

Handbook on
**MEASUREMENT,
REPORTING AND
VERIFICATION**

FOR DEVELOPING COUNTRY PARTIES



United Nations
Framework Convention on
Climate Change

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For further information contact
United Nations Climate Change Secretariat
Platz der Vereinten Nationen 1
53113 Bonn, Germany
Telephone +49 228 815 10 00
Telefax +49 228 815 19 99

For more information, you can also visit the MRV framework
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Handbook on

MEASUREMENT, REPORTING AND VERIFICATION

FOR DEVELOPING COUNTRY PARTIES

FOREWORD



Parties to the United Nations Framework Convention on Climate Change are obliged to communicate to the Conference of the Parties (COP), through the secretariat, information on the actions they have taken or envisage they will take to implement the Convention. This is seen as a key implementation aspect of the Convention, as it allows Parties to inform one another of their national level actions and serves as a basis for the COP to assess the implementation of the Convention by Parties.

The reporting provisions contained in the Convention were further enhanced through the Bali Action Plan adopted at COP 13 in 2007. The Bali Action Plan introduced the principle of measurement, reporting and verification (MRV) for both developed and developing country Parties in the context of enhancing action at the international and national level to mitigate climate change. This principle was further elaborated through a number of subsequent COP decisions, resulting in a comprehensive MRV framework under the Convention.

For developing country Parties, the existing MRV framework encompasses submitting national communications every four years and biennial update reports (BURs) every two years, undergoing international consultation and analysis (ICA), setting up domestic MRV of domestically supported nationally appropriate mitigation actions (NAMAs), and undertaking MRV of REDD-plus activities for the purpose of obtaining and receiving results-based incentives.

The COP also addressed financial and technical support that aims to facilitate developing countries to meet their reporting requirements and to improve the process of the technical analysis of BURs, which is one of the steps in the ICA process.

The fact that the relevant requirements issued by the COP on the MRV framework are scattered over multiple COP decisions makes it difficult for stakeholders who are not directly involved in the intergovernmental negotiation process to comprehend these requirements. This handbook has thus been prepared to serve as a 'one-stop shop' providing an overview of the full package of decisions adopted by the COP on the MRV framework for developing countries. It is my expectation therefore that this handbook will contribute to enhancing the understanding of experts and practitioners on the ground who are supporting and/or implementing climate actions, of the aspects of the MRV framework for developing countries.

A handwritten signature in black ink, appearing to read 'Christiana Figueres'.

Christiana Figueres, Executive Secretary

United Nations Convention on Climate Change
Bonn, Germany, December 2014

PREFACE

In the context of the MRV framework for developing countries, it is critical that a full understanding of the associated concepts, elements, and requirements resulting from intergovernmental negotiations be realized at the national level by experts, practitioners and other stakeholders on the ground.

With that in mind, the secretariat has developed this handbook to disseminate relevant information on the MRV framework for developing countries and to demystify associated concepts and elements.

The handbook is structured into three sections providing general context and an overview of the contents of the handbook, an outline of relevant MRV concepts and the chronological context of the development of the MRV framework as well as an overview of the key elements of the MRV framework at the international level structured around information on national communications, BURs and consideration of reports through the ICA process. Technical and financial support for MRV activities is also covered, as are the key elements of national MRV frameworks, domestic MRV of domestically supported NAMAs and MRV for REDD-plus actions.

The secretariat encourages the use of this handbook to gain a clearer understanding and overview of the MRV framework for developing countries. It is our hope that it will prove to be a useful resource that will help developing countries to efficiently and effectively implement the MRV framework.



Donald Cooper, Coordinator

Mitigation, Data and Analysis Programme

ACRONYMS

BURs	Biennial update reports
CGE	Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention
CH ₄	Methane
CO	Carbon monoxide
CO ₂	Carbon dioxide
COP	Conference of the Parties
EFDB	Emission factor database
GCF	Green Climate Fund
GDP	Gross domestic product
GEF	Global Environmental Facility
GHG	Greenhouse gas
GPG	Good practice guidance
GWP	Global warming potential
HFCs	Hydrofluorocarbons
ICA	International consultation and analysis
IPCC	Intergovernmental Panel on Climate Change
IPCCGPG 2000	Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories
IPCC GPG 2003	Good Practice Guidance for Land Use, Land-Use Change and Forestry
LDCs	Least developed country Parties
LUCF	Land use change and forestry
LULUCF	Land use, land-use change and forestry
MRV	Measurement, reporting and verification
N ₂ O	Nitrous oxide
NAMAs	Nationally appropriate mitigation actions
NC	National communication
NMVOCs	Non-methane volatile organic compounds
Non-Annex I	Parties not included in Annex I to the Convention
NO _x	Nitrogen oxides
PFCs	Perfluorocarbons
QA	Quality assurance
QC	Quality control
REDD	Reducing emissions from deforestation and forest degradation
SBI	Subsidiary Body for Implementation
SF ₆	Sulphur hexafluoride
SIDS	Small island developing States
SO _x	Sulphur oxides
TTE	Team of technical experts
UNFCCC	United Nations Framework Convention on Climate Change

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Chapter 1

INTRODUCTION



Article 12 of the Convention obliges all Parties, in accordance with Article 4, paragraph 4, to communicate to the Conference of the Parties (COP) information relevant to the implementation of the Convention, including in relation to emissions and removals. This allows the Convention to have reliable, transparent and comprehensive information on emissions, actions and support, thereby forming an essential basis for understanding current emission levels, and the ambition of existing efforts, as well as progress on both the national and international scale.

The arrangements for national reporting have evolved throughout the history of the Convention and its Kyoto Protocol into a more comprehensive measurement, reporting and verification framework. Measures to significantly enhance transparency of action and support under the Convention were adopted as part of the Bali Action Plan at COP 13 and elaborated in decisions adopted at subsequent COPs.

This handbook is aimed at a non-negotiator audience, including climate change practitioners on the ground. It provides an overview of the full package of decisions adopted in the international negotiations concerning measurement, reporting and verification (MRV) provisions for developing countries under the Convention, including measurement and reporting through national communications and biennial update reports (BURs); procedures for international consultation and analysis (ICA); and guidelines for domestic MRV frameworks, including those for domestically supported nationally appropriate mitigation actions (NAMAs) and activities relating to reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (REDD-plus).¹

1) The REDD-plus activities are listed in decision 1/CP.16, paragraph 70.

A person wearing a traditional conical hat and gloves is working with rice husks and charcoal briquettes in a rural setting. The person is wearing a blue long-sleeved shirt and pink gloves. They are using a large woven basket to hold rice husks and a smaller basket to hold charcoal briquettes. The ground is wet and muddy, and there are several charcoal briquettes scattered around. The background shows a dirt path and some green plants.

Chapter 2

MEASUREMENT, REPORTING AND VERIFICATION (MRV): BACKGROUND AND HISTORIC TIMELINES

The United Nations Framework Convention on Climate Change, which was adopted in 1992 and entered into force in 1994, laid the foundation for the current system of reporting of information related to its implementation. Information on greenhouse gas (GHG) emissions by sources and removals by sinks, as well as on the actions that Parties are taking to mitigate and adapt to climate change and to implement the Convention, is key in determining the progress in the implementation of the Convention, both internationally and at the national level.

Over the decade that followed the entry into force of the Convention, the international framework was further elaborated, including the development of a structured approach to measurement, reporting and, after COP 13 in Bali, also to verification. Parties adopted a number of decisions detailing guidance, including on the content and frequency of national communications, and established provisions for biennial update reports (BURs) and domestic frameworks for measurement, reporting and verification (MRV). They also adopted a number of decisions on the financial and technical support to be provided to help Parties not included in Annex I to the Convention (non-Annex I Parties) meet their reporting obligations. Furthermore, a process for international consultation and analysis (ICA) of BURs has been established.

This chapter provides a chronological overview of the evolution and the key decisions on MRV for developing country Parties through to COP 19 in Warsaw² (see figure 1 below) and outlines the key concepts around MRV. The chapters that follow provide a more detailed explanation of each of the specific elements of the MRV framework.

According to the provisions of the Convention, all Parties need to report to the COP information on their emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol, and on the steps they are taking to implement the Convention through national communications. The latter includes national or, where appropriate, regional programmes containing measures to mitigate, and to facilitate adequate adaptation to, climate change, and any other information that the Party considers relevant to the achievement of the objective of the Convention.³

According to the Convention, each non-Annex I Party was obliged to submit its initial national communication within three years of the entry into force of the Convention for

that Party, or of the availability of financial resources.⁴ The least developed country Parties can submit their initial national communications at their own discretion. Currently, non-Annex I Parties should submit their national communications every four years or in accordance with any further decisions on frequency by the COP, taking into account a differentiated timetable and the prompt provision of financial resources to cover the agreed full costs incurred by non-Annex I Parties.⁵ The required contents of the national communications and the timetable for their submission are different for developed and developing country Parties.

In 1996, Parties adopted detailed guidelines for the preparation of national communications from developing country Parties.⁶ These guidelines, for the first time, defined the scope, structure and content of the information to be reported in the national communication.⁷ The following year, the initial round of national communications consisted of submissions from six developing country Parties, including Argentina, Jordan, Mexico, Micronesia (Federated States of), Senegal and Uruguay. This was the first fulfilment of the reporting obligations under the Convention by developing country Parties.

In order to improve national communications from developing country Parties through technical advice and support, in 1999, the COP established the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE).⁸ This group is considered as the key technical support element under the Convention to assist developing country Parties in meeting their reporting obligations.

In 2002, COP 8 arrived at two important decisions relating to reporting by developing country Parties. First, recognizing the significant and positive role played by the CGE in improving the process of the preparation of national communications from non-Annex I Parties, its term was continued for another five years from 2003 to 2007 with a broader mandate for technical assistance.⁹ Secondly, the COP adopted the revised guidelines for the preparation of national communications which, to date, have provided the basis for the preparation of national communications from non-Annex I Parties.¹⁰

Until COP 13, there was no process for considering the national reports submitted by developing country Parties under the Convention, except for the compilation and

2) For example, decisions 17/CP.8, 1/CP.13, 1/CP.16, 2/CP.17, 2/CP.18 and 14/CP.19.

3) Article 4, paragraph 1, and Article 12, paragraph 1, of the Convention.

4) Article 12, paragraph 5, and Article 4, paragraph 3, of the Convention.

5) Decision 1/CP.16, paragraph 60.

6) Decision 10/CP.2.

7) These guidelines were revised in 2002 at COP 8 (decision 17/CP.8).

8) Decision 8/CP.5.

9) Decision 3/CP.8.

10) Decision 17/CP.8, annex.

synthesis of information reported in submitted national communications. It was at COP 13 through the Bali Action Plan that Parties agreed on the principle of applying MRV to developing country Parties in the context of undertaking enhanced national/international action on mitigation of climate change.¹¹ This provided the foundation for the subsequent elaboration of the existing comprehensive MRV framework for developing country Parties.

The process of MRV, which started at COP 13 in 2007, resulted in a few key milestones at COP 16 in 2010 (see Figure 1). In addition to defining the frequency of the submission of national communications from non-Annex I Parties – every four years – further elements of MRV were agreed upon,¹² including:

- Enhancing reporting in national communications, including GHG inventories, from non-Annex I Parties on mitigation actions and their effects, and support received;
- Submitting BURs every two years;
- Conducting ICA of BURs that aims to increase the transparency of mitigation actions and their effects;
- Subjecting both domestically and internationally supported mitigation actions to domestic MRV.

Furthermore, at COP 16, developing countries agreed to undertake nationally appropriate mitigation actions (NAMAs) (see Box 1). A registry was set up to record NAMAs and the support available, and to facilitate the matching of support to NAMAs. Parties also agreed that domestically

Figure 1:
Key milestones in the development of the MRV framework
for developing country Parties

1992/1994	The Convention establishes reporting obligations for all Parties and timelines for the initial national communications from developing country Parties (Article 12, paragraph 5, and Article 4, paragraph 3)
1996	The guidelines for the preparation of national communications from developing country Parties: scope, structure and content (decision 10/CP.2)
1997	The first reporting under the Convention by developing country Parties through the initial round of national communications
1999	The Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE) is established to assist countries in their reporting obligations
2002	COP 8 adopted the revised guidelines for the preparation of national communications (decision 17/CP.8) and extended the term of the CGE for the period 2003-2007 with a broader mandate for technical assistance (decision 3/CP.8)
2007	COP 13 agreed to the principle of applying measurement, reporting and verification (MRV) to developing country Parties in the context of undertaking enhanced national/international action on mitigation of climate change (decision 1/CP.13)
2009	CGE is reconstituted for the period 2010-2012 to continue providing technical support and enhancing the capacity of developing country Parties to prepare their national communications
2010	COP 16 defined the frequency of the national communications every four years, and introduced additional elements of MRV (decision 1/CP.16): enhanced reporting in national communications, including inventories, on mitigation actions and their effects, and support received; biennial update reports (BURs) every two years; international consultation and analysis (ICA) of BURs; and domestic MRV of domestically supported mitigation actions
2011	COP 17 adopted the guidelines for the preparation of BURs and the guidelines and modalities for ICA: the first BUR to be submitted by December 2014, consistent with the capabilities and the level of support provided for reporting; least developed country Parties and small island developing States may submit this report at their discretion; the first BUR is to cover, at a minimum, the inventory for the calendar year no more than four years prior to the date of submission; ICA will commence within six months of the submission of the first round of BURs; ICA will include a two-part technical analysis and facilitative sharing of views
2013	COP 19 adopted several decisions on the elements of the MRV framework: composition, modalities and procedures for the team of technical experts under ICA (decision 19/CP.19); general guidelines for domestic MRV (decision 21/CP.19); seven decisions of the Warsaw Framework for REDD-plus; and the term of the CGE continued for the period 2014-2018 with a broader mandate

11) Decision 1/CP.13.

12) Decision 1/CP.16.

Box 1: Key concepts – NAMAs and low-carbon development strategies

Nationally appropriate mitigation actions (NAMAs) were introduced in the international climate negotiations in 2007. The Bali Action Plan stated that the enhanced action on mitigation is to include “*nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner*”.

Effectively, NAMAs refer to mitigation actions by developing countries that aim at achieving a deviation in GHG emissions relative to ‘business as usual’ emissions in 2020. Such actions could be undertaken by a country on its own with domestic resources (domestically supported NAMAs), or with international support, including capacity-building, finance or technology (internationally supported NAMAs). NAMAs can take various forms, ranging from policy or regulatory interventions at the national or sectoral level (e.g. emissions trading schemes, feed-in-tariffs), to project-based NAMAs targeting specific investments or technology (e.g. development of a waste treatment facility).

In 2010, COP 16 decided to set up a registry to record NAMAs seeking international support, to facilitate the matching of finance, technology and capacity-building support with these actions, and to recognize other NAMAs. The NAMA Registry has not been designed to perform functions of MRV of mitigation actions and support. The latter is provided for by other mechanisms, which are discussed in this handbook. Participation in the registry is voluntary. More information is available on the NAMA Registry at <www.unfccc.int/8184.php>.

supported mitigation actions (those undertaken without international support) will be subject to domestic MRV “in accordance with general guidelines” to be developed by the COP. These provisions are discussed in more detail in chapter 3.6.

The development of revised guidelines for the reporting of mitigation actions and GHG inventories, and processes to facilitate this reporting, were central to efforts to implement the agreements reached in Cancun. COP 17 adopted the guidelines for the preparation of BURs as well as modalities and guidelines for ICA. These two decisions provided sufficient basis to initiate the operationalization of the MRV framework resulting from the Bali Action Plan. It was decided that developing country Parties should, consistent with their capabilities and the level of support provided for reporting, submit their first BUR by December 2014. After the submission of the first BURs, they are to be submitted every two years on a mandatory basis. The least developed country Parties (LDCs) and small island developing States (SIDs) may submit this report at their discretion.

The first rounds of ICA will commence within six months of the submission of the first round of BURs by developing country Parties. The frequency of the subsequent rounds of ICA is determined by the frequency of the submission of BURs, which is normally every two years, with special flexibility for SIDs and LDCs, which may undergo ICA at

their discretion. ICA will consist of two steps: the technical analysis of BURs by a team of technical experts; and a facilitative sharing of views, in the form of a workshop convened at regular intervals under the Subsidiary Body for Implementation (SBI).

Two years later, COP 19 made another significant advance in the implementation of the MRV framework, resulting in a number of decisions capturing all the key elements necessary for the implementation of the MRV framework for developing country Parties:

- Composition, modalities and procedures for the team of technical experts to conduct technical analysis under ICA;¹³
- General guidelines for domestic MRV;¹⁴
- The Warsaw Framework for REDD-plus.

Furthermore, the term of the CGE was continued for another five years from 2014 to 2018. The mandate was expanded to include the capacity-building of experts participating in the technical analysis under ICA.

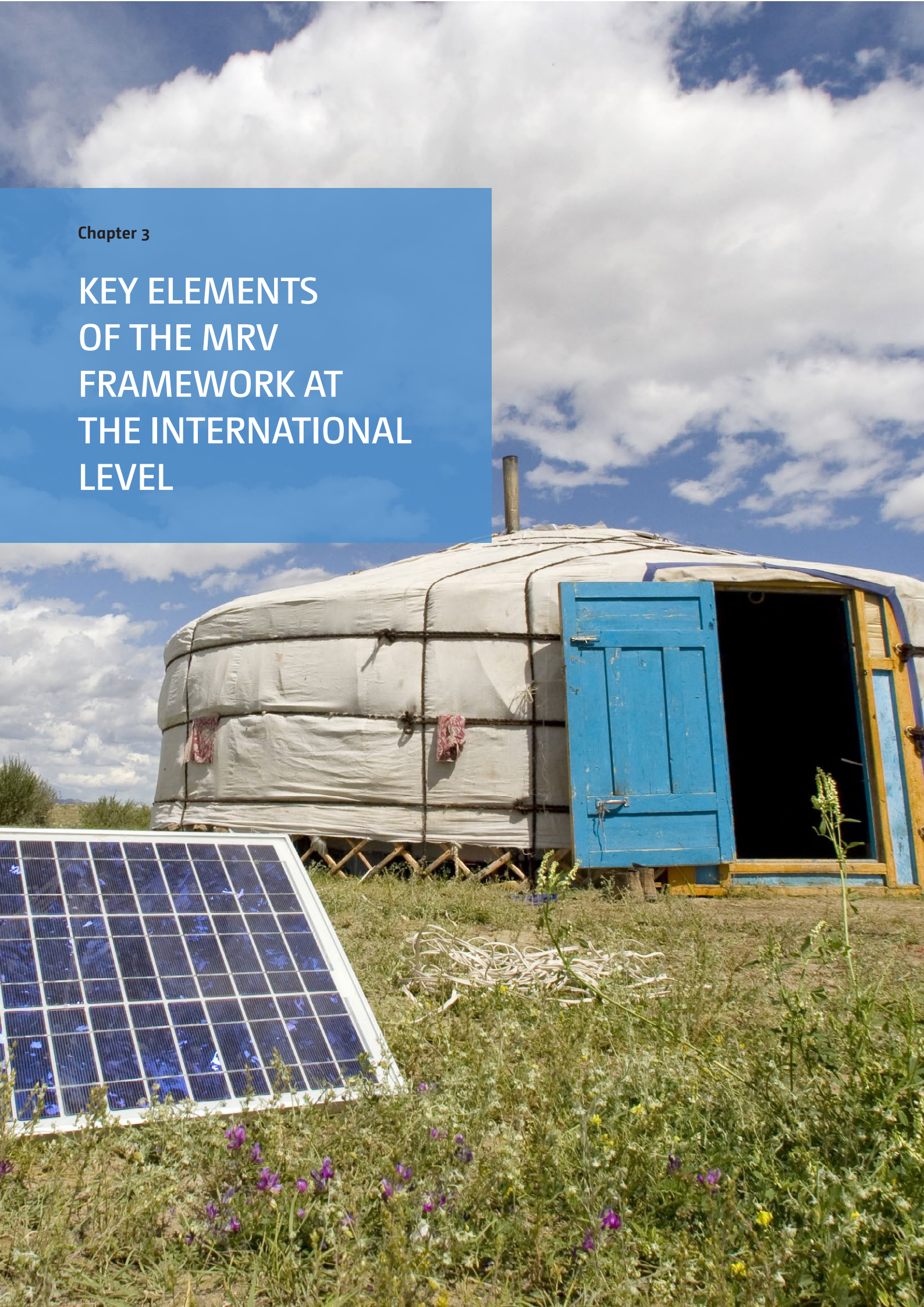
The subsequent chapters outline the key elements of the MRV framework for developing country Parties based on the latest decisions and guidelines adopted by the COP. They also draw upon practical experience generated through the years of developing and implementing the MRV framework.

13) 19/CP.19.

14) 21/CP.19.

Chapter 3

KEY ELEMENTS
OF THE MRV
FRAMEWORK AT
THE INTERNATIONAL
LEVEL



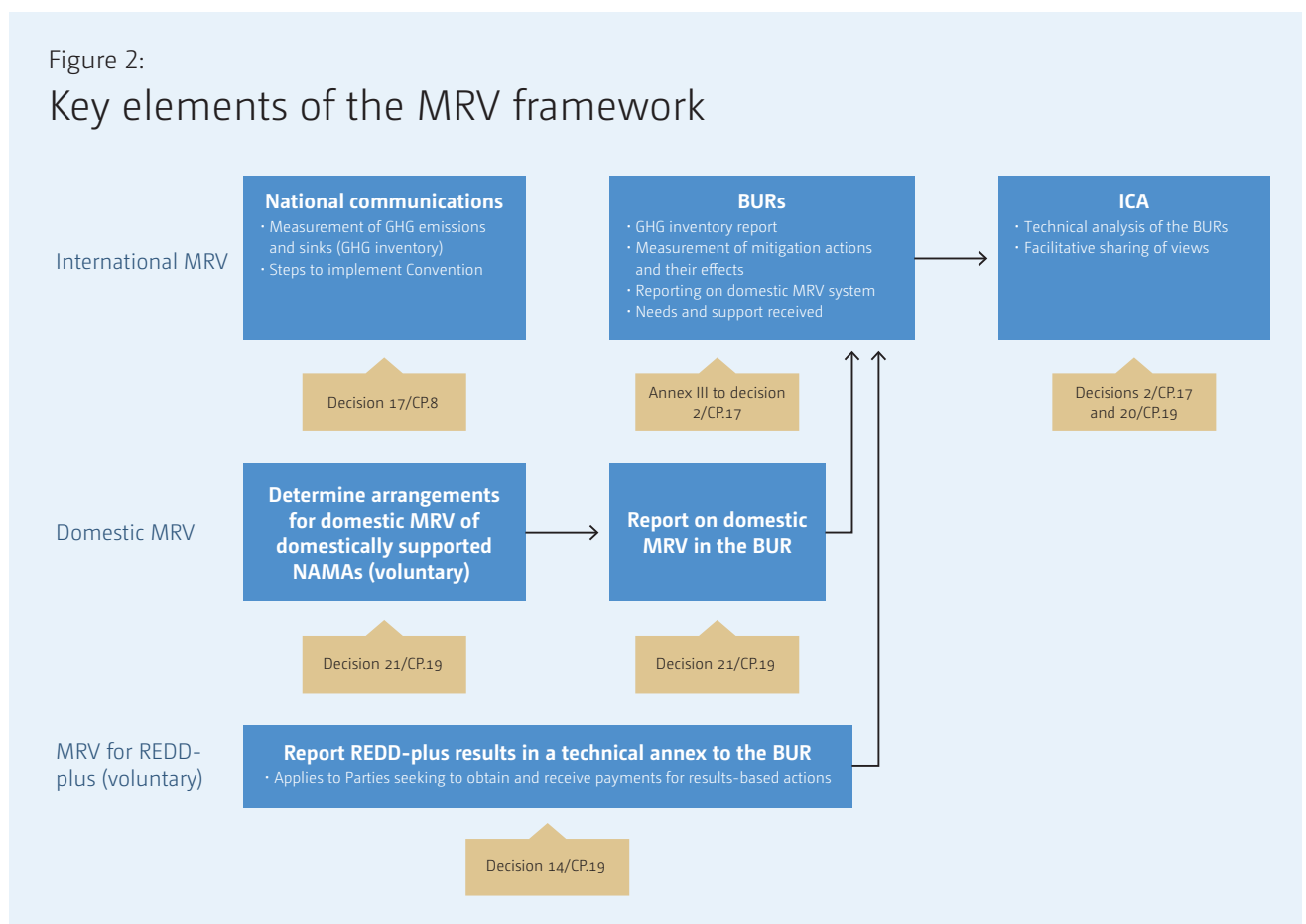
The existing framework for MRV under the Convention for developing country Parties consists of several elements, which have been put in place gradually through a set of decisions by the COP over the period 2004–2013.

Some of these elements are implemented at the international level and others at the national level. At the international level, the MRV framework for non-Annex I Parties includes:

- Guidance on reporting through national communications and BURs;
- Guidance on setting up domestic MRV frameworks;
- A process for consideration of information submitted by non-Annex I Parties in their BURs through ICA;
- For those non-Annex I Parties that voluntarily implement REDD-plus activities and wish to take the opportunity of a results-based payment, international guidance on MRV for REDD-plus activities applies.

At the national level, Parties are expected to implement the international guidelines for domestic MRV frameworks and to prepare and report information according to the guidance on reporting through national communications and BURs, including information on GHG emissions and removals by sinks, mitigation actions and their effects, and support needed and received.

This chapter describes each of the key elements of the MRV framework (see Figure 2).



Measurement for non-Annex I Parties applies both to efforts to address climate change and to the impacts of these efforts, including the level of GHG emissions by sources and removals by sinks, emission reductions and other co-benefits. Such measurement occurs at the national level. Initially, it referred to the measurement of GHG emissions by sources and removals by sinks through the national GHG inventories, which are reported in national communications. Based on the decisions adopted at COP 16 and 17, non-Annex I Parties now need to measure the specific effects of national mitigation actions as well as the support needed and received, and to provide this information, including a national inventory report, as part of their BURs. The methodologies for measurement are not defined by the Convention; therefore, in undertaking measurement Parties rely on methodologies developed externally, including by the Intergovernmental Panel on Climate Change (IPCC) and other organizations, as discussed in more detail below. However, where possible, the COP identifies and endorses the methodologies that Parties should use, at a minimum.

Reporting for non-Annex I Parties is implemented through the national communications and BURs. Parties are required to report on their actions to address climate change in their national communications, which include information on the GHG inventories, adaptation, mit-

igation actions and their effects, constraints and gaps, support needed and received, and other information considered relevant to the achievement of the objective of the Convention. National communications are to be submitted every four years and prepared following the guidance contained in the revised guidelines for the preparation of national communications from non-Annex I Parties contained in the annex to decision.¹⁵ BURs are to be submitted every two years, providing an update of the information presented in national communications, in particular on national GHG inventories, mitigation actions, constraints and gaps, including support needed and received.¹⁶ The first round of submission of BURs is due by December 2014.

Verification is addressed at the international level through ICA of BURs, which is a process to increase the transparency of mitigation actions and their effects, and support needed and received.¹⁷ National communications are not subject to ICA. At the national level, verification is implemented through domestic MRV mechanisms to be established by non-Annex I Parties, general guidelines for which were adopted at COP 19 in 2013. Provisions for verification at the domestic level that are part of the domestic MRV framework are to be reported in the BURs. Special provisions have been adopted for verification of REDD-plus activities, as discussed in chapter 3.7.



15) Decision 17/CP.8

16) Decision 2/CP.17, annex III.

17) Decision 2/CP.17, annex IV and 20/CP.19.

3.1. NATIONAL COMMUNICATIONS

This section provides a background on the key concepts and provisions related to national communications and an overview of the major elements that they should contain.

What are national communications?

National communications are at the heart of reporting on the progress in the implementation of the Convention. They are documents to be submitted periodically by all Parties to the Convention containing information on their emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol, and on the steps taken or envisaged to implement the Convention. The timelines for the preparation and reporting, as well as the frequency and content, of the national communications are different for Parties included in Annex I to the Convention (Annex I Parties) and non-Annex I Parties, as discussed below.

The core elements of the national communications include information on a general description of the national circumstances and institutional arrangements; emissions and removals of GHGs through the national inventory; steps taken or envisaged by the non-Annex I Party to implement the Convention; and any other information relevant to the achievement of the objective of the Convention.

Parties submit their national communications to the COP, through the UNFCCC secretariat based in Bonn, Germany, which makes them publicly available on its website.¹⁸

How often should national communications be prepared and what is available?

COP 16 decided that non-Annex I Parties should submit their national communications to the COP every four years or in accordance with any further decisions on frequency to be adopted by the COP in the future.¹⁹ This is based on the prompt provision of financial resources to cover the costs incurred in preparing the national communications. Financial support for the preparation of national communications and BURs to non-Annex I Parties is provided through the Global Environment Facility (GEF), which serves as an operating entity of the Financial to Parties.

What information should be included?

The guidelines for the preparation of initial national communications from non-Annex I Parties were adopted by COP 2 in Geneva in 1996.²⁰ These guidelines were then revised and adopted at COP 8 in 2002. The revised guidelines are contained in decision 17/CP.8 and its annex.²¹ The purpose of the guidelines is to:

- Assist non-Annex I Parties in meeting their reporting requirements;
- Encourage the presentation of information in a consistent, transparent, comparable and flexible manner;
- Facilitate the presentation of information on support required for the preparation of national communications;
- Serve as policy guidance to an operating entity of the financial mechanism of the Convention, for the timely provision of financial support; and
- Ensure that the COP has sufficient information to carry out its responsibility for assessing the implementation of the Convention.

According to the revised guidelines, national communications from non-Annex I Parties should contain, at a minimum, six thematic components, including national circumstances and institutional arrangements; national GHG inventory; programmes containing measures to facilitate adequate adaptation to climate change; programmes containing measures to mitigate climate change; other information; and constraints and gaps, and related financial, technical and capacity-building needs (Figure 3).

In order to assist Parties in applying the guidelines, the UNFCCC secretariat has prepared a user manual, *Reporting on Climate Change: User Manual for the Guidelines on National Communications from Non-Annex I Parties* (hereinafter referred to as UNFCCC NC user manual).²² The UNFCCC NC user manual gives detailed step-by-step guidance on preparing a national communication.

¹⁸) All the national communications submitted by non-Annex I Parties are available at <<http://unfccc.int/2979.php>>.

¹⁹) Decision 1/CP.16, paragraph 60(b).

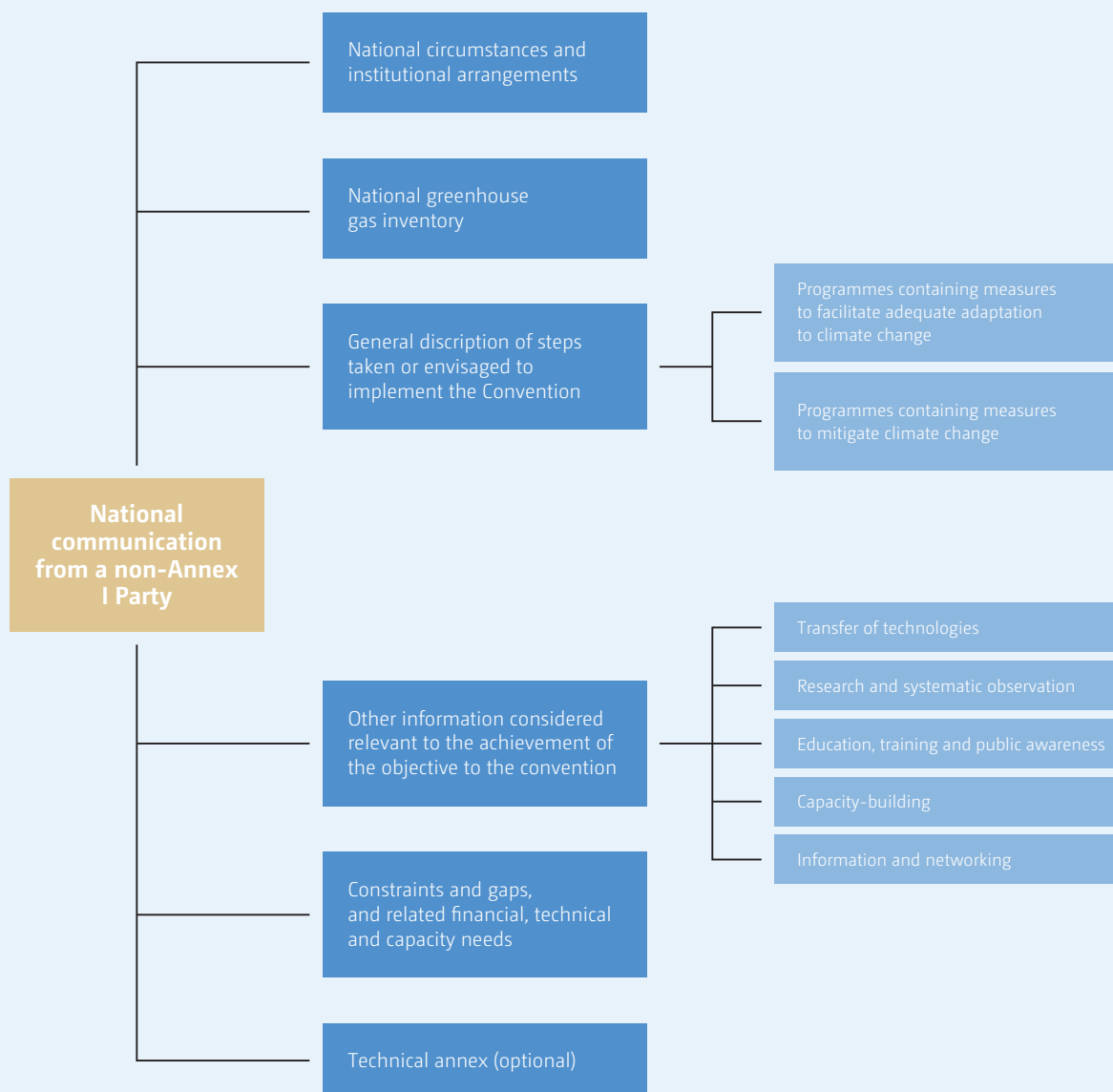
²⁰) Decision 10/CP.2.

²¹) <<http://unfccc.int/resource/docs/cop8/07a02.pdf#page=2>>.

With the adoption of the Cancun Agreements,²³ Parties decided to enhance reporting in national communications, including GHG inventories, mitigation actions and their effects, assumptions and methodologies, and support received, with additional flexibility to be given to the LDCs and SIDs.²⁴

This section provides the highlights of the key elements of national communications.

Figure 3:
 Key elements of national communications



22) <http://unfccc.int/files/essential_background/application/pdf/userman_nc.pdf>.

23) Decision 1/CP.16. See <http://unfccc.int/key_steps/cancun_agreements/items/6132.php>.

24) Decision 1/CP.16, paragraph 60.

25) <<http://www.unfccc.int/2709.php>>.

What happens to the information provided?

Upon request of the COP, the information provided in national communications are compiled and synthesized by the secretariat into reports for consideration by the SBI and the COP. To date, six rounds of compilation and synthesis have been undertaken.²⁵

3.1.1 National circumstances and institutional arrangements

This section of the national communication should provide information on national development priorities, objectives and circumstances that serve as the basis for addressing climate change. Such information on the national circumstances is critical for understanding a country's vulnerability, its capacity and ability adapting to the adverse effects of climate change, as well as its capabilities for addressing its GHG emissions within the broader context of sustainable development.

This description may include information on features of the national geography (e.g. climate, forests, land use and other environmental characteristics), population (e.g. growth rates, distribution and density), economy (including information on the key sectors) and education (includ-

ing scientific and technical research institutions), which may affect the country's ability to deal with mitigating and adapting to climate change, as well as information regarding its specific needs and concerns arising from the adverse effects of climate change and/or the impact of the implementation of response measures.²⁶

Parties may also include a description of the institutional arrangements relevant to the preparation of national communications, including:

- Information on the distribution of responsibilities within government departments and other relevant organizations;
- Climate change coordinating bodies (establishment, funding, membership);
- Involvement and participation of stakeholders;
- Information on technical/expert groups (e.g. GHG inventory, vulnerability and adaptation assessment, and mitigation).

In preparing this document, countries may document existing arrangements and their status, and identify and list future improvements (see Box 2: Example of key questions to address in describing institutional arrangements for national communications and Table 1).

Box 2: Example of key questions to address in describing institutional arrangements for national communications

- **Overall coordinating responsibility: for example, the Ministry of Environment:**
 - To whom is the coordinating responsibility allocated? What is the legal status of that body? What are the reporting lines within the government?
- **Contribution from other institutions and experts:**
 - What other institutions are involved and what are their roles? Which institutions are responsible for the key sectors and for the key corresponding sections of the national communications (e.g. actions to address adaptation, mitigation and the GHG inventory);
 - What is the involvement of non-State institutions (e.g. trade associations, non-governmental organizations, universities and research centres)?
- **Quality assurance/quality control procedures:**
 - Checks for the adequacy of the methodology;
 - Transparency arrangements;
 - Use of third-party reviews (e.g. by national or international experts not involved in inventory development);
- **Any provisions for public consultation or other forms of stakeholder engagement**

²⁶ As contained in Article 4, paragraph 8, and, as appropriate, Article 4, paragraphs 9 and 10, of the Convention.

Table 1:

Example of how information on institutional arrangements can be reported

Role	Organization	Contact Information	Comments (status of the institutional arrangements)
Overall institutional arrangements for UNFCCC focal point, national communications, BURs and GHG inventory			
UNFCCC focal point (name) and UNFCCC focal point agency			Describe the arrangements between the inventory agency/organization, the UNFCCC focal point agency and the BUR focal point, if different
Designated national coordinator/agency for the preparation of national communications and biennial update reports			
National focal point for national GHG inventories (if applicable)			
National focal point for adaptation (if applicable)			
National focal point for mitigation (if applicable)			
National focal point for climate finance, etc.			
National inventory management team (similar tables could be adapted, as appropriate, for other themes such adaptation, mitigation, finance, etc.)			
National GHG inventory coordinator			
Sectoral leads for each sector			
Archive (data and document) manager/coordinator			
QA/QC coordinator			
Uncertainty analysis coordinator			
Other			
Sectoral roles and arrangements (similar tables could be adapted, as appropriate, for other themes such adaptation, mitigation, finance, etc.)			
Technical coordinator			
Expert compiling estimates			
Expert reviewer			
Data provider			
Other			

3.1.2 National greenhouse gas inventories

3.1.2.1 Guidelines and methodologies

In developing national GHG inventories, Parties should use, at a minimum, the *Revised 1996 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the Revised 1996 IPCC Guidelines) (see Box 3). These guidelines are complemented by the *IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories (2000)* and the *IPCC Good Practice Guidance for Land Use, Land-Use Change and Forestry (2003)* (hereinafter referred to as the IPCC good practice guidance for LULUCF).²⁷

In choosing which methodology to apply, Parties should consider the availability of data. The IPCC inventory methodologies are divided into various levels or tiers. Generally, the higher the number designating the tier, the more detailed the methodology and the more accurate the emission estimates. Tier 1 represents the minimum, or default, methodology. If sufficient data are available, a Party can try to apply a higher tier. Tiers 2 and 3 involve more elaborate methods which could be either source category specific or technology-based. These methods require more detailed data and/or measurements for their application. In the case where a national methodology exists and is consistent with the IPCC Guidelines, it is highly advisable to use this methodology, but it should be fully documented, in order to allow the reader to understand why it is better than the default proposed by the IPCC.

Parties are also encouraged, to the extent possible, to undertake any key category analysis as indicated in the IPCC good practice guidance to assist in the development of inventories that better reflect the national circumstances. A key category is one that is prioritized within the national inventory system because its estimate has a major influence on a country's total inventory of direct GHGs in terms of absolute level of emissions, or trends in emissions, or both. The CGE has released updated training material on the key category analysis, which is available at <<http://www.unfccc.int/349.php>>.

3.1.2.2 Coverage and the inventory preparation cycle

Non-Annex I Parties should estimate national inventories of all GHGs not controlled by the Montreal Protocol, to the extent capacities permit, for the year 1994 for the initial national communication or alternatively may provide data for the year 1990. For the second national communication the national GHG inventories should be, at a minimum, estimated for the year 2000. The least developed country Parties could estimate their national GHG inventories for years at their discretion.

Each non-Annex I Party shall, as appropriate and to the extent possible, provide in its national inventory, on a gas-by-gas basis and in units of mass, estimates of anthropogenic emissions of carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) by sources and removals by sinks. Parties are encouraged to provide information on anthropogenic emissions by sources of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆) and of other GHGs such as carbon monoxide (CO), nitrogen oxides (NO_x) and non-methane volatile organic compounds (NMVOCs). Other gases not controlled by the Montreal Protocol, such as sulphur oxides (SO_x), included in the IPCC guidelines may be included at the discretion of the Parties.

Parties wishing to report on aggregated GHG emissions and removals expressed in CO₂ equivalent should use the global warming potentials (GWP) provided by the IPCC in its Second Assessment Report (hereinafter referred to as the 1995 IPCC GWP values) based on the effects of GHGs over a 100-year time horizon.

The guidelines for the preparation of national communications from non-Annex I Parties in the annex to decision 17/CP.8 contain two template tables for reporting, one for the national GHG inventory of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol and GHG precursors (table 1), and another for the national GHG inventory of anthropogenic emissions of HFCs, PFCs and SF₆ (table 2). Parties are expected to report, at a minimum, their data on the national GHG inventory using table 1. Further, Parties are encouraged to include in their national communi-

27) <<http://www.ipcc-nggip.iges.or.jp/public/index.html>>.

cations table 2 as well as the inventory sectoral tables and worksheets, which summarize the emissions by sectors, in both electronic and hard copy format. For further detailed guidance on reporting national GHG inventories, please refer to the UNFCCC NC user manual or the annex to decision 17/CP.8.

According to the recently adopted guidelines for the preparation of BURs, non-Annex I Parties will need to submit an inventory update report as part of their BURs on a regular basis. The first BUR shall cover, at a minimum, the inventory for the calendar year no more than four years prior to the date of the submission, while subsequent BURs shall cover a calendar year that does not precede the submission date by more than four years (see Figure 7). It is therefore recommended that the years chosen for the inventory in the national communication are consistent and meet the requirements of the BUR.

Figure 4 shows the main elements of the GHG inventory cycle. It is crucial that, based on its national circumstances, a country starts by setting up proper institutional arrangements, which will allow for the smooth and regular development of GHG inventories. Subsequently, during the GHG inventory development phase, it is equally important to fully and systematically document all the data and the methods used. Quality assurance (QA) and quality control (QC) will apply in parallel, while an archiving system (both for electronic and hard copy versions of the information stored) will need to be created and maintained. The key category analysis will be applied in order to help countries prioritize their efforts, as well as the use of their resources, and a national inventory improvement plan will pave the way for the next GHG inventory which will address some of the limitations identified in the current one.

Box 3: IPCC Guidelines

The IPCC Greenhouse Gas Guidelines provide detailed methods for estimation of GHG emissions by sources and removals by sinks. The guidelines have been updated over time to include more emission source and removal categories and to improve methods. The Good Practice Guidance adopted by the IPCC in 2000 also provided guidance on the identification of the key inventory categories, inventory management and planning, such as selection and collection of data, and quality assurance and control. The Good Practice Guidance on Land Use, Land-Use Change and Forestry was adopted by the IPCC in 2003.

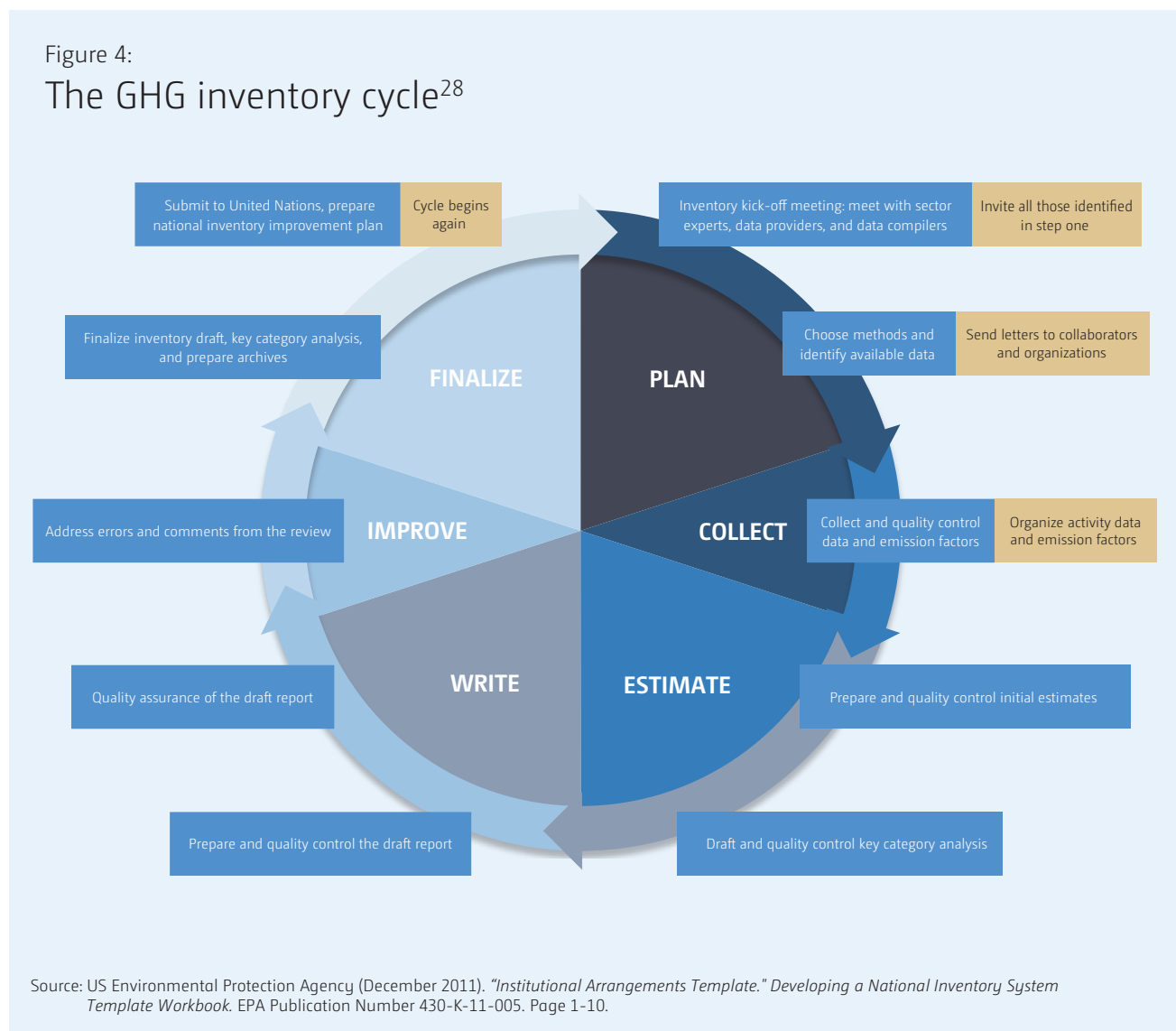
The 2006 IPCC guidelines update and synthesize the Revised 1996 Guidelines, Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories and Good Practice Guidance for Land Use, Land-Use Change and Forestry. While there are some structural changes in the 2006 guidelines, including the combination of the previously separate Agriculture and LULUCF sectors into one sector, for the most part the inventory methods in the 2006 Guidelines are updates of the previous editions (e.g. additional sources, new default emission factors).

In addition to guidance on appropriate estimation methods, the 2006 Guidelines also include cross-sectoral good practice guidance for inventory preparation. This includes collection of activity data, key category analysis, quality assurance and control, and inventory planning and documentation.

Since the IPCC Guidelines are intended to be used by all countries with different capacities, they provide different tiers of methods for each category of emission source or removal category. The higher tier methods (Tier 3 being the highest) are typically more detailed, data intensive, and rely on country-specific parameters to estimate emissions. In contrast, Tier 1 methods utilize more aggregated data and default emission factors.

Source: Breidenich, C. 2011. Improving Reporting of National Communications and GHG Inventories by Non-Annex I Parties under the Climate Convention. Natural Resources Defense Council.

Figure 4:
The GHG inventory cycle²⁸



3.1.2.3 National arrangements

Non-Annex I Parties are encouraged to describe the procedures and arrangements undertaken to collect, document, quality check and archive data for the preparation of national GHG inventories, as well as efforts to make this a continuous process, including information on the role of the institutions involved. Parties are welcome to provide information about the procedures and arrangements (e.g. institutional) established in order to sustain the process of data collection, documentation, quality checking and archiving. This is intended to help make inventory preparation a continuous process. The CGE has released updated training material on national arrangements, which is available at <<http://www.unfccc.int/7915.php>>.

3.1.2.4 Technical support

In order to assist non-Annex I Parties in developing and reporting their GHG inventories as a part of their national communications, the UNFCCC secretariat developed a web-based software tool, which incorporated all the elements prescribed by decision 17/CP.8.²⁹ Access to the web-based software tool is provided through the national focal points for the UNFCCC. Upon request to the secretariat, each non-Annex I Party will be provided with access to a password-enabled working space in the web-based software tool. The individual working space contains the following functionalities:

28) <<http://www.epa.gov/climatechange/Downloads/EPAactivities/Template-1-Institutional-Arrangements.doc>>.

29) <<http://www.unfccc.int/7627.php>>.

- Modules to estimate and report GHG emissions, and conduct key source analysis, consistency and completeness checks;
- Exporting to and importing from the Excel and Xml formats;
- Inventory management, including management of users and different versions of the inventory;
- Archiving of the finalized GHG inventories.

Furthermore, the CGE has released training materials on national GHG inventories, which are available at <<http://www.unfccc.int/349.php>>.

In addition to these tools, there are other tools available (for example, IPCC Inventory Software based on the 2006 IPCC guidelines for national GHG inventories, Agriculture and Land Use National Greenhouse Gas Inventory Software (ALU) from Colorado State University, CollectER/ReportER emission inventory software from European Environment Agency (EEA) and its European Topic Centre on Air and Climate Change) to choose depending on the need and relevance to each Party. While there are many tools to choose from, the final decision to use the tool should be determined by the depth of information available and needed to run the tool, expertise available in the country, and the national circumstances.

As noted above, following the decisions adopted at COP 16 and COP 17, in reporting their estimates of GHG emissions and removals by sinks, non-Annex I Parties are now required to prepare and submit a national inventory report as part of their BURs, which should allow for the comprehensive reporting of information (see chapter 3.2 below for further details).

3.1.3 General description of steps taken or envisaged to implement the convention

Each non-Annex I Party, as a part of its national communication, should communicate a general description of steps taken or envisaged to implement the Convention, taking into account its common but differentiated responsibilities and specific national and regional development priorities, objectives and circumstances. Non-Annex I Parties may provide information on programmes containing measures to mitigate climate change and measures to facilitate adequate adaptation to climate change. Taking into account Article 4, paragraph 7, and, as appropriate, Article 4, paragraphs 3 and 5, of the Convention, the

extent to which developing country Parties will effectively implement their commitment to communicate this information will depend on the effective implementation by developed country Parties of their commitments under the Convention relating to financial resources and transfer of technology.

Essentially, this section of the national communication could provide a summary of the overall steps taken in terms of setting up institutional arrangements for addressing climate change and high-level measures taken on adaptation to and mitigation of climate change. For example, in this section, countries could highlight whether a governing body (or bodies) has been allocated responsibilities for addressing climate change and whether a national vulnerability and adaptation assessment and/or national adaptation plan have been developed. Regarding mitigation, it could report whether a national mitigation assessment has been undertaken and at which levels mitigation actions (i.e. a pledge under the Convention or particular NAMAs or other types of actions) have been identified or implemented. If a country has developed a national mitigation or adaptation strategy or adopted climate change legislation, these developments should also be reported in this section. The detailed description of adaptation and mitigation measures should be left to the corresponding specific sections as outlined below.

3.1.4 Programmes containing measures to facilitate adequate adaption to climate change

This section of the national communication should provide more detailed information on the activities, measures and programmes that are being undertaken or planned in the country to adapt to climate change, including those undertaken on a regional basis in the context of the overall efforts to implement the Convention outlined in the initial sections, and could include information on:

- The Party's vulnerability to the adverse effects of climate change, including:
 - The scope of the vulnerability and adaptation assessment, including the identification of vulnerable areas that are most critical;
 - A description of the approaches, methodologies and tools used, including scenarios for the assessment of impacts of, and vulnerability and adaptation to, climate change, as well as any uncertainties inherent in these methodologies;

- For example, the use of the IPCC *Technical Guidelines for Assessing Climate Change Impacts and Adaptations*³⁰ and other approaches, such as the guidelines for national adaptation programmes of action,³¹ national adaptation plans or adaptation policy frameworks, other case studies, use of expert judgment and international literature;
- The main limitations of the vulnerability and adaptation assessment, including methodological, technical, institutional and financial limitations;
- Vulnerability to the impacts of, and adaptation to, climate change in key vulnerable areas. Information should include key findings, and direct and indirect effects arising from climate change, allowing for an integrated analysis of the country's vulnerability to climate change.
- Adaptation measures being taken to meet the specific needs and concerns arising from these adverse effects, including:
 - Evaluation of strategies and measures for adapting to climate change in key areas, including those which are of the highest priority;
 - Where relevant, Parties may report on the use of policy frameworks, such as national adaptation programmes, and plans and policies for developing and implementing adaptation strategies and measures.

Parties are also encouraged to report on how Article 4, paragraphs 8 and 9, of the Convention, as appropriate, are being implemented in the country (see Box 4).

3.1.5 Programmes containing measures to mitigate climate change

This section of the national communication should include information on the steps taken or envisaged and programmes and measures implemented or planned which contribute to mitigating climate change by addressing anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol, including, as appropriate, relevant information by key sector on:

- Methodologies;
- Baseline and mitigation scenarios and projections;
- Results;
- Programmes and measures implemented or planned;
- Institutional arrangements.

Similar to adaptation measures, the type and level of measures to mitigate climate change will vary greatly from country to country depending on the national circumstances and development priorities. Generally, the hierarchy of mitigation actions may include:

Box 4: Examples of measures to facilitate adequate adaptation reported in the national communications

Measures to facilitate adequate adaptation vary greatly depending on the national circumstances, socioeconomic structures, specific vulnerabilities and national priorities of countries. Ideally, these measures should be based on the national or sectoral vulnerability and adaptation assessments. Some examples of measures reported in this section include:

- **Steps taken by the government to facilitate adaptation in different sectors (e.g. water resources, agriculture);**
- **A summary of concrete actions taken in each sector, for example:**
 - Water resources: glacier monitoring, protection and conservation studies, and measures and policies;
 - Agriculture and forestry: vulnerability studies; design and implementation of concrete measures, such as changeover of crop varieties; improvement and adjustment of current irrigation practices; changes in irrigation systems; sustainable management of groundwater; tree planting; increasing the availability of water; more efficient and effective fertilization; and the management of herd irrigation pasture and livestock infrastructure.

30) <<http://www.ipcc-wg3.de/special-reports/files-images/ipcc-technical-guidelines-1994n.pdf>>.

31) FCCC/SBI/2007/27.

- National mitigation objectives (i.e. the reduction of GHG emissions below 'business as usual' (BAU) level or absolute emission reductions within a particular period);
- Programmes and policies;
- Sectoral initiatives;
- Mitigation projects.

The CGE has released updated detailed training materials on mitigation in the context of national communications, which are available at <<http://www.unfccc.int/349.php>>.

3.1.6 Other information

This section of the national communication may include information on:

- Steps undertaken to integrate climate change into relevant social, economic and environmental policies and actions;
- Activities relating to technology transfer;
- Climate change research and systematic observation programmes and activities;
- Research programmes containing measures to mitigate climate change; facilitating adequate adaptation to climate change; and containing activities related to the development of emission factors and activity data;
- Education, training and public awareness related to climate change;
- Capacity-building and efforts to promote information-sharing among and within countries and regions.

For further details, see the template developed by the CGE³² which aims to assist non Annex I Parties in determining the information that may be provided under this section of the national communication.

3.1.7 Constraints and gaps, and related financial, technical and capacity-building needs

In this section of the national communication, non-Annex I Parties should describe any constraints and gaps, and related financial, technical and capacity-building needs associated with the implementation of activities, measures and programmes envisaged under the Convention, and with the preparation and improvement of national

communications. They should also describe proposed and/or implemented activities for overcoming the above gaps and constraints, as well as financial resources and technical support needed for the preparation of the national communications and for the implementation of climate change activities provided by themselves, as well as those received from the Global Environment Facility (GEF), Parties included in Annex II to the Convention (Annex II Parties) or bilateral and multilateral institutions. Non-Annex I Parties are also encouraged to provide:

- A list of proposed mitigation projects for financing;
- Information on the opportunities for, as well as barriers to, the implementation of adaptation measures and, as appropriate, information on how support programmes from Annex II Parties are meeting their specific needs and concerns relating to vulnerability and adaptation to climate change;
- Information on development and transfer of technology, including information on assistance received and, as appropriate, on how they have been utilized;
- Information on capacity-building needs, including on other relevant needs and/or areas for capacity-building other than those mentioned in paragraphs 45, 47, 48 and 50 of the annex to decision 17/CP.8.

When providing information on this issue it is important to: (1) provide a clear definition of financial, technical and capacity-building needs; (2) avoid double counting; (3) define clearly the boundary and scope of the information provided; and (4) make a clear link, to the extent possible, between the need identified or support received and the corresponding adaptation and mitigation strategy and project.

32) <<http://www.ipcc-wg3.de/special-reports/files-images/ipcc-technical-guidelines-1994n.pdf>>.

3.2. BIENNIAL UPDATE REPORTS

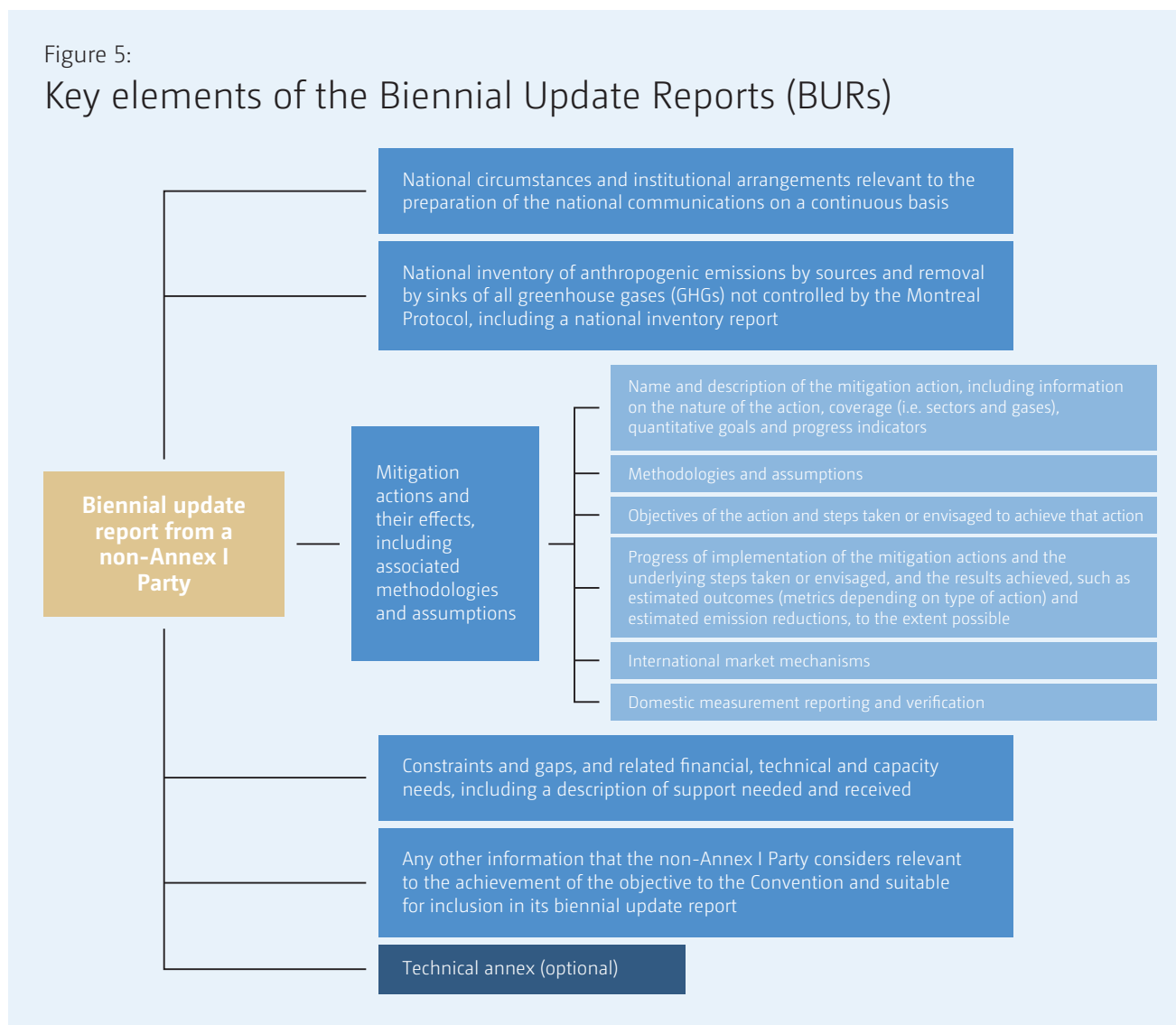
With the adoption of the Cancun Agreements at COP 16 in 2011, the reporting by non-Annex I Parties in national communications, including national GHG inventories, was enhanced to include information on mitigation actions and their effects, and support received.³³ The least developed country Parties (LDCs) and small island developing States (SIDS) have been given additional flexibility. It was also decided that developing countries, consistent with their capabilities and the level of support provided for reporting, should submit biennial update reports (BURs).

What are BURs?

BURs are reports to be submitted by non-Annex I Parties, containing updates of national GHG inventories, including a national inventory report and information on mitigation actions, needs and support received. Such reports provide updates on actions undertaken by a Party to implement the Convention, including the status of its GHG emissions and removals by sinks, as well as on the actions to reduce emissions or enhance sinks.

Figure 5:

Key elements of the Biennial Update Reports (BURs)



33) Decision 1/CP.16.

When and how often should BURs be prepared?

In 2012, COP 17 decided that the first BURs from non-Annex I Parties, consistent with their capabilities and the level of support provided for reporting, are to be submitted by December 2014. The subsequent BURs should be submitted every two years, either as a summary of parts of the national communication³⁴ in the year when the national communication is submitted or as a stand-alone update report. However, flexibility is given to LDCs and SIDS, which may submit such reports at their discretion.

What information should be included?

The scope of the BURs is to provide an update of the most recently submitted national communication and to provide additional information in relation to mitigation actions taken or envisaged to undertake and their effects

as well as support needed and received, covering the areas shown in Figure 5 above. COP 17 adopted the “UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention”, which are contained in annex III to decision 2/CP.17 (see Table 2).

The BURs should be submitted either as a summary of parts of the national communication in the year in which the national communication is submitted or as a stand-alone update report. This essentially means that, if a non-Annex I Party is due to submit a BUR in the same year as its national communication is due, the Party may summarize the relevant information from the national communication addressing the key BUR elements (as per Figure 5). In the case where the year of the BUR submission does not coincide with that of the national communication, a separate update report would need to be prepared. The LDCs and SIDS may submit BURs at their discretion.

Table 2:

Comparison of scope of reporting between the guidelines on national communications and the reporting guidelines on BURs

Biennial Update Reports	National Communications
<ul style="list-style-type: none"> • National circumstances and institutional arrangements relevant to the preparation of the national communications; • National Greenhouse Gas inventory, including a national inventory report • Mitigation actions and their effects including methodologies and assumptions; • Constraints and gaps, and related financial, technical and capacity needs; • Description of the support needed and received; • Information on the level of support received for the preparation of the BUR; • Information on domestic MRV; • Any other relevant information. 	<ul style="list-style-type: none"> • National circumstances; • National Greenhouse Gas Inventory; • General description of steps taken or envisaged to implement the Convention: <ul style="list-style-type: none"> - Programmes containing measures to facilitate adequate adaptation to climate change; - Programmes containing measures to mitigate climate change. • Other information considered relevant to the achievement of the objective of the convention: <ul style="list-style-type: none"> - Transfer of technologies; - Research and systematic observation; - Education, training and public awareness; - Capacity-building; - Information and networking. • Constraints and gaps, and related financial, technical and capacity needs.

³⁴) The summary of parts of the national communication should focus on the information contained in the section on the national circumstances and institutional arrangements, contain a national GHG inventory report, summarize the information related to mitigation actions, and the section on constraints, needs and support received in relation to mitigation actions, as discussed in more detail below.

What happens to the information provided?

The information provided in biennial update reports is subjected to a technical analysis by a team of technical experts under the international consultation and analysis process resulting in a summary report (see section 3.3 for further details).

The following sections provide a brief overview of the key elements of the BUR.

3.2.1 National circumstances and institutional arrangements relevant to the preparation of national communications on a continuous basis

Information within this section of the BUR updates the information contained in the latest submission of national communications reported in accordance with paragraphs 3–5 of the annex to decision 17/CP.8. It provides an opportunity for non-Annex I Parties to report on their institutional and legislative arrangements, as well as other national circumstances that exist within a country, that could impact the effectiveness and sustainability of the reporting process under the Convention.

This section of the BUR could contain the following information:

- The national circumstances, including national development priorities, and sustainable development objectives;
- The national institutional arrangements, including legal or official arrangements, established, or reinforced, to sustain the process of the preparation of national communications and biennial update reports on a regular basis.

In particular, this section may include information on the relationship of the institutional arrangements for the BUR with the broader climate change development process and other institutional arrangements related to the Convention. For example, Parties may wish to describe any adjustments or changes made to the existing or new institutional arrangements as a result of BURs (i.e. the establishment of new agencies or the formation of working groups versus increased frequency of meetings and/or

submission of information for the existing institutions), including how the agencies involved in the preparation of the BUR relate to those involved in the preparation of the national communications (i.e. information on which bodies coordinate the work for the BUR and for the national communication and which other agencies and players are involved); and any lessons learned or recommended practices. Parties may also report on the cost implications of the institutional arrangements process and on capacity-building needs in relation to that process.

Effective institutional arrangements are essential to the timeliness and quality of reporting, and given the enhanced frequency of reporting implied by the BUR, effective institutional arrangements become even more critical. Parties are encouraged to enhance the existing, or establish new, sustainable institutional arrangements so that they are robust and function on a continuous basis. There are multiple benefits, including enhanced coordination of activities, clarification of the relationships among critical institutions, an increased ability to meeting reporting requirements effectively and efficiently, enhanced national capacity, and sustainability of the reporting process.

Suitable institutional arrangements is one of the key factors determining a country's ability to measure, report and verify its emissions, as well as the actions to mitigate climate change and the support needed and received, and subsequently to deliver a BUR every two years. This may involve, if appropriate, building on existing institutions and/or establishing new arrangements, and may also require a transition from temporary operations to more permanent institutional arrangements to facilitate a sustained process involving permanent national teams.

Figure 6 shows the key steps necessary for establishing institutional arrangements to support the regular preparation of BURs, starting from planning (which includes a workplan and the BUR preparation instructions) through to evaluating lessons learned and identifying opportunities for improvement. It is important to identify relevant teams and organizations, establish coordination mechanisms, compile information and establish procedures to ensure systematic documentation and archiving of information, in order to enhance transparency and ensure the sustainability of the process.

Figure 6:
Main steps for establishing institutional
arrangements for BURs



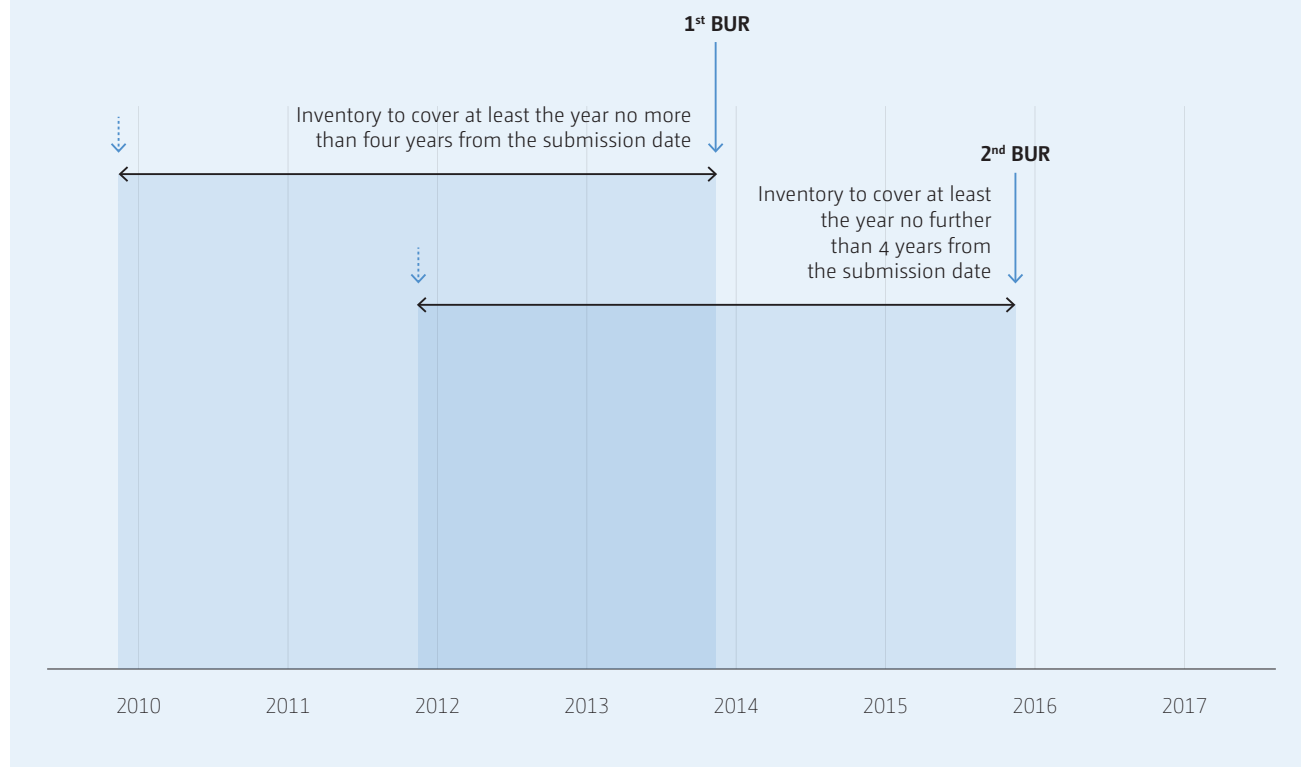
The CGE has published training materials on establishing national arrangements for preparation of BURs, which are available at: <http://unfccc.int/7915.php>. The training materials, which among other things, provide an overview of several examples that illustrate how developing countries have designed effective institutional arrangements to complete their NCs. These examples demonstrate the diversity of institutional arrangements that have been established across developing countries, while highlighting some of the overarching lessons learned and best practices that have emerged. They also include examples of the templates that can facilitate setting up national arrangements which can be adapted and used fitting the national circumstance.

3.2.2 National greenhouse gas inventories

The BUR guidelines provide additional requirements to those for the national GHG inventories historically applied to the national communications. In particular, this refers to the frequency of the reporting of inventory data and the years for which emissions data are to be presented.

In reporting their estimates of GHG emissions and removals by sinks of all GHGs not controlled by the Montreal Protocol, non-Annex I Parties are now required to prepare and submit a national inventory report, which should allow for the comprehensive reporting of information. This report essentially presents an update of the national

Figure 7:
Example of years, for which inventory should be reported
for Parties submitting their first BUR in 2014



GHG inventory. Its scope should be consistent with national capacity, time constraints, data availabilities and the level of support provided by developed country Parties for biennial update reporting. In preparing the national GHG inventories, including national inventory reports, non-Annex I Parties should use the methodologies prescribed by the latest UNFCCC guidelines for the preparation of national communications from non-Annex I Parties.³⁵

The first BUR submitted by non-Annex I Parties shall cover, at a minimum, the inventory for the calendar year no more than four years prior to the submission date, or more recent years if information is available, while subsequent BURs shall cover a calendar year that does not precede the submission date by more than four years (see Figure 7).

The updates of the national GHG inventories should contain updated data on activity levels using the Revised 1996

IPCC Guidelines, the IPCC good practice guidance and the IPCC good practice guidance for LULUCF.

The report should be structured as a summary or as an update of the information reported on national GHG inventories in the latest submission of the national communication (see Table 3) and should include:

- Table 1 contained in the annex to decision 17/CP.8, “National GHG inventory of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol and GHG precursors” and table 2 contained in the annex to decision 17/CP.8, “National GHG inventory of anthropogenic emissions of HFCs, PFCs and SF₆”.

³⁵ Decision 17/CP.8

Parties are also encouraged to include:

- Tables included in annex 3A.2 to the IPCC good practice guidance for LULUCF;
- Sectoral report tables annexed to the Revised 1996 IPCC Guidelines;
- Consistent time series back to the years reported in the previous national communication;
- Summary information tables of inventories for previous submission years reported in national communications (e.g. for 1994 and 2000);³⁶
- Additional or supporting information, including sector-specific information, in a technical annex.

This task of reporting information on national GHG inventories will be greatly facilitated by the use of the UNFCCC web-based GHG inventory software, which is, together with its user manual, available at <<http://unfccc.int/7627.php>>, or any another tools³⁷ that a Party may choose.

Table 3:

Comparison of requirements for reporting national GHG inventories in the reporting guidelines on national communications and the reporting guidelines on BURs

Elements	Biennial update reports	National communications
Methodology and metrics	<ul style="list-style-type: none"> • Methodologies established by the latest UNFCCC guidelines for the preparation of national communications (annex, para. 4) • Revised 1996 IPCC Guidelines, IPCC good practice guidance and IPCC good practice guidance for LULUCF (annex, para. 5) (“should”) • 1995 IPCC GWP values (“should”) 	<ul style="list-style-type: none"> • Revised 1996 IPCC Guidelines (“should”) • IPCC good practice guidance (“encouraged”) • 1995 IPCC GWP values (“should”)
Years	<ul style="list-style-type: none"> • The first (and the subsequent) BUR shall cover, at a minimum, the inventory for the calendar year no more than four years prior to the date of the submission, or more recent if available 	<ul style="list-style-type: none"> • Initial national communication: 1994, or alternatively 1990 (“shall”) • Second national communication: 2000 (“shall”) • LDCs (“at their discretion”)
Reporting	<ul style="list-style-type: none"> • National inventory report <ul style="list-style-type: none"> - Tables 1 and 2 (“should”) - Annex 3A.2 of the IPCC good practice guidance for LULUCF and the sectoral tables annexed to the Revised 1996 IPCC Guidelines (“encouraged”) - Summary information tables of inventories for previous submission years (e.g. for 1994 and 2000) (“encouraged”) - Additional or supporting information may be submitted in a technical annex (“encouraged”) - Time series – provide a consistent time series back to the years reported in the previous national communication (“encouraged”) 	<ul style="list-style-type: none"> • Chapter of national communication <ul style="list-style-type: none"> - Tables 1 and 2 (“encouraged”) - Sectoral tables and worksheets (“encouraged”) - Information on methodologies (“encouraged”)

³⁶) Applicable to non-Annex I Parties that have previously reported on national GHG inventories in the national communications.

³⁷) Some examples of other available tools are provided in 3.2.1.4 above.

3.2.3 Mitigation actions and their effects, including associated methodologies and assumptions

This section of the BUR requires the presentation of additional information to that historically required in the national communication as per the current guidelines.

In their national communications submitted before the adoption of the BUR guidelines, non-Annex I Parties were reporting on general measures to mitigate climate change. They are now required to report on specific mitigation actions and their effects (see Table 4).

Table 4:

Comparison of requirements for reporting mitigation-related information in the reporting guidelines on national communications and the reporting guidelines on BURs

Biennial update reports	National communications
<ul style="list-style-type: none"> • Non-Annex I Parties should provide information, in a tabular format, on actions to mitigate climate change, by addressing anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol. 	<ul style="list-style-type: none"> • Each Party shall provide information on the general descriptions of steps taken or envisaged for formulating, implementing, publishing and regularly updating national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol, and any other information they consider to be relevant to the achievement of the objective of the Convention and suitable for inclusion in their communications.
<ul style="list-style-type: none"> • For each mitigation action or groups of mitigation actions including, as appropriate, those listed in document FCCC/AW-GLCA/2011/INF.1, developing country Parties shall provide the following information to the extent possible: <ul style="list-style-type: none"> a) Name and description of the mitigation action, including information on the nature of the action, coverage (i.e. sectors and gases), quantitative goals and progress indicators; b) Information on methodologies and assumptions; c) Objectives of the action and steps taken or envisaged to achieve that action; d) Information on the progress of implementation of the mitigation actions and the underlying steps taken or envisaged, and the results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible; e) Information on international market mechanisms. • Parties should provide information on the description of domestic measurement, reporting and verification arrangements. 	<ul style="list-style-type: none"> • Based on national circumstances, non-Annex I Parties are encouraged to use whatever methods are available and appropriate in order to formulate and prioritize programmes containing measures to mitigate climate change; this should be done within the framework of sustainable development objectives, which should include social, economic and environmental factors. • In their assessment of these programmes on various sectors of the economy, non-Annex I Parties may use the appropriate technical resources.

As discussed above, mitigation actions by non-Annex I Parties may take different forms. In some cases, mitigation actions are formulated as economy-wide goals, expressed in various ways, (e.g. absolute or relative reduction in GHG emissions below ‘business-as-usual’ (BAU) level) or as specific policies and programmes in particular sectors to project-level activities (figure 8). As a part of the BUR, Parties do not need to report on each and every mitigation action or project they may have undertaken or planned to undertake. BURs should paint a broad picture of a country’s mitigation actions according to the level of detail at which the country implements the measure.

For example, some non-Annex I countries have made pledges under the Convention on nationally appropriate mitigation actions (NAMAs) that they will undertake³⁸ or have submitted their NAMAs to the registry. Information on such NAMAs could be included as part of the BURs. In these cases, it may be sufficient to present information that relates to the overall mitigation goals and also to specific NAMAs at the level of policies and programmes. The

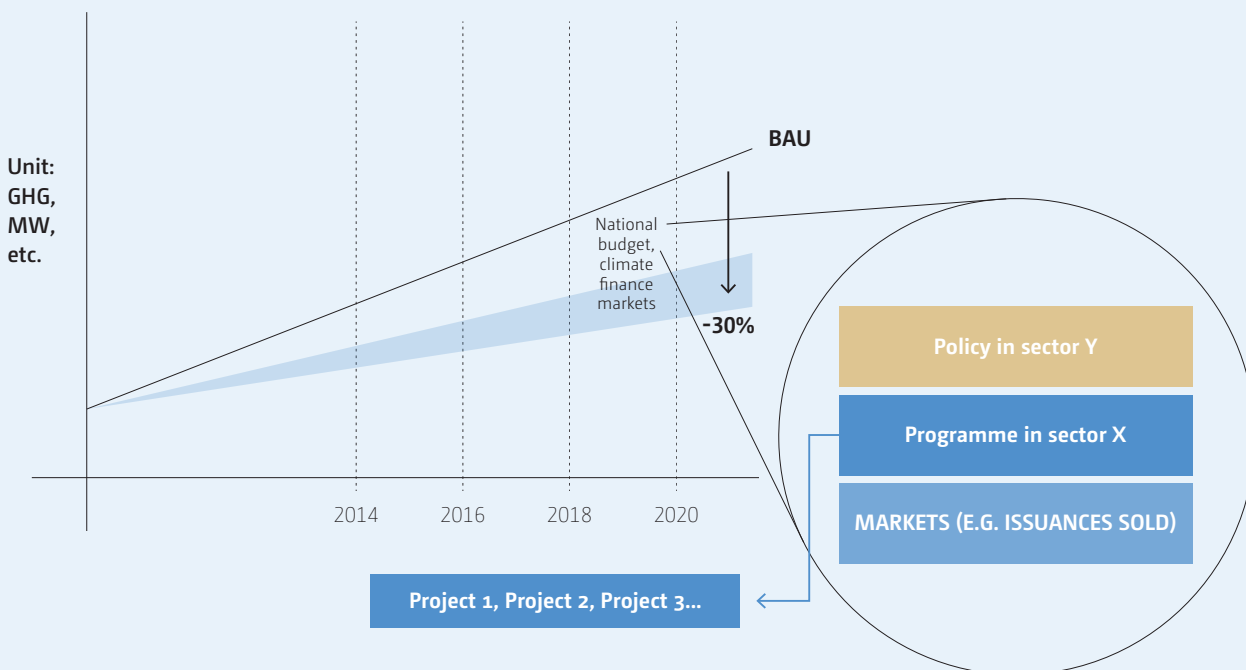
BUR should focus on the overall mitigation objective, the key assumptions and the subordinate actions (including policies and programmes). It is not necessary to provide information on each individual mitigation project that underpins NAMAs/mitigation policies and programmes.

However, the establishment of an overall mitigation goal is not mandatory for non-Annex I Parties and not all countries have established national or sectoral policies or NAMAs. Countries without broad mitigation goals in place may report on packages of projects in their BURs.

In the BUR, information on mitigation actions and their effects should be provided in a tabular format and include, to the extent possible, the type of data presented in Table 5. The columns from left to right provide a logical and transparent way of arriving at the evaluation of the outcomes/effects of the mitigation actions. This format, however, is an example; non-Annex I Parties have the flexibility to use the format which best reflects their national circumstances.

Figure 8:

Mitigation measures: from reduction below BAU to concrete projects



38) FCCC/SBI/2013/INF.12/Rev.2.

Table 5:

Information to be reported on mitigation actions and their effects in the BURs

Name of the action	Coverage	Quantitative goals / Objectives	Progress indicators	Methodologies/ Assumptions	Steps taken/ envisaged	Outcomes achieved	Estimated emission reductions
Name and description of the mitigation action	Sectors and gases	Objectives of the action	Metrics depend on the nature of the action, but should be linked to performance	Key assumptions and methods used to estimate the changes in emissions and other outcomes of mitigation actions	Steps taken or envisaged to achieve the action	Estimated results achieved based on established progress metrics	GHG reduction achieved and/or envisaged
Example 1: Decrease GHG emissions by X% by 2050 below 2005 levels	Reduction of GHG emissions (CO ₂ , CH ₄ , HFCs,) and enhancement of sinks, to be achieved through a combination of measures in the energy, transport, forestry, agriculture and industrial processes sectors	A set of policies and measures targeting each sector (list key target policies)	Institutional arrangements to implement mitigation Number of policies adopted and implemented for each sector Behavioural changes induced/ investment mobilized Emission reductions achieved	Key assumptions and methodologies, the same as those used for the mitigation assessment	Summary of the steps envisaged at the national level and in each sector	Progress achieved to date as per the indicators established (i.e. renewable energy policy adopted; energy efficiency standards implemented for new housing, etc.)	Estimated emission reductions achieved to date
Example 2: Increase renewable energy capacity (policy/ programme level)	CO ₂ reduction through increased share of renewable energy in the energy balance	Increase the share of solar energy to 15% of total energy generation	Actions to improve investment in the environment; share of renewable energy	Grid emissions factor; assumptions on energy demand	1. National renewable energy programme adopted 2. Feed-in-tariff introduced 3. Training for five commercial banks carried out	Two local banks introduced lending programmes for solar projects The share of renewable energy has risen to 10% of total energy generation	X Mt CO ₂ have been reduced Overall emission reduction of Y Mt CO ₂ is expected once the action is fully implemented
Example 3: Light bulb initiative (project-level)	CO ₂ emission reduction through decrease in residential electricity consumption	Reduce residential electricity demand through replacement of conventional bulbs with energy efficient bulbs. Replace 1 million bulbs in the period 2012–2020	Number of bulbs replaced	Details on emission factors, demographic and macroeconomic indicators and other key assumptions used in developing the emission scenarios	1. Project implementation office and monitoring arrangements established 2. Public education programme launched in 2012 3. In 2012–2013 200 thousand bulbs replaced	Impact on behavioural changes of population via education Projected financial savings to households through reduced electricity consumption Reduction in GHG emissions and conventional pollutants	Measures already implemented will achieve X% of GHG emission reductions by 2020 below the baseline Remaining measures to be implemented will achieve further Y% reduction in GHG emissions below the baseline by 2020

Activities under mitigation actions are assigned their own metrics, depending on the nature of the action, including GHG emission reductions or other sustainable development benefits. The choice of the metrics, both qualitative and quantitative, is a very important step in the process, as it essentially determines what is measured, and later reported and verified.

The information should include a qualitative description of sectors covered by the action and GHG gases addressed and objectives to be achieved. The latter can be qualitative (e.g. improving awareness of energy efficiency savings), and quantitative (e.g. providing training or educational materials to 2,000 households).

It is necessary to determine and describe qualitative and quantitative indicators that will be used to evaluate the progress in achieving the objective (i.e. the number of households trained). Progress indicators should be clear, specific, reasonably expected to be affected by the mitigation actions in question and quantifiable (see some examples in Table 6). In choosing progress indicators, it is important to consider whether reliable data can be collected on a regular basis at reasonable cost and to ensure that indicators are reported using rigorous and consistent definitions, data sets, collection procedures and methods.³⁹

The BUR should further include a qualitative description of the methods and key statistics on the macroeconomic indicators, assumptions on behavioural changes, and other data used in developing the scenarios for the baseline, evaluating current and future emissions. It should also contain information on the steps taken to achieve the objectives at the time of reporting (e.g. 1,000 households trained) and information on the qualitative and quantitative outcomes (e.g. GHG emission reductions and sustainable development benefits). This could include quantitative information based on the chosen progress metrics and a link to the Party's objectives regarding implementation of the Convention.

Emission reductions from the steps already implemented and the overall reductions expected once the measure is fully implemented can be reported in absolute terms or as a percentage reduction below a baseline. It is best to use the same metrics throughout the report. Furthermore, the BUR reporting guidelines encourage Parties to report on any information related to international market mechanisms which they consider suitable and relevant for reporting.

Table 6:

Examples of potential progress indicators for mitigation actions

Objective	Progress indicators
Measures against deforestation	Emission reduction (t CO ₂ eq)
Improving industrial and residential waste management	Efficiency of biogas generation per ton of waste treated Production of energy per ton of waste Number of jobs created Emission reduction (t CO ₂ eq)
Expansion of self-supply renewable energy systems	Renewable energy capacity installed (MW) Emission reduction (t CO ₂ eq) Number of jobs created Private sector finance leveraged (public funds/private funds)

³⁹ Source: Breidenich, C. 2011. *Improving Reporting of National Communications and GHG Inventories by Non-Annex I Parties under the Climate Convention*. Natural Resources Defense Council.

Non-Annex I Parties could also take the opportunity of preparing the BURs to include additional information on their mitigation actions. An example of this could include the following information covered under the UNFCCC NAMA Registry for each mitigation action:

- Overview;
- National implementing entity;
- Expected time frame for the implementation of the mitigation action;
- Currency;
- Cost;
- Support required for the implementation of the mitigation action;
- Estimated emission reductions;
- Other indicators;
- Other relevant information;
- Relevant national policy strategies, plans and programmes and/or other mitigation action;
- Attachments;
- Support received.

3.2.4 Information on domestic measurement, reporting and verification of domestically supported nationally appropriate mitigation actions

In the BURs, Parties should provide information on domestic MRV. COP 19 adopted the general guidelines

for domestic MRV of domestically supported NAMAs by developing country Parties,⁴⁰ which is discussed in detail in the next chapter.

Figure 9 presents the information on domestic MRV of domestically supported NAMAs that needs to be reported in the BUR as laid out in the guidelines.

When reporting on their domestic MRV in the BURs, non-Annex I Parties are encouraged to provide information on three key elements, including:

1. A description of the overall institutional arrangements, whether based on existing or new processes and systems (similar to the information presented in Table 1);
 - This includes information on the key domestic MRV processes, systems and arrangements, including institutional structures, legal and administrative framework, relevant information, methodologies and experts to be engaged. The guidelines encourage developing country Parties, where appropriate, to utilize existing processes, arrangements and systems. Where necessary, developing country Parties may choose to voluntarily set up new arrangements and processes for domestic MRV;

Figure 9:

Information on the domestic MRV of domestically supported NAMAs to be included in BURs

Institutions, entities, arrangements and systems involved in domestic MRV	<ul style="list-style-type: none"> • Recognize existing processes, arrangements or systems • Describe new processes, arrangements or systems established
Approach to measure domestically supported NAMAs	<ul style="list-style-type: none"> • Collection and management of relevant and available information • Documentation of methodologies
Approach to verify domestically supported NAMAs	<ul style="list-style-type: none"> • Experts engaged • Mechanisms

40) Decision 21/CP.19.

2. A description of the approach used to measure domestically supported NAMAs. This should include information on the systems for collection and management of relevant data and on how methodologies are being documented;
 - Similar to the information on mitigation programmes being submitted as part of the national communication, this section should describe the institutional arrangements in place to collect information and manage quality assurance (QA) and quality control (QC) through documentation of the methodologies and data sources used;
3. Finally, it should describe the approach used to conduct domestic verification of the information, including a description of experts engaged in the verification and the mechanisms of verification;
 - This may include information on how the experts involved in the independent evaluation of information/verification are being selected and appointed (e.g. is there an accreditation process involved, and if so, what does it entail).

3.2.5 Constraints and gaps, and related financial, technical and capacity-building needs, including a description of support needed and received

The information to be included in this section of the BUR could relate to both the preparation and submission of the BUR, as well as the implementation of climate change activities reported within the BUR. The national circumstances of non-Annex I Parties may vary, and as such the information to be included in this section could cover the barriers, challenges and bottlenecks, and related financial, technical and capacity-building needs (see Table 7).

3.2.5.1 Implementation of climate change activities

Potential financial constraints and gaps may, among others, include:

- Difficulties in mobilizing, accessing and delivering financial resources (e.g. understanding the different reporting requirements by donors such as in project proposals and financial reporting; fragmentation of and lack of harmonization of donor landscape);

- Difficulties in collecting information on financial resources available to implement activities that have multiple uses or climate change co-benefits;
- Technical constraints on how to collect, collate and store data on climate change finance;
- Institutional challenges relating to the coordination of climate change finance.

Technical and technological barriers and challenges may include:

- Difficulties encountered in accessing and mobilizing technical assistance;
- Constraints related to the collection, collation, classification, documentation and archiving of information on technical assistance available to implement activities that have multiple uses or climate change co-benefits;
- Institutional challenges relating to the coordination of technical support;
- Difficulties in accessing low-carbon technology;
- Lack of local skills to operate and service a particular technology.

Capacity-building related barriers, challenges and bottlenecks may include:

- Difficulties encountered in accessing and mobilizing capacity-building support related to:
 - The availability of trainers and demand-driven capacity-building;
 - The scope and depth of the training.
- Constraints related to the collection, collation, classification, documentation and archiving of information on capacity-building support available to implement activities, measures and programmes that have multiple uses or climate change co-benefits:
 - The availability of information on capacity-building support in a disaggregated manner;
 - Institutional challenges relating to the coordination of capacity-building support;
 - Challenges relating to enhancing and retaining capacity built.

Table 7:

Example of reporting on financial, technical and capacity-building needs

Technical and capacity-building needs				
	Status - ongoing - planned - completed	Support needed	Support received	Additional support needed
Action 1				
Action 2				
Financial needs				
	Status - ongoing - planned - completed	Support needed	Support received	Additional support needed
Action 1				
Action 2				
Technology transfer needs				
	Status - ongoing - planned - completed	Support needed	Support received	Additional support needed
Action 1				
Action 2				

In providing this information, Parties should take into account potential double counting. It is recommended that Parties report quantitatively, where possible, and use qualitative information where it is not possible to quantify. **In reporting on the support needed and received, Parties should, where possible, make a clear link to the mitigation actions that are reported in the BURs.**

3.2.6 Information on the level of support received to enable the preparation and submission of biennial update reports

Non-Annex I Parties could have multiple sources of financial and technical support for the implementation of their climate change activities, including for the preparation of BURs. The BURs should contain updated information on financial resources, technology transfer, capacity-building and technical support received from the GEF, Annex II Parties and other developed country Parties, the Green Climate Fund and multilateral institutions for activities relating to climate change, including for the preparation of the current BUR (see Table 8 for a potential format).

Table 8:
Example of the reporting format for information on financial resources, technology transfer, capacity-building and technical support received

Description of support received		GEF	Annex II & other developed country Parties	Multilateral institutions	Green Climate Fund	Other sources
Preparation of BURs	Financial resources					N/A
	Capacity- building					N/A
	Technical support					
	Technology transfer					
Activities contained in BURs	Financial resources					
	Capacity- building					
	Technical support					
	Technology transfer					

3.2.7 Any other information relevant to the achievement of the objective of the convention and suitable for inclusion in the biennial update report

Parties may include other information that they consider relevant. However, the information contained within the BUR should not duplicate what is reported in the most recent submission of the national communication but rather provide an update or progress, as well as new and additional information.

Parties have the option to provide additional technical information as technical annexes. Those Parties wishing to report REDD-plus for the purpose of obtaining results-based payment can use this section of the BUR to provide such information. This is discussed in greater detail in the following chapters.

3.3. INTERNATIONAL CONSULTATION AND ANALYSIS

This section provides information to help the reader understand the adopted modalities and guidelines for international consultation and analysis (ICA) and the composition, modalities and procedures for the team of technical experts (TTE).

What is ICA?

At COP 16 in 2010, Parties decided to conduct ICA of BURs from non-Annex I Parties under the Subsidiary Body for Implementation (SBI).⁴¹ This process aims to increase the transparency of mitigation actions and their effects and consists of two steps:

1. A technical analysis of the BUR by a TTE;
2. A facilitative sharing of views in the form of a workshop under the SBI.

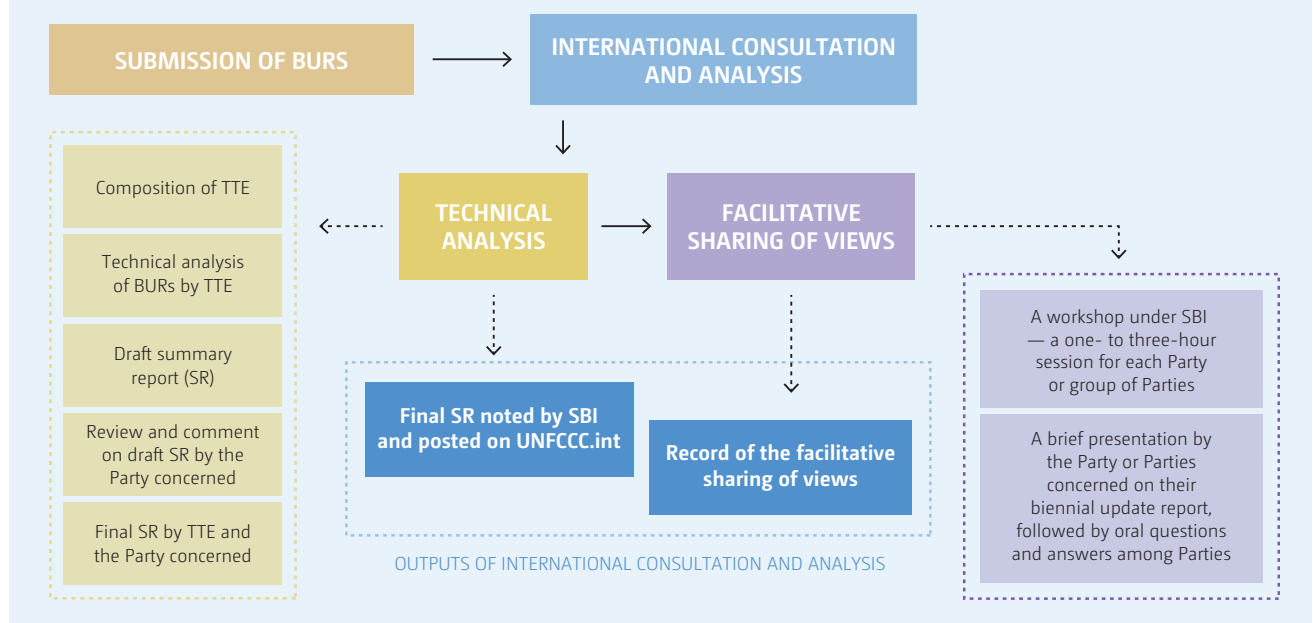
ICA is to be conducted in a manner that is non-intrusive, non-punitive and respectful of national sovereignty.

Discussion about the appropriateness of domestic policies and measures is not part of the ICA process. Effectively, what it means is that Parties can choose policies and measures to address climate change based on their domestic priorities. The choice of such measures would not be the subject to the ICA, which will rather focus on the information provided on the chosen policies and measures.

The modalities and guidelines for ICA were adopted at COP 17.⁴² COP 19 adopted a further decision on the composition, modalities and procedures of the TTE for undertaking the technical analysis of BURs under ICA.⁴³ The modalities and guidelines for ICA will be revised based on the experiences gained in the first round of ICA no later than in 2017. Figure 10 below shows the key elements of ICA and the following sections describe in more detail the current provisions of the above decisions and corresponding guidelines.

Figure 10:

Key elements of the International Consultation and Analysis process



41) Decision 1/CP.16.

42) Decision 2/CP.17

43) Decision 20/CP.19

ICA is a very new process, which is quite different from the compilation and synthesis of the national communications from non-Annex I Parties. While the primary objective of the ICA process is to enhance the transparency of mitigation actions, it is also expected to contribute towards the capacity-building of non-Annex I Parties leading to improvement in the quality of its BURs over the period of time.

When will ICA be conducted?

The first rounds of ICA will be conducted within six months of the submission of the first round of BURs by developing country Parties. As noted above, the first round of submission of BURs commences in December 2014. The frequency of participation in subsequent rounds of ICA by developing country Parties is determined by the frequency of the submission of BURs, which is normally every two years, with special flexibility for SIDs and LDCs, who may undergo ICA as a group of Parties at their discretion. However, an individual summary report will be prepared for each BUR analysed.

How will TTEs be composed and operate?

A TTE will be composed of experts nominated to the UNFCCC roster of experts, taking into consideration the expertise needed to cover the areas of information contained in the BUR and the national circumstances of the Party concerned.⁴⁴ It should include, as a high priority and to the extent available, at least one CGE member and up to one third of the TTE. For other experts on the TTE, priority will be given to experts who served as members of the CGE given their experience and familiarity with the national circumstances of developing countries.

Parties are invited to nominate technical experts with the relevant qualifications to the UNFCCC roster of experts, which will be maintained by the UNFCCC secretariat. In the selection of the members of the TTE, the secretariat will be guided by the CGE and shall report to the CGE on the composition of the TTEs on a semi-annual basis. The secretariat will provide administrative support to the TTE.

The CGE will develop and organize training programmes for nominated technical experts, taking into account the difficulties encountered by non-Annex I Parties in the preparation of their BURs. Once the CGE training programme is established, only those nominated experts

who have successfully completed the CGE training programme shall be eligible to serve in the TTE.

It is envisaged that each TTE shall be co-led by two experts: one from an Annex I Party and another from a non-Annex I Party. In composing the TTE, the following criteria need to be taken into account:

- Experts shall be nominated to the UNFCCC Roster of Experts and successfully completed this training programme for the TTE developed by the CGE;
- The overall composition of the expertise of the team should cover the areas of information contained in BUR, and as outlined in paragraph 3(a) of annex IV to decision 2/CP.17, taking into account the national circumstances of the Party concerned;
- A TTE shall include, as a high priority and to the extent available, at least one CGE member and up to one third of the TTE;
- Overall composition of the TTEs should be such that the majority of experts come from non-Annex I Parties;
- Geographical balance among the experts selections from non-Annex I and Annex I Parties;
- Experts shall neither be a national of the Party whose BUR is under analysis nor be nominated by that Party, nor have been involved in the preparation of the BUR under analysis;
- The same TTE shall not be involved in undertaking the technical analysis of successive BURs.

The exact number of the members to be included on a TTE is not clearly set in the decision. This is to allow for flexibility in the composition of the teams on a case by case basis. Further, the participating experts serve in their personal capacity.

As noted above, ICA and the TTE is a new process, which at the time of writing has not yet been tested. There will be a lot of learning-by-doing along the way and Parties will shape the process through experience. It is therefore advantageous for Parties, in particular those currently preparing their BURs, to participate actively in the process from the beginning.

What will the analysis of the BURs under the ICA entail?

An analysis by a team of technical experts (TTE)

The TTE will conduct a technical analysis of the BURs submitted by non-Annex I Parties, either as a summary

44) Decision 20/CP.19.

of parts of their national communications in the year in which the national communication is presented or as a stand-alone BUR, and any additional technical information that may be provided by the Party concerned. This will be conducted in consultation with the Party, and will result in an individual summary report for each BUR submitted and analysed.

In the course of the analysis, the TTE shall identify the extent, to which the BUR of the Party concerned includes the key elements of information, including:

- (a) national circumstances and institutional arrangements
- (b) the national GHG inventory report;
- (c) information on mitigation actions, including:
 - (i) a description of such actions;
 - (ii) an analysis of their impacts and the associated methodologies and assumptions;
 - (iii) the progress made in their implementation;
- (d) information on domestic MRV;
- (e) information on support received.

In consultation with the Party concerned, the TTE will identify capacity-building needs in order to facilitate the reporting of information in subsequent BURs and participation in ICA.

As shown in figure 11 below, the TTE shall complete a draft summary report within three months after the start of the technical analysis. The draft summary report will be

shared with the respective non-Annex I Party for review and comment, which needs to be provided within three months of its receipt. The TTE will then respond to and incorporate the comments provided and finalize, in consultation with the Party concerned, the summary report within three months of receipt of the comments. The summary report will be noted by the SBI in its conclusions and will be posted on the UNFCCC website.

In the course of a technical analysis, the Party concerned may voluntarily provide the TTE with additional technical information that can facilitate the technical analysis of its BUR.

Facilitative sharing of views

The SBI will, at regular intervals, convene a workshop for the facilitative sharing of views for all Parties for which there is a BUR and a final summary report. The facilitative exchange of views will consist of a one- to three-hour session for each non-Annex I Party or group of Parties. The exchange will be open to all Parties, all of whom will be allowed to submit written questions in advance. The session will consist of a brief presentation by the Party or Parties concerned on their BUR, followed by oral questions and answers among Parties.

The outcome of ICA will consist of the summary report by the TTE and the record of the facilitative sharing of views.

Figure 11:

The timeline for the preparation and finalisation of the summary report capturing outcomes of the technical analysis



3.4. TECHNICAL AND FINANCIAL SUPPORT

In order to assist developing countries in implementing MRV requirements, in particular in meeting the reporting requirements under the Convention, financial, technical and capacity-building support is being made available through a variety of channels.

3.4.1 Financial support

The Global Environment Facility (GEF), as an operating entity of the Financial Mechanism of the Convention, provides financial support for the preparation of national communications and BURs in accordance with guidance from the COP to non-Annex I Parties either through its agencies (UNDP, UNEP and the World Bank) or directly (since 2011). Some bilateral and multilateral organizations, agencies and programmes also provide financial and technical support to many non-Annex I Parties.

Non-Annex I Parties are eligible to access up to USD 500,000 through a GEF agency or via direct access from the climate change focal area set aside. In order to apply for the support, Parties need to fill out a project proposal template,

outlining the description of the project, the status of the previous national communications, activities and budget, and institutional arrangements for implementation.

In April 2012, the “GEF policy guidelines for the financing of biennial update reports for Parties not included in Annex I to the United Nations Framework Convention on Climate Change” were adopted,⁴⁵ All non-Annex I Parties, including LDCs and SIDs who may submit BURs at their discretion, will be eligible to receive financing for the preparation of BURs.

For the BURs, countries can access up to USD 352,000 through a GEF agency or via direct access. The funds for the preparation of BURs can be accessed either as a stand-alone project or as a component of a national communications project.

For those Parties that wish to work with GEF agencies to complete the BURs, they can submit project proposals using the current enabling activities template, which can be accessed on the GEF website.⁴⁶



45) <http://www.thegef.org/gef/guideline/biennial_update_reports_parties_UNFCCC>.

46) <<http://www.thegef.org/gef/content/gef-5-enabling-activity-template-sept-2011>>.

For countries that wish to use the direct access modality, they can submit project proposals using the direct access template, which can also be found on the GEF website.

3.4.2 Technical support

The main channel for the provision of technical support in relation to MRV is the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE).

In 1999, COP 5 established the CGE in order to improve the process of the preparation of national communications by non-Annex I Parties. After a gap of three years, the CGE was reconstituted for a period of three years from 2010 to 2012. The CGE was mandated to continue contributing to improving the process of preparation of national communications from non-Annex I Parties by providing technical advice and support and therefore enhancing the capacity of such Parties to prepare their national communications.

COP 19 continued the term of the CGE for a period of five years from 2014 to 2018 and revised the terms of reference of the CGE to include the following functions:

- a) Identifying and providing technical assistance regarding problems and constraints that have affected the process of and the preparation of national communications and BURs by non-Annex I Parties
- b) Providing technical assistance and support to non-Annex I Parties to facilitate the process of and the preparation of their national communications and BURs;⁴⁷
- c) Providing technical advice to non-Annex I Parties to facilitate the development and long-term sustainability of processes, of the preparation of national communications and BURs, including the elaboration of appropriate institutional arrangements and the establishment and maintenance of national technical teams, for the preparation of national communications and BURs, including GHG inventories, on a continuous basis;
- d) Providing recommendations, as appropriate, on elements to be considered in a future revision of the guidelines for the preparation of national communications and BURs from non-Annex I Parties, taking into account the difficulties encountered by non-Annex I Parties in the preparation of their national communications and BURs;

- e) Providing technical advice and support to Parties, upon request, and information on existing activities and programmes, including bilateral, regional and multilateral sources of financial and technical assistance, to facilitate and support the preparation of national communications and BURs by non-Annex I Parties;
- f) Providing technical advice and support to Parties, upon request, on the provision of information on steps to integrate climate change considerations into relevant social, economic and environmental policies and actions, in accordance with Article 4, paragraph 1(f), of the Convention;
- g) Providing information and technical advice based on, where possible, lessons learned and best practices in the process of and the preparation of national communications and BURs by non-Annex I Parties, including in relation to finance and other support available;
- h) Providing guidance and periodic advice to the secretariat to assist it in fulfilling the selection criteria for the composition of the TTE;⁴⁸
- i) (Developing and organizing, with the assistance of the UNFCCC secretariat, appropriate training programmes for nominated technical experts, based on the most updated training materials of the CGE, with a view to improving the technical analysis, taking into account the difficulties encountered by non-Annex I Parties in the preparation of their BURs.

The work of the CGE is facilitated by the UNFCCC secretariat. One of the functions of the secretariat is to facilitate assistance to non-Annex I Parties in preparing their national communications and, more recently, their BURs. This includes facilitating the work of the CGE, the organization of workshops, collaboration with bilateral and multilateral support programmes, the dissemination of information through participation in regional workshops and expert group meetings, promoting information exchange, and capacity-building.

47) In accordance with the "Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention" contained in the annex to decision 17/CP.8, and the "UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention" contained in annex III to decision 2/CP.17.

48) "...in accordance with decision 20/CP.19, annex, paragraphs 3–5, taking also into account the reports provided by the secretariat in this regard on a semi-annual basis;"

3.5. KEY ELEMENTS OF NATIONAL MRV FRAMEWORKS

This chapter outlines the key requirements of and guidelines for domestic MRV frameworks adopted internationally and what it entails in terms of their domestic implementation.

At the national level, the implementation of the MRV framework covers two main areas:

- Development of the domestic framework for MRV, based on the guidelines for MRV of domestically supported NAMAs;

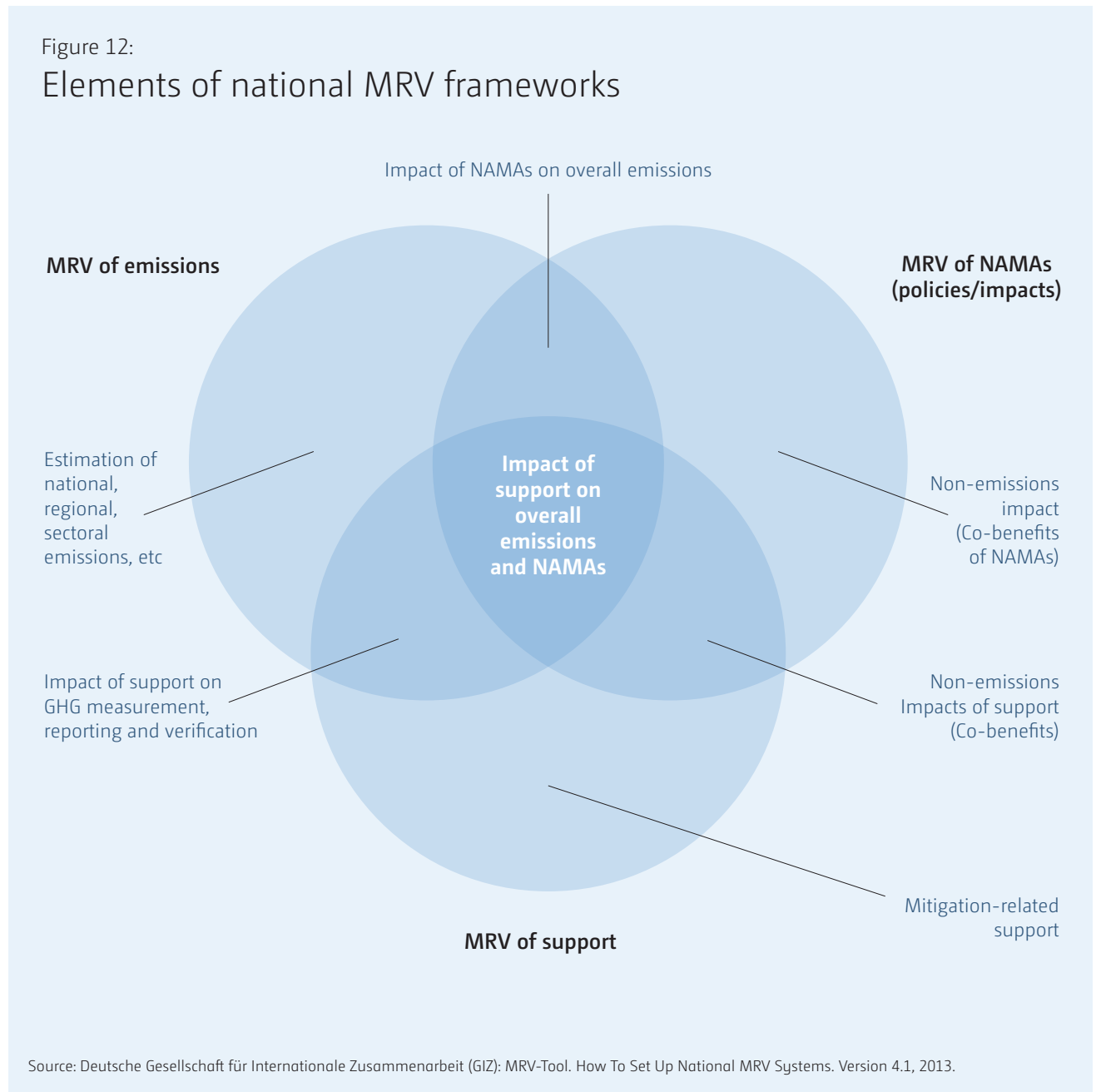
- Implementation of the international MRV requirements, discussed in chapter 2 above, such as measurement and reporting through the national communications and BURs.

Box 6 provides a snapshot of the elements under the current MRV framework that are measured, reported and verified and the means through which this occurs.

Box 5: Overview of the elements subject to MRV under the current international framework

- **What is measured:**
 - GHG emissions and removals by sinks;
 - Emission reductions (or enhancement of removals by sinks) associated with mitigation actions compared to a baseline scenario;
 - Progress in achieving climate change mitigation and adaptation (i.e. GHG emission reductions or enhancement of sinks and reduction in vulnerability), achievement of sustainable development goals and co-benefits;
 - Support received (finance, technology and capacity-building);
 - Progress with implementation of the mitigation actions.
- **What is reported:**
 - Data on GHG emissions and removals by sinks (inventory as part of the national communication and inventory update report as part of the BUR);
 - Data on emission reductions (or enhancements of removals by sinks) associated with mitigation actions compared to a baseline scenario (BURs, national communications);
 - Progress with implementation of the mitigation actions (BURs, national communications);
 - Key assumptions and methodologies;
 - Sustainability objectives, coverage, institutional arrangements and activities (in the national communications and BURs);
 - Information on constraints and gaps as well as support needed and received.
- **What is verified:**
 - All quantitative and qualitative information reported, in the BUR, on national GHG emissions and removals, mitigation actions and their effects, and support needed and received;
 - Data may be verified through national MRV and through ICA, where appropriate.

The interactions among the various elements of the national MRV framework and the key information that is provided under each of the elements is presented in Figure 12.

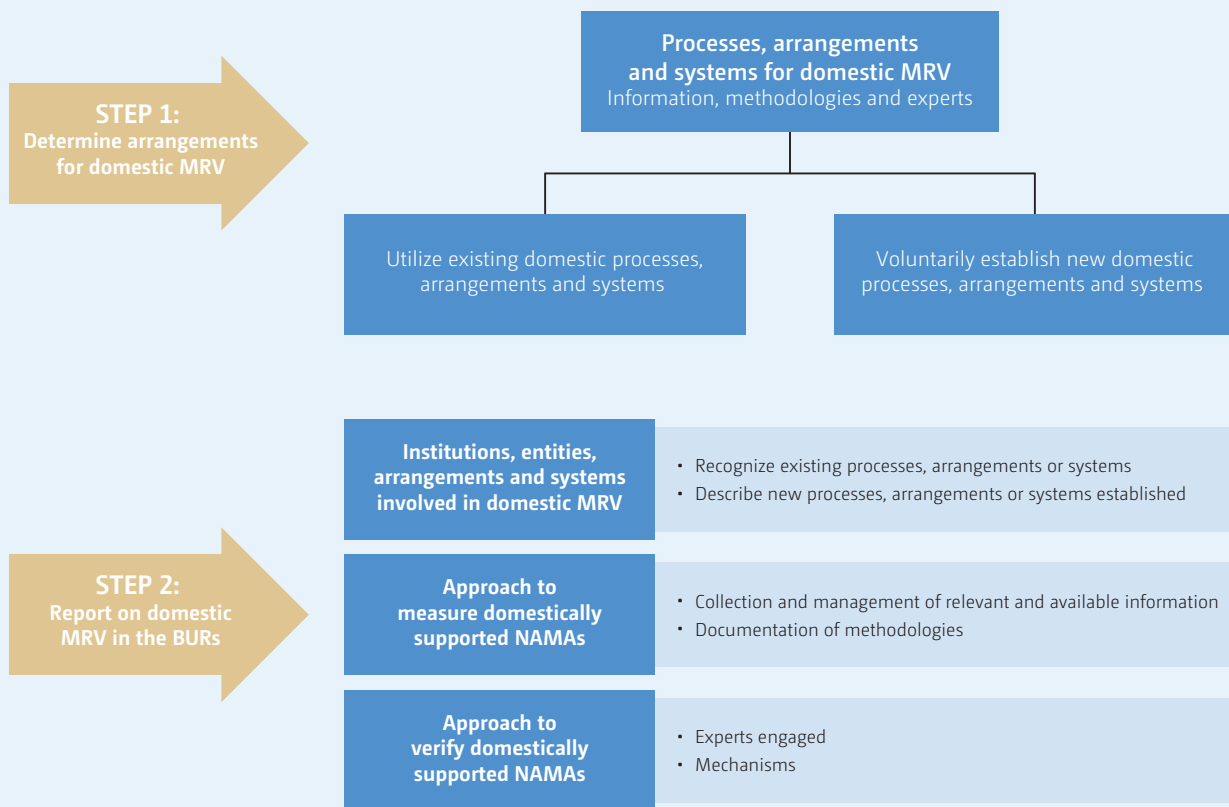


3.6. DOMESTIC MRV OF DOMESTICALLY SUPPORTED NAMAS

As noted above, the domestic MRV framework for domestically supported NAMAs should be guided by the guidelines adopted by COP 19.⁴⁹ Application of these guidelines for developing country Parties is voluntary. The guidelines are based on the principles of a voluntary, pragmatic, non-prescriptive, non-intrusive and country-driven approach. They take into account the national circumstances and national priorities, respect the diversity of NAMAs, build on existing domestic systems and capacities, recognize

existing domestic MRV frameworks and promote a cost-effective approach. Their purpose is to provide general guidance on how developing country Parties may describe the domestic MRV of domestically supported NAMAs. These guidelines could help countries to set up their national MRV frameworks for policies and measures based on existing domestic processes, arrangements, methodologies and expertise, as well as to determine the information best suited for reporting on domestic MRV in the BURs.

Figure 13:
Key elements of the guidelines for domestic MRV of domestically supported NAMAs



49) Decision 21/CP.19.

Figure 13 presents the approach to domestic MRV of domestically supported NAMAs laid out in the guidelines.

The first step in setting up the domestic MRV framework is to determine the key processes, systems and arrangements, including institutional structures, relevant information, methodologies and experts to be engaged.

The guidelines encourage developing country Parties, wherever appropriate, to utilize existing processes, arrangements and systems. Where necessary, developing country Parties may choose to voluntarily set up new

arrangements and processes for domestic MRV. Figure 14: presents the main objectives for developing existing or setting up new institutional arrangements for MRV.

There are no specific guidelines on the detailed institutional set-up for MRV, since it will depend on the national circumstances and existing institutional arrangements and capacities of a particular country. At a general level, the institutional arrangements should cover the functions discussed in chapter 2 above, from planning through to submission of reports (see Figure 15).

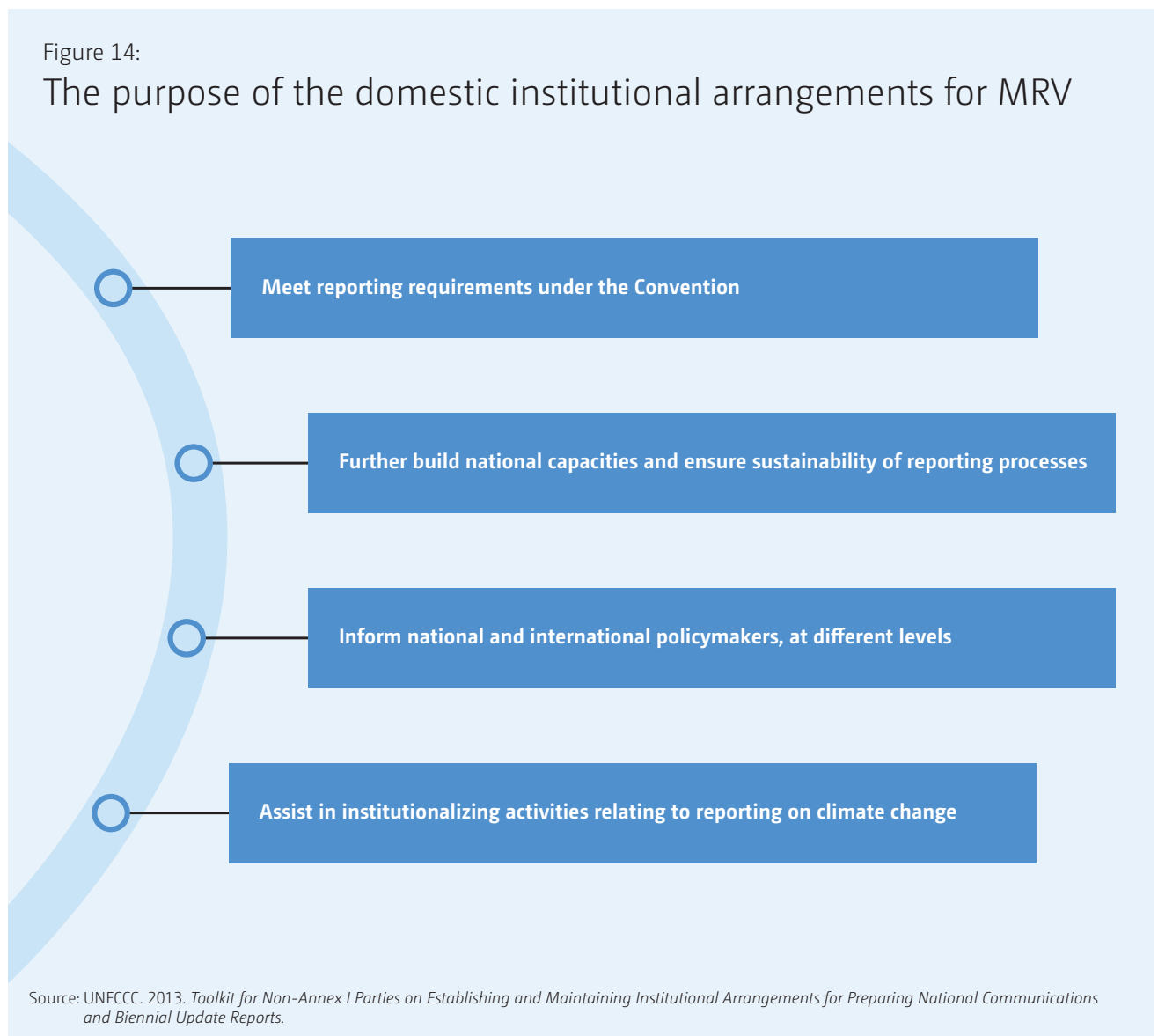


Figure 15:
Key elements of the domestic institutional arrangements for MRV



Source: UNFCCC. 2013. *Toolkit for Non-Annex I Parties on Establishing and Maintaining Institutional Arrangements for Preparing National Communications and Biennial Update Reports*.

Based on the experience to date, sustainable institutional arrangements for MRV include the following key elements:

- Establishing national legal/formal arrangements;
- Choosing and maintaining an appropriate coordination body;
- In-country institutional and technical capacity-building;
- Mechanism for stakeholder involvement.

Such institutional arrangements should ensure representation and effective involvement of all key sectors and stakeholders.

For more information on setting up institutional arrangements for MRV, see the UNFCCC Toolkit for Non-Annex I Parties on Establishing and Maintaining Institutional Arrangements for Preparing National Communications and Biennial Update Reports.

As the second step, when reporting on their domestic MRV in the BURs, developing country Parties are encouraged to provide information on three key elements, including a description of the:

1. Overall institutional arrangements, whether based on existing or new processes and systems (similar to the information presented in Table 1);
2. Approach used to measure domestically supported NAMAs. This should include information on the systems for collection and management of relevant data and on how methodologies are being documented;
3. Approach used for domestic verification of the information, including a description of the experts that are engaged in the verification and the mechanisms for verification.

Both internationally and domestically supported NAMAs may be subjected to the domestic MRV and can be reported as a part of the mitigation actions within the BURs.

3.7. MRV FOR REDD-PLUS ACTIVITIES

3.7.1 Context

COP 16 adopted a decision on policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries, also referred to as REDD-plus.⁵⁰

According to this and subsequent decisions by the COP, developing country Parties are encouraged to contribute to mitigation actions in the forestry sector by undertaking the following activities (referred to below as REDD-plus activities):

- Reducing emissions from deforestation;
- Reducing emissions from forest degradation;
- Conservation of forest carbon stocks;
- Sustainable management of forests;
- Enhancement of forest carbon stocks.

These activities should be country-driven, correspond to national development priorities, circumstances and capabilities, and should respect sovereignty. Furthermore, they should be implemented in phases and evolve into results-based actions that should be fully measured, reported

and verified, and be supported by adequate and predictable financial and technology support, including support for capacity-building, and be consistent with the objective of environmental integrity and take into account the multiple functions of forests and other ecosystems (see Box 5).⁵¹

Developing country Parties aiming to undertake REDD-plus activities in the context of the provision of adequate and predictable support, including financial resources and technical and technological support, should develop the following elements:⁵⁴

- A national strategy or action plan;
- A national forest reference⁵⁵ emission level and/or forest reference level or, as an interim measure, subnational forest reference emission levels and/or forest reference levels;
- A robust and transparent national forest monitoring system for the measurement and reporting of the activities referred to above, with subnational measurement and reporting as an interim measure, in accordance with the national circumstances;
- A system for providing information on how the safeguards for REDD-plus activities (see Box 6) are being addressed and respected.

Box 6: Safeguards for REDD-plus activities

In implementing the REDD-plus activities, the following safeguards should be promoted and supported.⁵²

- That actions complement or are consistent with the objectives of national forest programmes and relevant international conventions and agreements;
- Transparent and effective national forest governance structures, taking into account national legislation and sovereignty;
- Respect for the knowledge and rights of indigenous peoples and members of local communities;⁵³
- The full and effective participation of relevant stakeholders, in particular indigenous peoples and local communities;
- That actions are consistent with the conservation of natural forests and biological diversity, ensuring that the actions are not used for the conversion of natural forests, but are instead used to incentivize the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits;
- Actions to address the risks of reversals;
- Actions to reduce displacement of emissions.

50) Decision 1/CP.16, paragraphs 68–79 and appendix I.

51) Appendix I to decision 1/CP.16.

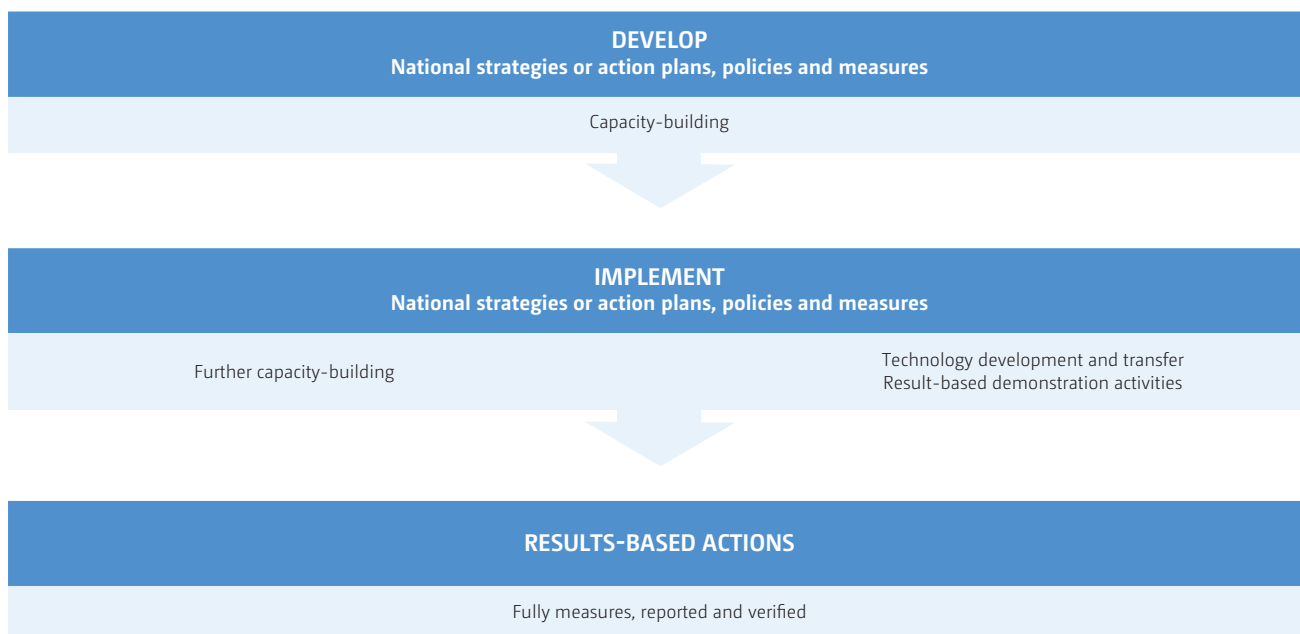
52) Appendix I to decision 1/CP.16.

53) "...by taking into account relevant international obligations, national circumstances and laws, and noting that the United Nations General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples."

54) Decision 1/CP.16.

55) In accordance with the national circumstances, the national forest reference emission levels and/or forest reference levels could be a combination of subnational forest reference emission levels and/or forest reference levels.

Figure 16:
Phased approach to REDD-plus activities



The activities undertaken by Parties should be implemented in phases (see Figure 16), beginning with the development of national strategies or action plans, policies and measures, and capacity-building, followed by the implementation of national policies and measures and national strategies or action plans that could involve further capacity-building, technology development and transfer and results-based demonstration activities, and evolving into results-based actions that should be fully measured, reported and verified.

Developing countries seeking to obtain and receive results-based payments⁵⁶ should have all of the elements in place and should provide the most recent summary of information on how all of the safeguards for REDD-plus have been addressed and respected before they can receive results-based payments. COP 19, as part of the Warsaw Framework for REDD-plus, agreed that such a summary of information on how all of the safeguards for the REDD-plus activities mentioned above⁵⁷ are being addressed and respected throughout the implementation of the activities could be provided, on a voluntary basis, via the web platform on the UNFCCC website. It also decided that developing country Parties should start providing

such a summary in their national communication or communication channel, including via the web platform on the UNFCCC website after the start of the implementation of REDD-plus activities. The frequency of subsequent presentations of the summary of information should be consistent with the provisions for submissions of national communications from non-Annex I Parties and, on a voluntary basis, via the web platform on the UNFCCC website.

3.7.2 Modalities for MRV for REDD-plus activities

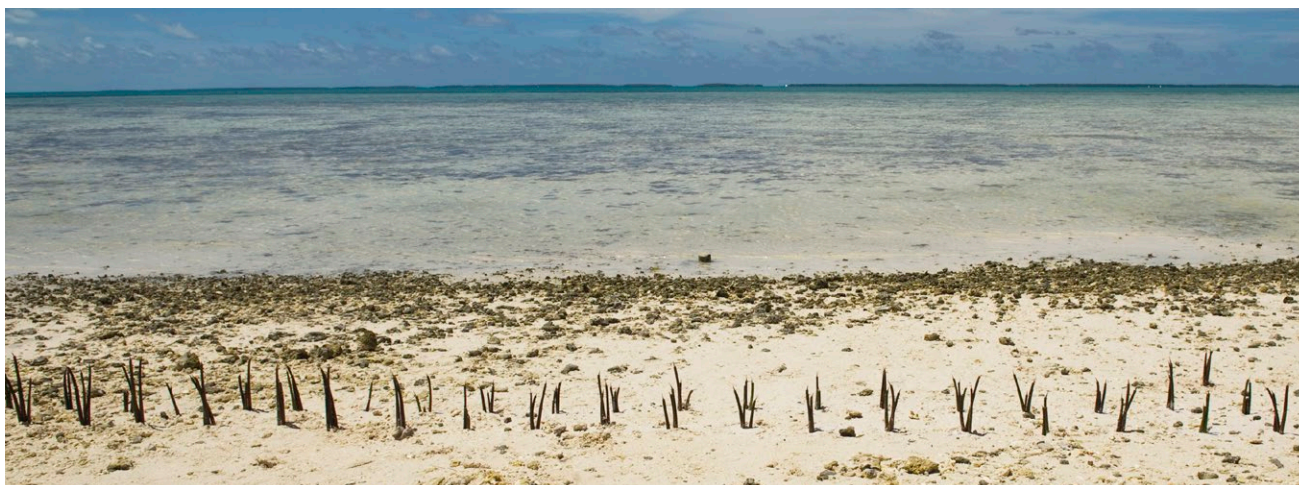
As noted above, results-based REDD-plus activities for which payments are being sought, need to undergo international MRV. COP 19 decided that MRV for anthropogenic forest-related emissions by sources and removals by sinks, forest carbon stocks, and forest carbon stock and forest-area changes resulting from the implementation of REDD-plus activities needs to be consistent with the methodological guidance for REDD-plus activities,⁵⁸ and any guidance on MRV of NAMAs by developing country Parties.⁵⁹ Therefore, the existing provisions on MRV for NAMAs, discussed above, will also apply to results-based REDD-plus activities seeking support.

56) Decision 2/CP.17, paragraph 64.

57) Decision 1/CP.16, appendix I.

58) Decision 4/CP.15.

59) Decision 14/CP.19.



The data and information used in relation to the REDD-plus activities should be transparent and consistent over time and with the established forest reference emission levels and/or forest reference levels.⁶⁰ The results of the REDD-plus activities should be measured against the forest reference emission levels and/or forest reference levels and should be expressed in tonnes of carbon dioxide equivalent per year.⁶¹

Developing countries seeking to receive payments for results-based REDD-plus actions should include this information as a technical annex under the “Additional relevant information” section of the BUR. Additional flexibility is given to the LDCs and SIDs.⁶² Submission of this technical annex is voluntary and in the context of results-based payments.⁶³ The data and information provided in the technical annex should be consistent with the methodological guidance⁶⁴ and contain the information presented in Table 9 as per the guidelines on MRV for REDD-plus.⁶⁵

In reporting on REDD-plus in their BURs, Parties should provide summary information containing each corresponding assessed forest reference emission level and/or forest reference level, as well as other key information on the results of activities and a description of the institutional arrangements (see Table 9).

If required, upon the request by a developing country seeking to receive payments for results-based actions, two LULUCF experts from the UNFCCC roster of experts (one each from a developing country and a developed country Party), will be included among the members selected for the team of technical experts (TTE) conducting the assessment of the BUR as part of ICA (as discussed in chapter 2).

As part of the technical analysis of the BUR, the TTE shall analyse the extent to which:

- There is consistency in methodologies, definitions, comprehensiveness and the information provided between the assessed reference level and the results of the implementation of the REDD-plus activities;
- The data and information provided in the technical annex is transparent, consistent, complete and accurate, and is consistent with the methodological guidelines on REDD-plus;
- The results are accurate, to the extent possible.

The Party that submitted the technical annex may interact with the TTE during the analysis of its technical annex to provide clarifications and additional information. The two LULUCF experts referred to above may seek clarifications on the technical annex on the REDD-plus actions and the Party should provide clarifications to the extent possible. These LULUCF experts will develop, under their collective responsibility, a technical report to be published by the secretariat via the web platform on the UNFCCC website, containing:

- The technical annex;
- The analysis of the technical annex;
- Areas for technical improvement identified;
- Any comments and/or responses by the Party concerned, including areas for further improvement and capacity-building needs.

60) Decision 1/CP.16, paragraph 71(b) and (c), and decision 12/CP.17, chapter II.

61) Decision 12/CP.17, paragraph 7.

62) Decision 14/CP.19.

63) Decision 14/CP.19.

64) Decisions 4/CP.15 and 12/CP.17.

65) Decision 14/CP.19, annex.

Table 9:

Elements to be included in the technical annex of the BUR on the REDD-plus activities⁶⁶

Information to be reported	Metrics
The assessed forest reference emission level and/or forest reference level	Tonnes of carbon dioxide equivalent per year (CO ₂ eq)
The REDD-plus activity or activities included in the forest reference emission level and/or forest reference level	List of activities, namely: <ul style="list-style-type: none"> • Reducing emissions from deforestation; • Reducing emissions from forest degradation; • Conservation of forest carbon stocks; • Sustainable management of forests; • Enhancement of forest carbon stocks.
The territorial forest area covered	Hectares or other measure of area
The date of the forest reference emission level and/or forest reference level submission and the date of the final technical assessment report	Dates
The period of the assessed forest reference emission level and/or forest reference level	Years
Results of REDD-plus activities, consistent with the assessed forest reference emission level and/or forest reference level	Tonnes of CO ₂ eq per year
Demonstration that the methodologies used to produce the results are consistent with those used to establish the assessed forest reference emission level and/or forest reference level	A description of the methodologies and an evaluation of their consistency
A description of national forest monitoring systems and the institutional roles and responsibilities for measuring, reporting and verifying the results	A description of the systems. Information could be reported in a similar way as the description of the overall MRV system in the national communications (see Table 1)
Necessary information that allows for the reconstruction of the results	A description of the key methodologies, assumptions and data sources used
A description of how the following guidance has been taken into the account: ⁶⁷ <ul style="list-style-type: none"> • The use of the most recent IPCC guidance and guidelines adopted or encouraged by the COP as a basis for estimating anthropogenic forest-related GHG emissions by sources and removals by sinks, forest carbon stocks and forest-area changes; • The guidance on national (and, if appropriate, subnational) forest monitoring systems 	A description of the use of the IPCC guidance and other relevant methodologies A description of how the guidance on national and subnational forest monitoring systems has been applied, including: <ul style="list-style-type: none"> • To what extent remote sensing and ground-based forest carbon inventory approaches and the combination thereof have been applied; • A description of the provisions for ensuring transparency and consistency, and reducing uncertainty

⁶⁶ Annex to decision 14/CP.19.

⁶⁷ Guidance contained in decision 4/CP.15, paragraph 1(c) and (d).

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