporting of GHG emissions. In 2009, the Environmental Protection Agency finalized the Mandatory Reporting of Greenhouse Gases Rule, which mandates facility-level reporting on CO₂, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and other fluorinated gases. The Greenhouse Gas Reporting Program (codified at 40 CFR Part 98) requires reporting of GHG data and other relevant information from large GHG emission sources, fuel and industrial gas suppliers, and CO₂ injection sites in the United States. Over 8,000 facilities and suppliers report their data annually.

Source: <https://www.epa.gov/ghgreporting>

3.3.3 Framework contracts and memorandums of understanding

Framework contracts and MOUs provide a contractual or other written agreement between two or more parties to work together to serve the purpose of the institutional arrangements. Such agreements ensure that all parties cooperate, provide any agreed financial or human resources and share information based on the established conditions. They can be useful for establishing a regular, efficient flow of data and data analysis or for setting out an agreed approach for cooperation on research, development and stakeholder engagement. These agreements can be drawn up between different organizations to ensure effective collaboration. When developing a framework contract or MOU the following aspects could be considered:

- **Objective.** The objective of the agreement from the perspective of all engaged parties;
- **Scope of cooperation.** The scope of the engagement should be defined (e.g. which outcomes are being targeted; data and information that will be gathered, processed and shared);
- **Forms of cooperation.** The 'how' of the cooperative agreement: the methods of, frequency of and any restrictions on the exchange of data and information or collaborative approaches;
- **Necessary resources.** If it is envisaged that the proposed cooperative approaches will require resources, then the agreement should highlight how the engaged parties are expected to access such resources;
- **Effective date, duration and termination.** The agreement should set out a start date, initial duration, the scope for amendments, if any, and the conditions for termination;



- **Contact points.** Key contacts (organization names or position titles are preferred over individual names for the sake of continuity) should be included. The agreement should also set out the expectations for these key contacts, including any resource commitment and communication and knowledge-sharing.

Case study 5 Memorandum of understanding template of the United States Environmental Protection Agency

The GHG Inventory Toolkit of the United States Environmental Protection Agency provides a template that can be used by two entities working on the GHG inventory to formalize an agreement. An MOU is a formal agreement that sets out arrangements for shared activities, cooperation, and data and information exchange between two or more parties. For example, an MOU could document an arrangement between a ministry developing the national GHG estimates and the main data provider. The MOU template in the GHG Inventory Toolkit facilitates the process of setting up an agreement for parties with limited capacity to do so. The template sets out the correct procedure for setting up an MOU and is therefore a useful tool for ensuring efficient institutional arrangements.

Source: https://ledsgp.org/resource/greenhouse-gas-inventory-system/?loclang=en_gb#ghg-toolkit

3.3.4 Data sharing agreements

A DSA is a specific form of agreement. It is usually a document that defines the data supplied, from whom, to whom, and when for the transparency system. Ideally, a DSA formalizes an arrangement between the national focal point, or designated coordinator, and the data supplier stakeholder, with technical expertise provided by the team of national experts. A DSA can be beneficial for the national focal point, the technical expert using the data and the data provider. A DSA can help secure data provision in the longer term (see case study 6). A DSA can also assist data-supplying organizations by formally acknowledging the value of their data, which could promote the allocation of resources within such organizations to deliver reliable data on time.

There are many potential DSA formats. DSAs can reference existing national laws for data supply or simply be an informal written specification that is easily revisited for data-collection activities. Many developed countries have suitable examples of DSAs that support national GHG inventory systems. The possible content of a DSA includes:

- Background information on the needs and mandate of the transparency system;
- Reference to laws and terms of reference and cooperation between the data supplier and the transparency system representatives;
- Objectives of the agreement, with reference to an annex specifying the details;

- Confidentiality provisions and commitments;
- Procedures that enable the receiving party (the data user, such as the national focal point or designated coordinator) to provide feedback to the data supplier on priorities for future improvement of the data set;
- Signatures of national focal point or designated coordinator representative and data supplier, if appropriate;
- A technical annex containing details of the data to be supplied, including:
 - Unique title of the data set (to avoid confusion with other data sets);
 - Confidentiality flags;
 - Description of the data, including format (electronic format) and scope (time series, detail, nomenclature, categories, geographies);
 - Supplying department or service;
 - Deadlines for the supply of data;
 - Details of QA/QC measures to be applied to the data prior to supply;
 - Uncertainties in the data.

Case study 6 German data-sharing agreements

Germany set up a national GHG inventory system in 2007, with comprehensive institutional arrangements. A key feature of the inventory system is the industry cooperation agreements (a type of DSA) signed between the industry sector associations and individual companies, and the German government.

The majority of data used for GHG emissions reporting (approximately 80 per cent) in Germany is derived from data from the Federal Statistics Office. The relationship between the Federal Statistics Office and the Federal Environment Agency was formalized through DSAs. The industry cooperation agreements ensure sufficient data is received by the Federal Statistics Office. These arrangements also ensure that the Federal Environment Agency, which is in charge of compiling the GHG estimates, receives the required data on time and in appropriate formats. When new data flows are needed, additional source-specific and voluntary DSAs between the relevant institutions and actors are put in place. These DSAs specify how the necessary data will be provided to the Federal Environment Agency.

Impact of the data-sharing agreements

The agreements between the government and the private sector have ensured the regular and efficient flow of data and information, which has resulted in robust and reliable data outputs. They are a good example of effective collaboration that can occur between different bodies. A collaborative system based on DSAs helps to improve trust and encourage open communication among different actors and is flexible in terms of potential modifications and amendments. The direct involvement of industry in the reporting processes also helps to reduce the need for additional capacity at the government level. An improvement in the trust and transparency between the private sector and government sector can be beneficial for other areas.

Source: https://www.transparency-partnership.net/system/files/migrated_document_files/2007ongoingghginventoriesystem_germany_en.pdf.

3.4 Human and financial resources

Sustainable institutional arrangements require sufficient dedicated human and financial resources. Establishing and maintaining new organizational relationships, establishing and adapting data flows, recruiting and retaining expertise, developing and implementing systems and tools, implementing communications and stakeholder engagement approaches, and delivering new outputs all require resources. Those implementing national systems need to assign suitable resources.

Table 3 provides an estimate of the trained human resource needs for the transparency system in the areas of mitigation, adaptation and investment (climate finance and support). It is to be used only as a provisional guide, given that the resource needs will vary depending on national circumstances, including the scale of emissions, economy, etc. The example presented below reflects the complexity and demands on information gathering and reporting. An additional 30 per cent FTE time is added (in the form of additional trainee/junior staff) for backstopping, succession planning and backup support for busy times. This 30 per cent helps to guarantee smooth successions and create enabling environments in which senior experts thrive.

Table 3 Estimate of basic resource needs for climate action related transparency systems for small and medium-sized countries (e.g. 300,000–30 million inhabitants)

Transparency area	Number of people and workload (% of time)	Resource: FTE	Additional 30% FTE for backup and succession
Transparency system administrator	1 at 50%	0.5 FTE	0.2 FTE
Adaptation			
Adaptation MRV coordination	1 at 100%	1 FTE	0.3 FTE
Climate data	3 at 35%	1 FTE	0.3 FTE
Vulnerability, risks, loss and damage	10 at 30%	3 FTE	1 FTE
Adaptation action ¹¹	15 at 20%	3 FTE	1 FTE
Mitigation			
Mitigation MRV coordination	1 at 100%	1 FTE	0.3 FTE
GHG inventory ¹²	5 at 50%	2.5 FTE	1 FTE
Projections	3 at 50%	1.5 FTE	0.3 FTE
Mitigation action	15 at 20%	3 FTE	1 FTE
Investment (climate finance and support)			
Investment and support	1 at 50%	0.5 FTE	0.2 FTE
Total	30–55 stakeholders	17 FTE	6 FTE

11 This task may need to be adaptable and distributed according to the needs for assessing new actions within or on the behalf of line ministries. The time may be distributed over additional or fewer people depending on how the expertise is distributed.

12 Inventory and projections tasks can be combined. However, the full resource allocation will be needed to carry out both inventory and projections tasks. In addition, additional technical experts familiar with projections scenario modelling (particularly for energy, agriculture and forestry systems) will be needed.

The details in table 3 are indicative and provide examples within a framework. A more thorough assessment based on the individual country's circumstances is needed when designing the transparency system.

Countries transitioning from reporting under the existing MRV arrangements to the ETF, there may need to increase resources owing to the increase in the scope and rigor of reporting. For these expanded activities, it is useful to prioritize recruitment so as to make the most of the available finances. Initial efforts should focus on filling the administration and coordination roles; these staff can then build the teams. These teams should comprise experts and organizations that have provided inputs relevant to the themes. A lack of experts in a particular area should be flagged as a gap.

Coordinators should work with lead stakeholders in each of the thematic areas to identify specific outputs and the associated needs. A non-prescriptive, step-by-step guide that outlines a potential plan for developing a transparency system is included in chapter 5.

Where possible, the team should include junior experts, for example one junior expert for every two lead experts, to support lead experts in data gathering and estimating updates at busy times. Junior experts also provide succession, backup and fresh insights into methods, data sources and assumptions.

In addition to their primary roles, lead experts should also act as support experts in reviewing methods, data sources and assumptions for another lead expert. This builds wider collaboration on methods, data sources and assumptions, and contingency so that support experts can easily stand in for lead experts if needed. Expertise does not necessarily stem from a single organization. Experts can come from a range of organizations so long as appropriate terms of reference are established and the distribution of work is coordinated.

Financial resources are needed for a range of activities that support the gathering and use of the transparency system's data and outputs. The following are examples of activities requiring financial resources:

- **Contracting/paying salaries of existing experts;**
- **Hiring new experts.** The expertise outlined above may not be readily available within the existing institutions. Financial resources can support recruitment activities and subsidize salaries or contracts to fill any gaps in the available expertise where external support is required;
- **Training.** When existing experts take on new responsibilities, resources need to be channelled into training (see section 4.5 for more information on structuring capacity-building and support). However, it is worth noting from a resourcing point of view that, where possible, training sessions should be delivered to multiple staff to build a broader knowledge base across the organization. Training ensures that experts have adequate knowledge of methodologies and tools deemed necessary to prepare and report information in line with the reporting guidelines. This could include specific technical training for activities such as GHG inventory compilation, QA/QC or climate change vulnerability and impact assessments. It could also include training on new systems or technologies introduced as part of the transparency system, for example training for coordinators on any new IT systems;



- **Developing IT systems, databases and archives.** The specifications for the systems and tools needed to support the transparency framework are outlined in more detail below (section 3.5). However, from a resource perspective, it is important to consider the financial costs of setting up a new IT system, or of enhancing existing systems. An IT system can vary in cost depending on the platform used and the supplier, so getting a quote for the development of such a system will be important when drafting the budget for the overall institutional arrangements. The system should be flexible and accommodate methodological improvements and updates, as necessary. If a more adaptable approach is cost prohibitive, it may be better to start simple and build over time. It is also worth considering the human resources and time spent as national experts learn to use any new IT system. It is important to factor in time for the adoption of the new system, in order to ensure that stakeholders engage;
- **Conducting stakeholder engagement activities.** As the transparency framework develops, it is important to reach out to stakeholders to get high-level political support and support from the public to keep the momentum going. Stakeholder workshops and public engagement websites and infographics that provide updates on progress against climate change mitigation, adaptation and support targets are all good engagement mechanisms and require investment;
- **Acquiring data.** Different institutions approach data supply and ownership differently. In some cases, institutions (public and private) charge fees in return for their data. Such arrangements should be agreed upon when establishing an MOU or DSA (see section 3.3). For instance, where there are large data gaps, resources may be needed to forge new paths for data acquisition, and to establish new monitoring mechanisms. Where there is a financial cost associated with data supply, this should be included in the overall budget.

3.5 Systems and tools

Efficient transparency systems require a suite of systems and tools. Sections 3.5.1–3.5.3 below provide examples of systems and tools for developing and maintaining sustainable transparency systems that will improve their quality and timeliness and their ability to provide useful outputs.

3.5.1 Workplans

A clear workplan with defined milestones and deliverables is an effective tool for compiling and updating information on mitigation, adaptation and support on a regular basis. The workplan should clarify the step-by-step process to generating all of the outputs required from the transparency system, for example for NCs, BURs and BTRs or any nationally determined reporting. While an overall workplan for the transparency system is useful for oversight, it may be useful for MRV coordinators to develop their own more detailed workplans for separate transparency themes and sub-themes; for example, workplans that are specific to compiling/updating national GHG inventories, preparing information on mitigation action and progress against NDC targets, and preparing information on adaptation and progress against targets. In this case the compilation of information on support and investment should be integrated into all workplans, and there will be overlap or interlinkage between workplans

as the preparation of the information on mitigation action will rely on the preparation of national GHG inventories. The workplan should be cyclical to reflect the nature of the reporting cycles, and so that lessons learned from one cycle can be incorporated into the next.

3.5.2 Data management system and data structuring

The data associated with the transparency themes and sub-themes include numerous data sets, documents, references, lists of actions, climate finance flows and associated administrative information, such as key stakeholder information. An effective data-management system includes well-established data structures and suitable nomenclatures and QA/QC procedures, and enables the production of outputs. Ideally, such a system provides tangible, customizable interfaces to engage stakeholders in data gathering and analysis and the production of outputs. Each country's data-management system will look different and have different specific aims. Some countries use sophisticated database tools connected to the Internet and made available for users to upload data and to operate from remote locations. However, many countries currently operate using a combination of spreadsheets, databases and bespoke software tools. Two of the many different data management systems relevant for the thematic data gathering, analysis and output activities (i.e. for GHG inventory and climate action tracking) are described below:



Greenhouse gas inventory

Producing the inventory relies on a range of data sets and entails a series of calculation, aggregation and compilation of data. This involves a large variety of data sets, methods and referenced assumptions. It is useful to make a distinction between the calculation and compilation (aggregation) phases of the GHG inventory production.

For calculating GHG emissions, it is important to allow for flexibility in the approaches taken by sector compilation experts who will need to use the tools most appropriate to the national circumstances. In many cases, experts will need to use simple spreadsheets when starting to develop compilation methods as they are easily accessible and the work is in a research and development phase (with many changes to data structures needed). When calculations become more complex (e.g. using higher-tier methods), specialized models or databases are often employed. Regardless of the method, the following good practices apply:¹³

- Using standard classification and nomenclatures for compiling estimates (this nomenclature can be based on country-specific, IPCC or other recognized classifications, or both);
- Including metadata in each file and maintaining a master list of the calculation files and their types, authors and versions;
- Using a standard file naming convention across categories and inventory cycles;

¹³ Source: Adapted from IPCC. 2019. 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. E Calvo Buendia, K Tanabe, A Kranjc, et al. (eds.). Geneva: IPCC. Available at <https://www.ipcc.ch/report/2019-refinement-to-the-2006-ipcc-guidelines-for-national-greenhouse-gas-inventories/>.



- Documenting in tools with evidence of the implementation of QA/QC procedures;
- Colour-coding or applying other visual formatting to differentiate between areas of data input, calculations, QA/QC checks, explanations and outputs (useful for spreadsheets);
- Documenting where historical data or methods have been revised;
- Documenting complex models;
- Following a standard output format for all reported data.

For GHG data collation, aggregation and reporting, regardless of the calculation method, whether formatted spreadsheets or models, the resulting inventory data will need to be collated into a set of standard tables for analysis and reporting. This allows effective QA/QC to be carried out to identify errors and anomalies, as well as facilitating the international review processes. The *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories* provides a suggested standardized structure for collating this data (see table 4).

Table 4 Suggested information to be included in a standardized data structure for collating greenhouse gas inventory data

1. Year	2. National nomenclature	3. Reporting nomenclature	4. Geography	5. Gas	6. Type of variable	7. Value	8. Units	9. Notation Keys	10. Reference
2005	Power station – hard coal	1A1a	National	CO ₂	Annual emission	2000	Kilo tonnes	–	Power Station calcs v2
2006	Power station – hard coal	1A1a	National	CO ₂	Annual emission	2100	Kilo tonnes	–	Power Station calcs v2
2007	Power station – hard coal	1A1a	National	CO ₂	Annual emission	2300	Kilo tonnes	–	Power Station calcs v2

1. The year of the value in the time series.
2. If relevant, the nomenclature used nationally and linked to the statistics, national definitions and/or source data, allowing reports for national use in a nomenclature familiar to national actors and stakeholders.
3. Reporting nomenclature (e.g. IPCC categories and fuels/activities).
4. Identifies which part of the national geographical area is represented.
5. Gas/pollutant.
6. Type of variable (e.g. emission/removal, activity data, implied emission factor).
7. The variable value.
8. Variable units.
9. Notation key (if relevant).
10. Reference/description of updates since previous compilation, and reference for the source of the value (calculation file).



Climate action data collection, tracking and reporting

Much like the preparation of the GHG inventory, climate action reporting involves the collection of a variety of data sets from a range of stakeholders and requires the information to be presented in a coherent and consistent manner. However, unlike the GHG inventory, this does not often involve a series of complex calculations; instead, the focus is on collecting detailed lists of information and descriptions that provide an overview of mitigation, adaptation and cross-cutting actions. Ideally these actions are linked to targets and objectives, risks and vulnerabilities, co-benefits, progress indicators and climate finance and support flows.

In more advanced reporting systems, there will be detailed impact calculations specific to individual actions or groups of actions. These will be compiled using the most appropriate tools but could all benefit from the establishment of suitable nomenclatures, naming conventions, and detailed and summary output formats. A data management system designed to track summary information of the action and its impacts should include information on the key stakeholders and reference documents and data sets. As with the GHG inventory, this may take the form of a series of linked spreadsheets that form the basis of a basic database or archive, or it may be a more developed online database. In either case, the data should be stored in a consistent and clear format.

Clearly linking climate adaptation and mitigation actions to information on support and investment will be beneficial. Any data management system used to store and track climate action data should therefore facilitate the provision of information from funders and supporters, at the project or programme level, if available. Managing this information at the action level can provide a bottom-up approach to understanding national climate support, which is often difficult to capture. The system should store detailed information on the key funders and supporters and the type and value of the support, as well as link to the recipient organization and information on data sources. This will provide a solid evidence base for understanding the national support landscape. This process will often require input from various sources in different organizations that interact with different sources of green finance. For example, the coordinating body for transparency may have information on capacity-building and technical support programmes, whereas the ministry of finance may be responsible for tracking incoming finances for large-scale infrastructure projects, which will have impacts on climate change adaptation and mitigation progress. Equally, private investment banks, NGOs and other private sector actors may play an important role in managing investment for a diverse portfolio of projects with climate change connections. Capturing all relevant information on support will require involving stakeholders across public and private sectors in the data collection process. The data management platform should facilitate this.

An example of some of the basic information included under climate action monitoring is presented in table 5 (with cells for linked information on targets and objectives, risks and vulnerabilities, co-benefits, progress indicators, and climate finance and support). This table can be used as an example to develop basic template for collection of data needed for common reporting tables and common tabular formats, which are currently being negotiated under the Subsidiary Body for Scientific and Technological Advice. The common reporting tables and common tabular formats are expected to be completed for consideration and adoption by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement at its third session).



Table 5 Illustration of a basic template for collating climate action data

Action ID	A unique ID for the action								
Title	A clear and descriptive title for the action								
Objective	The primary objective of the action								
Description	A detailed description of the action								
Action Type	Mitigation / Adaptation / Cross-cutting	Adaptation Priority	Low / Medium / High	Mitigation Priority	Low / Medium / High				
Status of implementation	Planned / In progress / Implemented	Start date	The start date or expected start date for the action	Full implementation date	The date or expected date of implementation of the action				
Sector category	Sectoral categories covered, mitigation and/or adaptation	Institution responsible	Institution responsible for monitoring the progress of the action	Lead stakeholder	Primary contact point(s) for the action				
Activities covered	Activities included or excluded: e.g., for mitigation: gases, fuels; for adaptation: subsectors/activities	Mitigation scenario	With existing measures / With additional measures	Type of policy instrument	Economic / Fiscal / Voluntary agreements / Regulatory / Information / Education / Research / Project / Planning / Other				
Estimated Action Costs	Cost of the action, including currency units	Geographical area included	Locations covered by the action (regions, cities, post codes, grid reference)	Methodologies and assumptions	Methodologies used to estimate impacts and costs				
Constraints	Any constraints to completing the action			Constraint type	Financial / Technical / Human resources				
Related SDGs	Any SDGs that the action addresses								
Related NDC target	Any targets in the NDC that the action addresses								
Related national strategies	Any national strategies that the action contributes to								
Wider impacts	Positive or negative wider impacts of the action outside the scope of the intended objectives								
Related challenges	Vulnerabilities or loss and damage that this action addresses								
Related Indicators	Linked indicators to track progress against project objectives, GHG mitigation or adaptation targets or wider impacts								
Expected results	Estimate of outcomes at different milestones based on the selected indicators for tracking progress								
Action support									
Name of supporter	Status	Type of instrument	Type of funding	Recipient	Amount	Cost unit	Year	Description of support activity	Data source
Name of the organization providing the support	Needed / Pledged / Committed / Received / Disbursed / Financial close	Financial (conditional grants, concessional loans, equity finance, export credit, grants, non-concessional loans) / Capacity-building / Technology support / General	Bilateral cooperation / Blended funding / Domestic funding / Multilateral cooperation	Organization(s) receiving the support	Value of the support	Unit or currency of support	The year in which the support was or will be provided	Type of support (mitigation, adaptation or cross-cutting), sectors covered, type of technology or equipment transferred	Source(s) of information that relate to this support

3.5.3 Management of quality assistance/quality control and documentation material

QA/QC and associated documentation is essential for enhanced transparency in reporting. An effective QA/QC system helps establish confidence in the evidence base among decision makers and the international climate action community. The key tools that should be considered part of the QA/QC management and documentation are:

- QA/QC plan: defines the roles and responsibilities for the QA/QC activities, establishes a workplan for QA/QC tasks and lists the QA/QC objectives. The objectives are high-level aims of the QA/QC system that are linked to tangible activities. For example, an objective focused on transparency is to ensure that all sources of information in the transparency system are clearly labelled. To ensure transparency, the documentation requirements should also be included in the QA/QC plan;
- QA/QC log: contains a store of implemented QA/QC and verification activities that are tracked by a QA/QC coordinator. The QA/QC coordinator ensures all the correct checks have been carried out on the data. This checking should align with the objectives included in the QA/QC plan;
- Improvement plan: includes all potential, planned and implemented improvements to the transparency system. MRV coordinators should collect, periodically review and re-prioritize the improvement plan. This review can help guide future stepwise efforts to improve the national transparency system in an effective way. Table 6 provides a suggested template for the information to be included in the improvement plan.

Table 6 Illustrative template for the information to be included in the improvement plan

1. Categorization	2. Name	3. Description	4. Origin	5. Status	6. Priority	7. Owner
Mitigation: GHG inventory: Energy balance: QA/QC	Energy balance checking	Improve the checking of the energy balance for time series consistency and comparison with large industrial reporting on energy consumption associated with emissions trading	International assessment and review / international consultation and analysis; technical expert review / technical analysis	In progress	High	Ministry of Energy
Mitigation: GHG inventory: Fluorinated gases: Accuracy	Tier 2 fluorinated gas estimates	Move to 2006 IPCC tier 2 estimates for fluorinated gas emissions	Stakeholder consultation 2018	In progress	High	Ministry of Interior
Adaptation: Vulnerability assessment: Agriculture sector: Livestock	Agriculture sector livestock vulnerability assessment	Undertake first analysis of vulnerabilities and risks to livestock using the latest (2019) climate impact scenarios	National adaptation plan consultation	In progress	High	Ministry of Agriculture

1. The categorization of the improvement. This could include the sector or categories, and the type of improvement activity (e.g. improved QA/QC processes, improved uncertainty analyses, improving data, recruiting expertise).

2. A short unique name.

3. Description of the improvement including information on time frames and technicalities for development.

4. The origin of the suggested improvement (e.g. recommendation or expert suggestion or international review process).

5. The status (e.g. suggested, proposed, planned, in progress, implemented) of the improvement.

6. The priority of the improvement.

7. The owner is the person or entity responsible for implementing the improvement.

Chapter 4

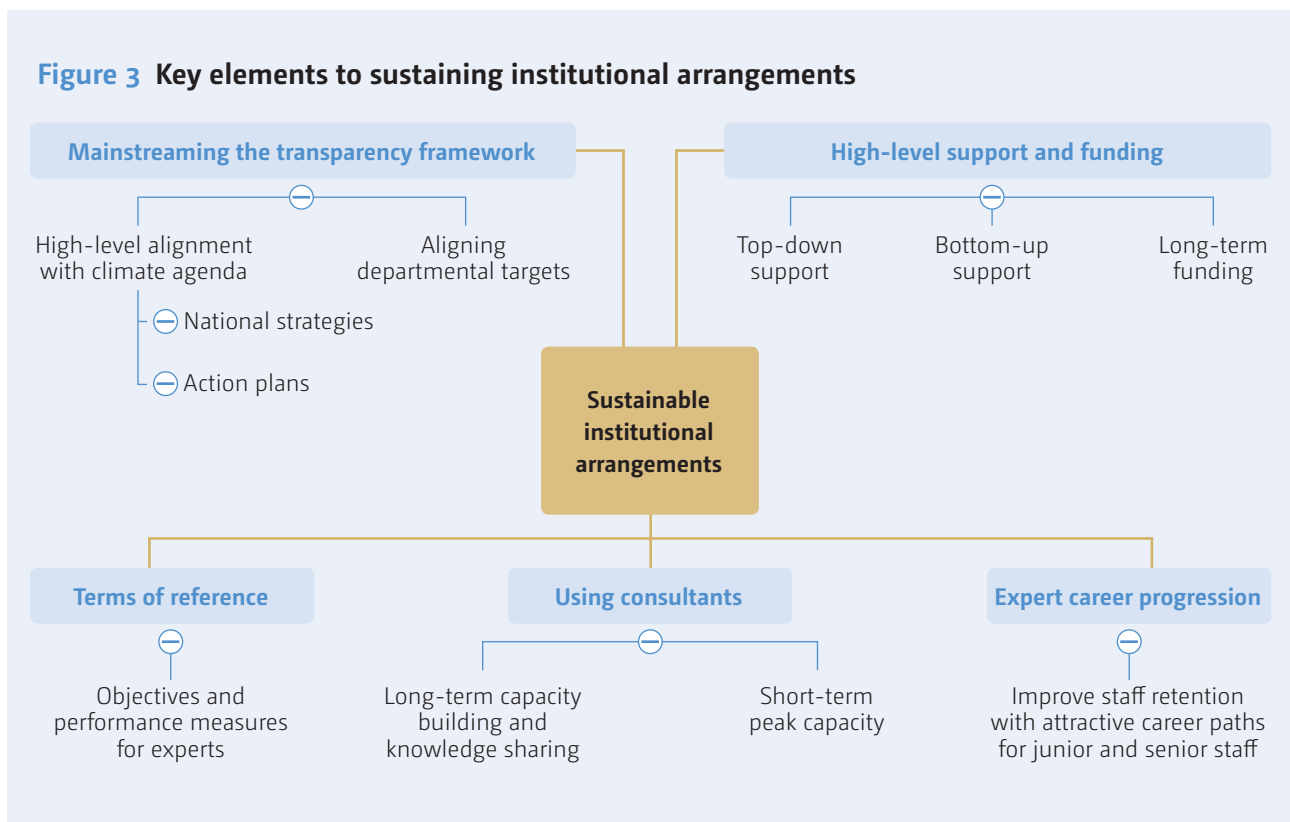
Ensuring the sustainability of institutional arrangements

Countries need to deliver reliable climate-related outputs on a regular basis. They need to build and retain knowledge and understanding for decision-making and reporting on climate action and support. This requires high-level support, the engagement of sectors and line ministries, clear terms of reference for long-term engagement, incentives for experts to develop their knowledge and skills, and external support and expertise.



Institutional arrangements should ensure continuity of service and continuous improvement within the transparency system. This is critically important to ensuring a country retains the knowledge and understanding required for making decisions on climate action and producing national reports on a regular basis. Institutional arrangements should align with work on preparing NDCs, national adaptation plans and national development strategies, as well as with work towards achieving the SDGs. The focus should be on a continually improving evidence base that is consistent in terms of accessible, reliable data and that has sustainable teams of national experts. All of this clearly requires investment. A stable transparency system will produce regular, reliable data updates for use by stakeholders and decision makers.

Measures and processes that can be put in place to ensure continuity of staff and improve data gathering and data management practices include (1) securing high-level support and funding while aligning the overall objective, targeted aims and priorities of the transparency framework with mainstream national priorities; (2) drafting effective terms of reference for individuals and organizations involved in the transparency system; (3) encouraging expert career progression and providing organizational support; and (4) using external consultants to build national capacity in a constructive fashion. Figure 3 illustrates the key components of sustainable, long-term institutional arrangements. Details on these elements are discussed below.





4.1 High-level support and funding

Developing a transparency system that is successful in the long term requires financial, human and technological resources. High-level support from ministers and decision makers can ensure funding for the system's staff and infrastructure is mobilized. To gain this support, it is important that the value of strong institutional arrangements is clearly understood and promoted through a variety of channels.

High-level support should be built by effectively engaging governing bodies through, for example, national councils and other national decision-making stakeholder engagement forums. Promoting public awareness through campaigns, data visualizations and other tools will help raise the profile of the work on developing a transparency system. Stakeholder engagement will garner support from the public, who in turn will pressure the political system to respond to the needs of the transparency system and mobilize necessary support.

Finance from a range of activities and projects can support the transparency system. With high-level support in place, MRV coordinators should identify internal and external funding opportunities both for retaining and developing the team of national experts and for gathering and compiling data. Fundraising activities can include lobbying for internal resources and scanning the horizon for external – local and international – funding sources. Examples of possible avenues for resourcing the development of institutional arrangements are:

- **National projects.** Funding for national data collection and analysis activities presents the project team with opportunities for streamlining data collection processes and establishing crucial relationships with data providers who support climate action data flow;
- **Reporting under the Convention.**¹⁴ Funding is available to support developing countries in preparing their NCs, BURs and BTRs. The benefits of such work reach beyond the output of the final report itself. The process of drafting the reports, with a focus on capacity-building and transparency system development, can act as an effective training exercise for inventory compilers and climate action experts, building capacity gradually over several reporting cycles. In this way, funding of this nature provides a steady resource stream for developing a team of national experts that progressively relies less on external consultants;
- **International projects.** Development and climate action aid funds can be leveraged to develop strong institutional arrangements, especially if they provide a steady stream of funding over an extended period of time. Some examples of available funds are:
 - The Global Environmental Facility's Capacity-building Initiative for Transparency;¹⁵
 - The multi-stakeholder partnership Initiative for Climate Action Transparency;¹⁶
 - The NDC Partnership's Climate Action Enhancement Package;¹⁷
 - Other bilateral and multilateral support opportunities;

¹⁴ <https://unfccc.int/process-and-meetings/transparency-and-reporting/support-for-developing-countries/guidelines-and-manuals-for-the-preparation-of-non-annex-i-national-reports-and-international>.

¹⁵ <https://www.thegef.org/topics/capacity-building-initiative-transparency-cbit>.

¹⁶ <https://climateactiontransparency.org/>.

¹⁷ <https://ndcpartnership.org/caep>.

- **Canvassing ministries to provide resources for the transparency system.** The transparency system will rely on individuals from several government ministries. The system coordinators have an important role to play in engaging not only with their host ministry, but also with other interested institutions. The value of the transparency system should be promoted across government, which can result in funding for improvements to data collection and other processes for a specific sector or activity (e.g. the improvement of road transportation data collection).

4.2 Mainstreaming in national development strategies

The transparency system should link to broader government analysis of and decision-making on national development strategies. It should feed vital information into decision-making processes, benefit from a reliable flow of data on the progress of national development strategies and reflect changing ambition. Such a mainstreaming process can be supported at a high level through the development of climate laws (see section 3.3), a process that encourages stakeholders to include low-emission, climate-resilient development in their national strategies. Case study 7 offers an example from Eswatini of a process of mainstreaming NDC implementation and transparency-related activities in government planning and development policies.

Case study 7 Mainstreaming implementation of the nationally determined contribution in Eswatini

Eswatini included the review and update of its National Climate Change Strategy and Action Plan as a key action in its project outline under the Capacity-building Initiative for Transparency to ensure that NDC implementation is mainstreamed. The National Climate Change Strategy and Action Plan was developed before the NDC and therefore does not take into consideration all of the issues included in the NDC. The strategy document is planned to be updated to include mid- and long-term sectoral goals, key milestones, and roles and responsibilities that will ultimately link existing government planning and development policies with NDC-related actions. This mainstreaming process will also consider department-specific strategies and targets and look to align them with NDC implementation to encourage day-to-day consideration of the data and objectives of the transparency system.

Relevant ministries, agencies and offices whose decision-making may be influenced by climate change data and NDC targets will be identified and trained in information-sharing, data interpretation and networking to ensure their continued engagement with the transparency system. To ensure tangible progress is tracked, the development of a monitoring and evaluation system for the National Climate Change Strategy and Action Plan has been proposed. These concrete actions have been designed to strengthen the capacity of national institutions to implement transparency-related activities in line with national priorities.

Source: <https://www.cbitplatform.org/projects/capacity-building-enhanced-transparency-climate-change-monitoring-reporting-and>.



4.3 Terms of reference

Defining clear terms of reference for individuals and organizations involved in the transparency system improves engagement and ownership. While the legal framework sets out expectations for data supply and knowledge-sharing, the terms of reference can establish tangible objectives and performance measures for experts and organizations to comply with. Examples of items that may be included in the terms of reference are:

- Objective of the involvement;
- Specific tasks and responsibilities;
- Key deliverables and outcomes (and related performance measures);
- Expected period of commitment;
- Names and contact details of key individuals/roles.

4.4 Career progression

The movement of key experts and other staff is inevitable and indeed widespread across both the public and the private sectors. The retention of junior and senior staff alike relies on attractive career paths and opportunities for progression. Developing these avenues such that they are compatible with the retention of knowledge and skills is an important step in minimizing the impact of staff movement.

Each organization involved in the transparency framework should be responsible for its own succession of experts and for ensuring that the movement of staff does not cause the institutional arrangements that have been developed to weaken. The role of junior staff is important in this respect; they not only provide backup and support for lead experts, but also are natural successors when senior experts are promoted, find other opportunities or retire. Strategies that provide junior staff with attractive career paths and opportunities are not always viable given organizational structure and capacity limitations, but some examples are to:

- **Invest in development and training.** Providing staff with opportunities to attend training courses and learn new skills builds the knowledge base of the team and increases the value of individuals within the team;
- **Promote ownership and responsibility.** Empowering staff to develop and share their ideas and to make decisions can provide them with a sense of ownership in their roles and encourage their investment in the outcomes. Giving individuals responsibility for outputs – for example, compiling the GHG inventory for the waste sector, managing data for the transparency system – ties the success of the transparency system to the development of the individuals;

- **Reward ownership and responsibility.** Rewarding staff – through, for example, job title changes, salary increases and bonuses – as they take on more responsibility is important to ensure that this added responsibility is not viewed as an additional, unnecessary burden;
- **Support ‘train the trainer’ programmes.** Encouraging skill-sharing and internal training as staff develop new skills and acquire knowledge widens the knowledge base of the team, develops a continuous flow of well-trained staff and enables more junior staff to feel valued.

4.5 Use of consultants

A consultant can be any organization or individual external to the existing institutional arrangements called on to build capacity in the transparency system. Consultants can fulfil a number of roles, including finding, engaging and training stakeholders; designing, adapting and creating templates and tools; gathering and analysing data; compiling estimates; improving methods; and producing reports, indicators and outputs. They can be contracted long term to provide support in producing regular outputs, or hired on a flexible basis, providing capacity during short-term peak times.

The use of consultants in a constructive manner can support the gradual building of national capacity with the ultimate aim of the national experts or team becoming autonomous and independent from external support.

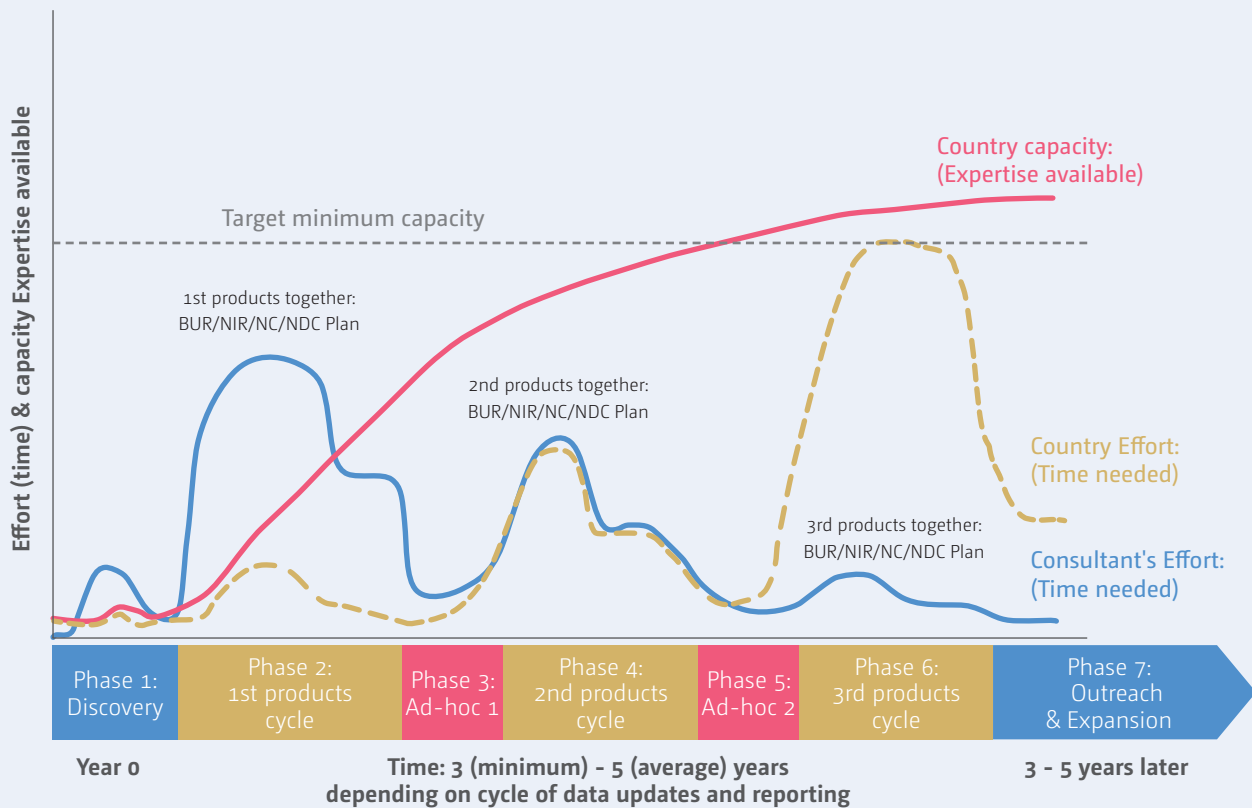
Good practices in consultant behaviour can be encouraged through well-documented terms of reference or contracts that specify the intention of the national expert team to retain tools, data and knowledge after the consultant’s work is done. Examples of good practices include that a consultant:

- Shares knowledge well through using existing and implementing new tools, templates and systems;
- Simplifies and improves the efficiency of the work of national experts;
- Works closely with a progressively evolving team of junior and senior experts;
- Pushes the national experts or expert team to perform more of the transparency activities, but remains available as a backup for complicated processes or to boost limited capacity during busy periods;
- Hands over all materials needed for systems to function well without them.

Figure 4 shows how the transfer of knowledge from external consultants to national expert teams can progress over the course of several years’ engagement. The approach illustrated is focused on long-term capacity-building, which gradually leads to a stable independence of the team from the consultants after a period of time working together. This approach is in contrast to a common short-term reactive approach wherein consultants are contracted to meet an immediate need and produce outputs and the longer-term development of national expertise or capacity is not considered.



Figure 4 Using consultants for building capacity and developing institutional arrangements



Case study 8 outlines Iceland's approach to developing its in-house expertise for GHG inventory and transparency work focused on gradual building of capacity over the course of several years with the objective of independence from external support.



Case study 8 Iceland's approach to building in-house capacity through external support


Iceland worked with a team of external consultants over a period of four years to gradually build the capacity of its small team of national experts in GHG emissions and air quality inventory compilation and MRV system development. The external support focused on the inventory compilation cycle, including the production and review of outputs. The key factor to success was the gradual nature of the engagement with the consultants. Training focused on making steady progress by compiling the inventory for specific sectors (initially agriculture and waste) and on building institutional capacity to reduce future reliance on consultants. As the experience and technical skills of Iceland's experts grew, the role of the consultants evolved to the review of inventory outputs and the development of more advanced outputs, such as uncertainty assessment and key category analysis.

While this capacity-building exercise was under way, Iceland received support for developing its broader MRV framework and data management system; this development was led by a designated national MRV coordinator. Focusing this support on the reporting cycle links tangible outputs with training and capacity-building objectives, giving the national experts the opportunity to test their knowledge and take on more responsibility over the years.

The outcome of this process has been the development of a competent, confident team of national experts who are able to respond to international reporting requirements with limited input from external consultants. Through a strong focus on internal capacity-building and retention of institutional memory to build resilience against staff turnover, Iceland has been able to break the cycle of reliance on external consultants. This has resulted in Iceland's inventory team having improved access to, and understanding of, the GHG and air quality evidence base.

Source: https://unfccc.int/sites/default/files/resource/Iceland_NC7_BR3_2018_Final_I.pdf.





Chapter 5

Step-by-step guide to setting up and adapting institutional arrangements

Steps for establishing sustainable institutional arrangements include clarifying their scope, identifying and engaging stakeholders, developing systems and tools, and undertaking review with a view to making improvements.

Recognizing the need for regular detailed reporting and increasingly ambitious climate action under the Paris Agreement, this chapter provides a step-by-step guide to establishing and enhancing sustainable institutional arrangements for the transparency system. Not all elements will apply to all countries. Different countries are at different stages of development as well as transition to the ETF under the Paris Agreement. All countries have their own systems for data collection and production.

Where possible, the development and enhancement of institutional arrangements should be undertaken in parallel with the preparation or updating of climate change strategies (including NDCs) and national reports (such as NCs, BURs and BTRs). Doing so will ensure that institutional arrangements are developed in the context of needing to produce key outputs and enable stakeholders to be engaged in and focused on producing those outputs.

The steps in establishing institutional arrangements for the transparency system are grouped under four phases, as follows.

Phase 1: Scoping

Step 1: Clarify the scope and objectives

- Determine the thematic scope for the transparency system's institutional arrangements (e.g. whether it will include mitigation, adaptation and/or support);
- Identify and draft a list of the transparency system objectives and outputs (see section 3.1) to help set the boundaries and expert and data requirements for the institutional arrangements;

Step 2: Form a picture of the existing national system elements

- Review any data gathering and reporting activities (within the scope set out in Step 1) to date for national and/or international reports and strategies (e.g. NCs, BURs, BTRs, NDCs, national adaptation plans, climate strategies);
- Identify experts and data sets available or already in use for these activities, and:
 - Identify and categorize relevant institutions, experts, data suppliers, systems and stakeholders;
 - Identify gaps where documents are missing and/or experts are no longer available;
 - Identify where existing documents lack sufficient detail to cover the thematic scope of the institutional arrangements and their objectives and outputs, as identified in Step 1;
- Engage with decision makers and explore their needs for data to support analysis and tracking of climate adaptation and/or mitigation action;



Phase 2: Identifying key stakeholders and organizational mandates

(see section 3.2 for details on how to identify national focal points and coordinators)

Step 3: Find a champion

- Identify and develop competency in the national focal point in order to begin understanding reporting needs and engaging with stakeholders. This step could be undertaken through the provision of external support to both mentor the national focal point and provide interim expert capacity;

Step 4: Establish high-level coordination

- Identify and develop a national high-level forum to which the transparency system can report and inform decision makers on progress and ambition, such as coordination bodies and steering committees;
- Establish terms of reference for the coordination and steering bodies to ensure they are properly informed by the transparency system and contribute to improving it by using resources and/or data;

Step 5: Map the proposed arrangements

- Establish an overarching organizational structure for the transparency system, highlighting the key organizations and their roles and responsibilities within it. This organizational diagram can be used in the early stages of engagement with organizations to illustrate the scope of the mandate of the institutional arrangements within the transparency system (see figure 2);
- Determine the details of the transparency system objectives and outputs, highlighting which organizations may be involved and identifying:
 - Technical coordination units and technical working groups or technical personnel who will carry out data compilation and management;
 - Key data suppliers (e.g. for national statistics on energy, transport, agriculture, forestry, water, waste and climate, as well as economic forecasting and climate change scenario forecasting);
 - The team of national experts needed for compiling and reporting information;
 - Organizations that will implement actions and therefore benefit from a regular supply of information from the transparency system;

Phase 3: Developing systems, processes and agreements to maintain data flows

Step 6: Develop an implementation plan

- Engage with stakeholders, explaining the mandate of the transparency system, consult with them on the organizational structure and roles and responsibilities within it, as well as on gaps in data and expertise, and develop a plan for putting the institutional arrangements into place;
- The implementation plan should include developing legal arrangements, possibly climate laws; recruiting and training experts; and developing data systems;
- It is helpful to bear in mind, when discussing with stakeholders, the practical activities, including collecting, processing and analysing data and producing reports. Clearly indicating who is responsible for what will help stakeholders understand their roles and responsibilities and the resource implications of the work;

Step 7: Develop the legal framework

- Develop the laws, MOUs and DSAs that will secure the data flows and expertise needed for a sustainable transparency system. Section 3.3 can be used as a guide for this work;

Step 8: Put in place structures for long-term success

- Establish the means by which the sustainable institutional arrangements will enable regular updates of the required information within the transparency system. These means may include development and training plans for experts, career development opportunities and backup support for staff, clear and robust arrangements for data supply, the ongoing provision of financial and human resources, and the continuous improvement and flexibility of the transparency system itself;
- QA/QC and the production of outputs helpful to decision makers is important to maintain the system's value. Chapter 4 provides more details on the sustainability of institutional arrangements;



Phase 4: Reviewing and improving

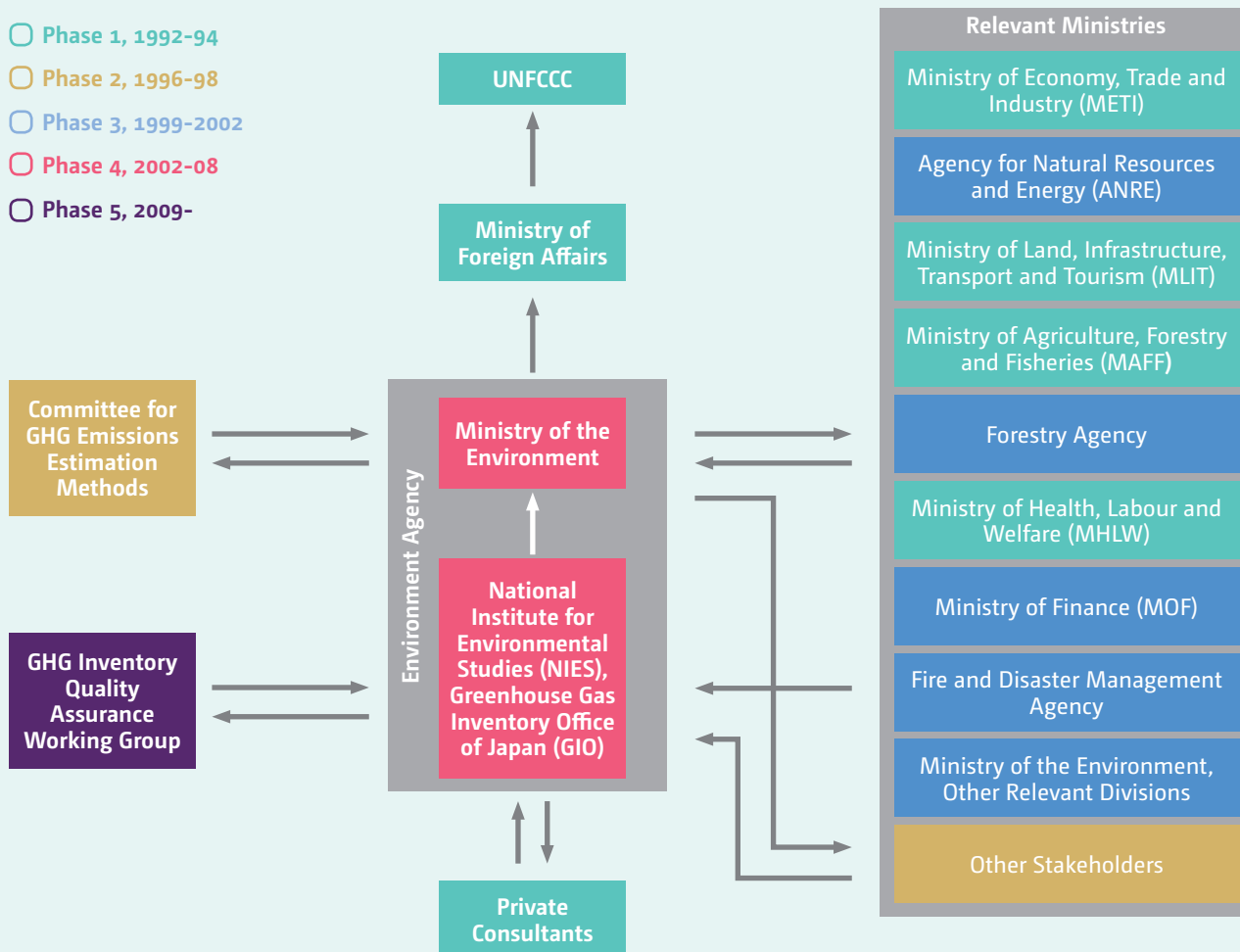
Step 9: Allow for the evolution of arrangements, systems and processes

- Review institutional arrangements and amend as needed and as the scope and importance of different transparency themes evolve;
- Develop communication and improvement plans to engage stakeholders who provide data, add value and use the transparency system;
- Participate in and provide feedback on outputs from national and international review processes, the outcomes of which will feed into the improvement plan.

It is worth noting that the process of putting in place a transparency system will likely evolve and there is no quick fix to building sustainable, effective institutional arrangements. Japan, for example, has been building its MRV system since 1992; the system has steadily grown in size and complexity. Case study 9 outlines Japan's approach, which demonstrates the value of building on existing structures over time.

Case study 9 Japan's stepwise development of a transparency system

Japan's MRV system took 17 years to reach the level of sophistication it is at now, illustrating the point that building a national MRV system can be a multi-decade process that requires a foundation upon which building blocks are added over time. Establishment of the MRV system started in 1992 with a small inventory team consisting of staff from the national Environment Agency and external consultants. An inventory committee, which was set up to develop and review the methodologies for estimating GHG emissions and more broadly to engage more stakeholder groups, including NGOs and academia, enhanced the MRV system. Further development of the institutional arrangements, including enhanced QA/QC processes, was undertaken to meet the requirements of reporting under the Kyoto Protocol. The Greenhouse Gas Inventory Office of Japan was set up in 2002 to further organize the GHG inventory process and engage more ministries. Over time, the relationships among relevant ministries have been enhanced and they now engage more actively with one another allowing a more complex and better functioning institutional structure. This evolving process has been driven by meeting key needs but also with a strategic view to building a sustainable long-term system. The figure below outlines Japan's current MRV organizational structure, illustrating the changes implemented following each new phase.



Source: Dagnet Y, Cogswell N, Bird N, et al. 2019. Building Capacity for the Paris Agreement's Enhanced Transparency Framework. Working Paper. Washington, D.C.: World Resources Institute. Available at https://www.transparency-partnership.net/system/files/document/WRI-building_capacity_PA-ETF.pdf.

Chapter 6

Reporting on institutional arrangements



Reporting represents an important focus for gathering, analysing and clearly presenting information on institutional arrangements. Reporting on institutional arrangements can enhance stakeholders' understanding of – and contribution to – the transparency system.

Countries are expected to report on institutional arrangements relevant to the preparation of national reports. The UNFCCC reporting guidelines on NCs and the UNFCCC reporting guidelines on BURs both contain this provision. The MPGs for the ETF contain detailed guidance as to what information on institutional arrangements countries shall provide.

When reporting on institutional arrangements, it is important to show how a range of stakeholders come together and work together across transparency themes. It is also important to demonstrate how institutional arrangements are sustainable or what efforts are being made to enhance the sustainability of institutional arrangements, and how they are embedded in or interact with core national strategy development and implementation functions as well as other environmental goals and the SDGs. Organization charts, similar to the one shown in figure 2, can help national focal points and reviewers understand the interlinkages within institutional arrangements across transparency themes.

A key consideration in reporting on institutional arrangements is gender-disaggregated data. Providing disaggregated data, as relevant, is important to ensure the interests of all social groups are represented and to enhance the profile of gender-disaggregated evidence in producing more accurate indicators. These indicators are required to quantitatively and qualitatively assess whether women and men have benefitted equally from capacity-building activities. Examples of data to report include the gender split of focal points in key sectors, in any proposed coordination bodies, in access to tools, templates and guidance, and in representation at workshops and webinars.

The guidance below builds on the reporting requirements outlined in the MPGs for the ETF and provides a more extensive description of what about the institutional arrangements to report on. The guidance is designed to assist countries in providing compelling descriptions of the efforts they are making to coordinate their institutions and provide decision makers and the international community with reliable information that drives ambitious action and enhanced transparency in climate reporting.

Reporting on institutional arrangements can include:

- An overall description of the institutional arrangements in place to ensure the regular and continuously improving provision of the required information. This description can include details of how the information is assessed for quality and how potential improvements are identified and then implemented;
- A description of the interlinkages within institutional arrangements across transparency themes, that is, how the institutional arrangements are included with or link to institutional arrangements for tracking other transparency themes and how they link to institutional arrangements for tracking other environmental goals and the SDGs. This description improves the perceived coherence of transparency activities. Highlighting the linkages demonstrates a coordinated focus on the use of the GHG inventory to track progress and to support decision makers in delivering ambitious mitigation action and ensuring coherence with adaptation action, and also demonstrates a focus on the use of information on support to track progress in mitigation and adaptation action;



- A description of how institutional arrangements enable countries' efforts to ensure that climate actions are compatible with other environmental and sustainable development actions by integrating data, systems and expertise.

Details for reporting on institutional arrangements related to each transparency theme are presented below.



National greenhouse gas inventories (decision 18/CMA.1, annex II.B, para. 19): functions related to inventory planning, preparation and management

- **National entity/focal point.** This entity is the primary contact point for communicating national historical and projected emissions. Describe its position in government, location, national function, and roles and responsibilities;
- **Inventory preparation process.** Include a list of the stakeholders who supply data or provide expertise and/or review services, and the division of their responsibilities. The roles and responsibilities include ensuring that (1) the inventory is of suitable quality, (2) sufficient activity data are available and collected, (3) the correct choice and development of methods is made, (4) the emission factors and other parameters are in accordance with the relevant IPCC guidelines and (4) adequate review of the estimates is carried out. Identify gaps and potential weaknesses and include a summary of the organizational mandates in place to ensure the above compilation and review services are adequately delivered;
- **Archiving and documentation.** Describe how and where all the information for the reported time series – disaggregated emission factors and activity data, and documentation on generating and aggregating data (including QA/QC, review results and planned inventory improvements) – is archived, and from where past compilations can be retrieved;
- **Approval process.** Describe how the official review and approval process for the national GHG inventory works. Providing brief examples and evidence of this process helps provide assurances that the national GHG inventory data are reliable.



Tracking progress made in implementing and achieving nationally determined contributions (decision 18/CMA.1, annex III.A, paras. 61–62)

- **Institutional arrangements for tracking progress against NDCs** (including internationally transferred mitigation outcomes, if applicable). Describe the organizations and processes involved in gathering, processing and sharing information on climate action. Explain who the information is shared with, and how it is used to monitor progress and design new actions. Highlight relevant indicators that provide regular updates to stakeholders on progress and how the indicators are maintained. Descriptions could include details of how the information is assessed for quality and how improvements are identified and subsequently implemented. Also

describe, if applicable, how the use of internationally transferred mitigation outcomes is tracked and how such information is shared with stakeholders;

- **Changes since last BTR.** Explain any changes made to the institutional arrangements since the previous BTR and why they have been made;
- **Institutional arrangements driving action.** Provide details of the legal, institutional, administrative and procedural arrangements for domestic implementation, monitoring, reporting, archiving of information and stakeholder engagement related to the implementation and achievement the NDCs. Descriptions could include the organizations involved in designing and implementing actions and the procedures in place to ensure NDC commitments are met.



Climate change impacts and adaptation (decision 18/CMA.1, annex IV.A, para. 106(b–c))

- **Institutional arrangements and governance for monitoring and reporting.** Describe the organizations and mandates in place to support the country in collecting and analysing data to assess impacts and to understand and secure appropriate action. Include details of data governance, monitoring and evaluation, and reporting processes;
- **Institutional arrangements and governance for driving action.** Describe the organizations, mandates and processes involved in designing and implementing action to address climate change at the national and sectoral level. Include decision-making, planning, coordination, addressing of cross-cutting issues, adjustment of priorities and activities, consultation, participation and implementation, as well as any legal and policy frameworks and regulations.



Financial, technology development and transfer and capacity-building support needed and received (decision 18/CMA.1, annex VI.A, para. 130)

- **Systems and processes used to identify, track and report on support needed and received.** Describe the organizations, mandates, data flow, experts and procedures involved in gathering, analysing, reviewing and reporting information on support needed and received;
- **Challenges and limitations.** Describe the challenges in the monitoring and reporting of support needed and received. Include any gaps/incompleteness, significant uncertainties and risks to developing a good-quality, reliable data flow.



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