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UNEP

Understanding the Paris Agreement: analysing the reporting requirements under the enhanced transparency framework

October 2016

United Nations Environment Programme

FIRM Facilitating Implementation and Readiness for Mitigation

25 YEARS 2016 UNEP DTU PARTNERSHIP

UNEP

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Understanding the Paris agreement:

Analysing the reporting requirements under the enhanced transparency framework

OCTOBER 2016

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UNEP DTU PARTNERSHIP, DENMARK

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Content

Page

4 **ABBREVIATIONS**

5 **INTRODUCTION**

8 **CHAPTER 1**
UNDERSTANDING THE ENHANCED TRANSPARENCY FRAMEWORK ESTABLISHED UNDER THE PARIS AGREEMENT

8 1.1 Existing MRV requirements of national goals under UNFCCC

10 1.2 Analysis of the provisions of the Paris Agreement on the Transparency Framework

15 **CHAPTER 2**
INFORMATION TO BE REPORTED IN ORDER TO MEET THE REPORTING REQUIREMENTS UNDER THE NEW TRANSPARENCY FRAMEWORK

15 2.1 Categorization of INDCs

17 2.2 What information is needed to meet the reporting requirements under the Paris Agreement?

17 2.2.1 Information for tracking progress in implementing NDCs

20 2.2.2 Frequency of reporting under the Paris Agreement

23 2.2.3 Recommendations on reporting and information for tracking progress in implementing NDCs

23 2.2.4 Information for assessing collective progress in achieving the purpose of the Paris Agreement

26 2.2.5 Recommendations on the information to be included in the NDCs in order to assess collective progress in achieving the purpose of the Paris Agreement

28 **CHAPTER 3**
DOUBLE-COUNTING, USE OF OFFSETS AND TRANSPARENCY FRAMEWORK

Abbreviations

BAU	Business as usual
BUR	Biennial Update Report
CBDR&RC	Common but Differentiated Responsibilities and Respective Capabilities
CBIT	Capacity Building Initiative for Transparency
IAR	International Assessment and Review
ICA	International Consultation and Analysis
INDC	Intended Nationally Determined Contribution
LDC	Least Developed Countries
LYAP	Last Year of the Accounting Period
MRV	Measurement, Reporting and Verification
NC	National Communication
NDC	Nationally Determined Contribution
SIDS	Small Island Developing States
WAM	With Additional Measures
WM	With Measures
WOM	Without Measures

Introduction

At the Paris climate conference (COP-21) in December 2015, the Conference of the Parties decided to adopt the Paris Agreement under the United Nations Framework Convention on Climate Change. This was the first time that 195 Parties had agreed on a universal, legally binding climate instrument. The Agreement will enter into force on the thirtieth day after the date on which at least 55 Parties to the Convention, accounting in total for at least an estimated 55 percent of total global greenhouse gas emissions, will have deposited their instruments of ratification/acceptance/approval/accession. As of 5th October 2016, 74 Parties had ratified the Agreement, accounting for 58.82% of global GHG emissions.[1] The Paris Agreement will thus enter into force on 4th November 2016.

The Paris Agreement aims to strengthen the global response to the threat of climate change in the context of sustainable development, taking into account the principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR&RC) in the light of different national circumstances. By setting a long-term temperature goal – defined as '*Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels*' – the Agreement paves the way for mitigation efforts to be undertaken by all Parties. It therefore also sets out the need '*to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with the best available science*'.

Decision 1/CP.21 of the Conference of the Parties reiterates the invitation to all Parties that have not yet done so to communicate to the Secretariat their intended nationally determined contribution (INDC) towards achieving the objective of the Convention as soon as possible, and in any case well in advance of the twenty-second session of the Conference of the Parties (November 2016). The same decision also invites Parties to communicate their first nationally determined contribution (NDC) no later than when they submit their respective instruments of ratification, acceptance, approval of or accession to the Paris Agreement. If a Party has communicated an INDC prior to joining the Agreement, it will be considered as having satisfied this provision unless it decides otherwise. In this context it is important to understand two aspects:

1 By 27th October, 86 Parties had ratified the Paris Agreement. http://unfccc.int/paris_agreement/items/9485.php

(a) If a goal/target is submitted *prior to* submission of the instrument of ratification/acceptance/approval/accession, it will be termed an **INDC**.
(b) If such a goal/target is submitted *with* the instrument of ratification/acceptance/approval/accession, it will be termed an **NDC, the country's first NDC**.

If a country plans to submit the instrument of ratification/acceptance/approval/accession before COP-22, it may submit the NDC with the instrument of ratification; if the country is not in a position to submit the instrument of ratification/acceptance/approval/accession before COP-22, then it should submit the INDC prior to COP-22. The INDC submitted would then be automatically considered a first NDC on submission of the instrument of ratification/acceptance/approval/accession by the country concerned.

In Paris, the Parties have agreed that each Party is to communicate a NDC every five years, and it may at any time modify its existing NDC with a view to enhancing its level of ambition.

The NDC of a country sets out its efforts to combat climate change, including its mitigation goal, corresponding to its national contribution to global mitigation efforts. At the national level, NDCs will be implemented through individual policies and measures, which countries are now in the process of designing. All these policies and measures will undergo a measurement and reporting process nationally. The information collected from the individual policies and measures can be used nationally to monitor the level of achievement of the mitigation goals stated in the NDC and thus contribute to the reporting of progress in implementing NDCs to UNFCCC. In addition, the information collected at the country level and reported internationally will allow achievement of the long-term mitigation goal of the Paris Agreement, namely '*reaching global peaking of greenhouse gas emissions as soon as possible*', to be tracked. In this context, the implementation of MRV systems at the national and international levels becomes an important tool to track individual countries' implementation of their NDCs.

Reiterating the need to build mutual trust and confidence and to promote effective implementation, Article 13 of the Paris Agreement established an enhanced transparency framework for action and support. The purpose of the transparency framework of action is to provide a clear understanding of climate change actions taken by countries in light of the objectives of the Convention, including clarity and the tracking of progress towards achieving Parties' individual NDCs. This framework is thus one of the central pillars for enhancing information on NDC implementation and raising the ambition to meet the Paris Agreement's goal of staying well below 2 degrees.

Decision 1/CP.21 states that the modalities, procedures and guidelines of this transparency framework are to build upon and eventually supersede the measurement, reporting and verification (MRV) system established under COP-16 in Cancun and COP-17 in Durban. The

existing MRV arrangements agreed during these COPs will thus form the basis for the new enhanced transparency framework.

This publication feeds into the UNFCCC discussion on international reporting to track progress in implementing NDCs. It aims to enhance the knowledge of policy-makers and decision-makers in developing countries by identifying and explaining the reporting requirements established under the Paris Agreement. Though the new transparency framework will apply to all countries, the publication focuses on transparency regarding developing countries' mitigation contributions. Adaptation and finance are also important elements of the new transparency framework, but they are not covered in this publication.

The first chapter gives an overview of the Paris Agreement and introduces the enhanced transparency framework for action and support established under the Agreement. The second chapter starts by summarizing the existing MRV requirements of national goals under UNFCCC and subsequently explains in layman terms the provisions of the Paris Agreement on the Transparency Framework. The third chapter analyses and makes recommendation on the type of information that should be reported in order to track progress in implementing NDCs. This chapter discusses also what could be the frequency of the reporting under the Paris Agreement. Finally the third chapter analyses the type of information needed in order to perform the collective assessment of mitigation efforts under the global stocktake. The last chapter specifically addresses the use of offsets and the risk of double-counting in the case of the collective assessment of mitigation efforts.

Chapter 1

UNDERSTANDING THE ENHANCED TRANSPARENCY FRAMEWORK ESTABLISHED UNDER THE PARIS AGREEMENT

1.1 Existing MRV requirements of national goals under UNFCCC

Measurement, Reporting, and Verification (MRV) emerged as one of the key elements of the mitigation framework developed under the UNFCCC for mitigation actions by developing countries. The key objective of MRV is to increase the *transparency of mitigation efforts made by the developing countries as well as build mutual confidence among all countries*.

The MRV framework for developing country Parties is made up of the following components:

Measurement (M): Collect relevant information on progress with and the impact of mitigation actions;

Reporting (R): Present the measured information in a transparent and standardized manner;

Verification (V): Assess the completeness, consistency and reliability of the reported information through an independent process.[2]

At the national level, the implementation of an MRV system is an important GHG management tool, since it enables monitoring of the implementation and effectiveness of mitigation actions, facilitates access to international finance, and tracks progress in delinking economic growth from GHG emissions. Internationally, the implementation of an MRV system is the basis for understanding the current GHG emission levels, the ambition of the existing efforts, and the progress made in achieving the global emissions goal of the Convention.

The MRV framework for developing country Parties established under the Convention is made up of elements and processes to be adopted at the national (domestic) and international levels. The key elements of this framework are summarized in Figure 1.

[2] Guiding for NAMA design. UNFCCC, UNEP Risø Centre and UNDP, 2013.

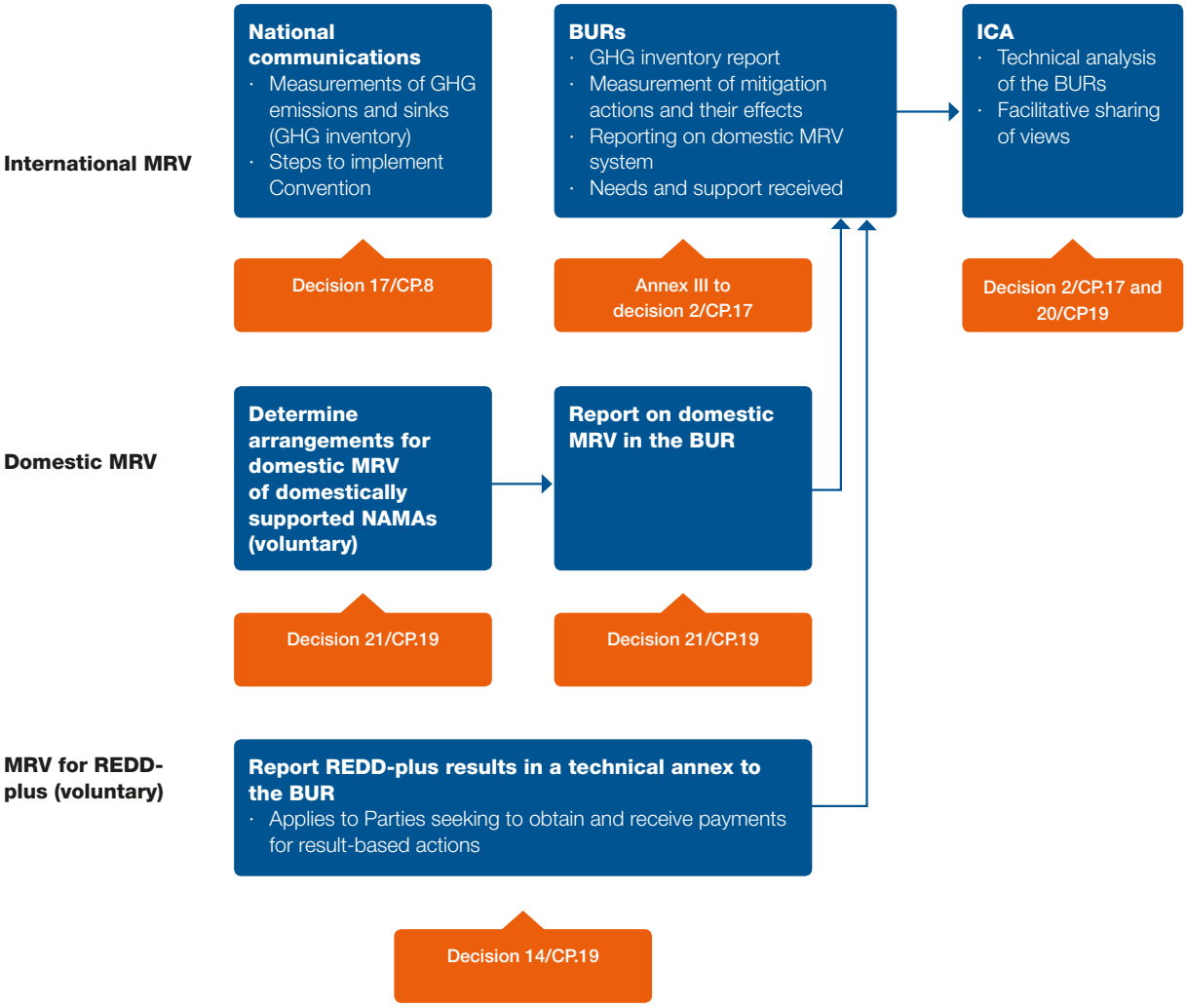

Figure 1. Key elements of the MRV framework as established under the Convention (source: http://unfccc.int/national_reports/non-annex_i_parties/ica/items/8621.php).

Nationally countries should make the arrangements for a national (domestic) MRV system related to the specific mitigation actions that have been identified and implemented by countries in the context of sustainable development. This corresponds to the MRV of the specific individual NAMAs implemented by developing countries as part of their voluntary national mitigation efforts. COP-19 adopted general guidelines for the establishment of such a national MRV system by non-Annex I Parties (Decision 21/CP.19).[3] The information on all specific mitigation actions (i.e. on the efforts a country makes to mitigate its GHG emissions) collected nationally, as well as on GHG inventory, will be compiled by the country concerned

[3] http://unfccc.int/resource/docs/2013/cop19/eng/10a02.pdf

and submitted to the international level through national communications (NCs) and biennial update reports (BURs). Non-Annex I Parties should submit their NCs every four years and their BURs every two years, with additional flexibility given to Least Developed Countries (LDCs) and Small Island Developing States (SIDS). The core information included in the NCs will report on national GHG inventory, programmes containing measures to facilitate adequate adaptation to climate change and to mitigate climate change, and the financial, technical and capacity-building needs. Revised guidelines for preparing NCs by non-Annex I Parties were already adopted by COP-8 (Decision 17/CP.8).[4] The secretariat synthesizes the information from NCs submitted by Non-Annex I Parties, but these NCs are not subject to an in-depth review. The core information included in the BURs will cover GHG inventory, mitigation actions taken or envisaged and their impacts, support needed and received, and the national (domestic) MRV system. COP-17 adopted guidelines for the preparation of BURs by non-Annex I Parties.[5] Internationally the BURs prepared by the country and submitted to the UNFCCC Secretariat will go through an international verification process called International Consultation and Analysis (ICA). ICA takes place in two steps: a technical analysis of the BURs performed by a team of international experts, and a facilitative sharing of views among all Parties. Finally, results-based REDD+ actions undertaken voluntarily by developing countries and for which payments are sought need to go through international MRV. Modalities for MRV of forest-related actions were adopted by COP-19 (Decision 14/CP.19).[6]

1.2 Analysis of the provisions of the Paris Agreement on the Transparency Framework

The Paris Agreement adopted by the Parties at COP-21 is made up of 29 Articles. Article 13 focuses specifically on *transparency* and makes provision for a transparency framework for action and support, '*In order to build mutual trust and confidence and to promote effective implementation*'.

With regard to the *transparency framework for action*, Article 13.5 of the Agreement specifies that the purpose of the framework is '*to provide a clear understanding of climate change action in the light of the objective of the Convention as set out in its Article 2, including clarity and tracking of progress towards achieving Parties' individual nationally determined contributions under Article 4, and Parties' adaptation actions under Article 7, including good practices, priorities, needs and gaps…*'.

Article 4 on mitigation and NDCs states that the Parties shall account for their NDCs and that, in communicating them, they must provide all the information necessary for clarity, transparency and understanding. In this context, Article 13 prompts the conclusion that,

[4] http://unfccc.int/resource/docs/cop8/07a02.pdf#page=2
[5] http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf#page=39
[6] http://unfccc.int/resource/docs/2013/cop19/eng/10a01.pdf#page=39

under this framework, **countries will have to monitor and report information on their mitigation actions in a way that provides clarity and allows the level of progress made in achieving the mitigation targets specified in their NDCs to be tracked.**

Article 7 on adaptation states that each Party should periodically submit an adaptation communication, which may include its priorities, implementation and support needs, plans and actions. In this context, Article 13 states that, under the transparency framework, **countries are encouraged to report information on their adaptation actions to highlight what they have done and what more needs to be done.** It should be noted that in the Paris Agreement the term 'NDC' is only used in Article 4. This implies that the NDC of a country refers to its mitigation contribution. Developing countries, in their INDCs, had included an adaptation component as well. Article 7 of the Paris Agreement states that adaptation 'efforts' will be recognized in accordance with the modalities to be adopted at the first meeting of the Parties to the Paris Agreement.

With regard to the *transparency framework for support*, Article 13.6 of the Agreement specifies that the purpose of the framework is '*to provide clarity on support provided and received by relevant individual Parties in the context of climate change … and … to provide a full overview of aggregate financial support provided, to inform the global stocktake…*'. In addition, Articles 13.9 and 13.10 state that '*Developed country Parties shall … provide information on financial, technology transfer and capacity-building support provided to developing country Parties*' and that '*Developing country Parties should provide information on financial, technology transfer and capacity-building support needed and received*'. In this context, Article 13 prompts the conclusion that, under this framework, **developing country Parties are encouraged to measure and report information on the support (financial, technology transfer or capacity-building) they will be receiving in order to implement mitigation and adaptation actions.**

The transparency framework established under the Paris Agreement thus applies to all developed and developing country Parties, and will cover information about the mitigation and adaptation actions undertaken by these countries, as well as the support they provide or receive to enable them to implement these actions.

Other Articles of the Paris Agreement also specify the information that countries will have to provide. Article 13.7 states that each Party shall provide the following information on a regular basis: a national inventory report of anthropogenic emissions prepared in accordance with the IPCC's guidelines, and the information necessary to track the progress made in implementing and achieving its NDC. PART 3 of the present publication analyses in greater detail the information needed to track progress in implementing an NDC. The *shall* used in Article 13.7 makes it mandatory for all Parties, both developed and developing country Parties, to report on these two elements. In addition, Article 13.8 adds that each party *should* – thus is encouraged to, without it being mandatory – also provide information related to

climate change impacts and adaptation. Finally, Article 13.9 states that developed country parties *shall* – thus this provision is mandatory – provide information on the financial, technology transfer and capacity-building support provided to developing country parties. Conversely Article 13.10 states that developing country parties should – thus are encouraged but not obliged – to provide information on the financial, technology transfer and capacity-building support needed and received. Table 1 summarizes the information that developed country parties and developing country parties will have to report internationally.

	National inventory report	Information to track progress on implementing NDC	Information on climate change impacts and adaptation	Information on support provided	Information on support needed and received
Developed country parties	mandatory	mandatory	encouraged	mandatory	–
Developing country parties	mandatory	mandatory	encouraged	encouraged	voluntary

Table 1. Information reported to international level by developed country parties and developing country parties.

The Article does not provide explicit information on the format for and frequency of reporting such information internationally. However, as the NCs and BURs/BRs processes will be the basis for developing requirements under the new framework, the frequency of the reporting will most probably be at least every two years. Currently developed countries have to submit national inventory reports annually. It is not clear whether other countries will also be required to do this or will be granted some flexibility in the permitted frequency of their submissions.

Although the Paris Agreement applies to all Parties, and although the transparency framework will be common to them all, Article 13 lays special emphasis on the flexibility granted to the Parties in implementing this Article. The Article states that the transparency framework '*shall provide flexibility in the implementation of the provisions of this Article to those developing country Parties that need it in the light of their capacities*', including flexibility in the scope, frequency and level of detail of reporting, and in the scope of review.

Decision 1/CP.21 states that the modalities, procedures and guidelines of the transparency framework of action and support must build on and eventually supersede the MRV system established by COP-16 and COP-17. The task of developing these modalities, procedures and guidelines has been assigned to the Ad Hoc Working Group on the Paris Agreement (APA)

and those will be adopted at the first session of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (Article 13.13).

In order to respect the national sovereignty principle, as well as to take into account countries' different capacities, Article 13 does not provide any detail of how the transparency framework should be established nationally.

However, Article 13.3 does stipulate that the framework shall be developed in accordance with the following principles in being:

- **facilitative**, i.e. the international verification process should be conducted by means of a facilitative sharing of views in order to consider the progress made with respect to achieving the NDCs and to provide recommendations to the countries;
- **non-intrusive**, i.e. the framework should not interfere with national rules or procedures, nor pry into national information systems;
- **non-punitive**, i.e. no international compliance or punishment mechanism should be set up to enforce the implementation and achievement of the NDCs;
- **respectful of national sovereignty**, i.e. as an independent authority, a country has the right to control the development and implementation of the transparency framework at the national level itself;
- **avoiding placing undue burdens on the Parties**, i.e. the development and implementation of the transparency framework should not cause any excessive additional load for a country either institutionally or financially. This implies that the framework should have built-in flexibility, taking into account a country's capacities.

In addition, Articles 13.3 and 13.4 clarify that the framework has to be based on the transparency arrangements that already exist under the Convention. In particular, these Articles mention that experience with the arrangements made for the NCs, biennial reports (BRs) for developed countries and BURs for developing countries must be drawn on in developing the modalities, procedures and guidelines for the new framework. It is thus clear that the reporting arrangements that may already exist in individual countries for developing the NCs and the BRs/BURs should be integrated into the arrangements for the new transparency framework, and that these reports will be the basis for developing new national requirements under this framework to report information to the international level by means of national reports. In addition, the same articles make it clear that experience with the arrangements made internationally for international assessment and review (IAR) on the part of developed countries and for ICA on the part of developing countries must also be part of the experience to develop the modalities, procedures and guidelines for the new framework. Articles 13.11 and 13.12 also state that the information submitted by the parties shall undergo a technical expert review which is akin to the expert review held under the IAR/ICA. In addition, these articles mention that each Party shall participate in a facilitative, multilateral consideration of progress akin to the facilitative dialogue held under the IAR/ICA. This means that the IAR/

ICA processes will form the basis for the requirements for international verification of the information submitted by country parties under the new framework.

International verification should not be confused with the compliance mechanism established under Article 15 of the Agreement. The purpose of this mechanism is to facilitate implementation of the provisions of the Agreement and promote compliance with them. The Article states that '*the mechanism…shall consist of a committee that shall be expert-based and facilitative in nature and function in a manner that is transparent, non-adversarial and non-punitive*'. The Ad Hoc Working Group on the Paris Agreement has been asked to develop the modalities and procedures for the operationalization of the mechanism. So far it is not clear how the process of the technical review and the facilitative, multilateral consideration which will be established under the new transparency framework will interact with the compliance mechanism.

The new transparency framework will track progress with mitigation made nationally and globally. The information prepared by countries and submitted in their NDCs will be used to feed into the global stocktake agreed under Article 14 of the Paris Agreement. Article 14.1 makes provision for a periodical stocktake to '*assess the collective progress towards achieving the purpose of this Agreement*'. The term 'collective' is important, as the stocktake will look at the aggregate effects of implementing all the NDCs. This Article also states that a stocktake will be held every five years and will inform the submission of subsequent NDCs. Decision 1/CP.21 mandated the Ad hoc Working Group on the Paris Agreement (APA) to develop modalities for stocktaking procedures and also to identify sources of information inputs.

The global stocktake will take into account the NDCs that have been submitted and assess their aggregate impact with respect to the effort required to maintain progress with the aims of the Paris agreement. For example, the 2023 stocktake will consider the NDCs submitted in 2020 for the period 2026–2030. The intention is that the Parties, in defining the ambition of their subsequent NDCs, should take into account the outcome of the global stocktake on the status of the collective effort with respect to the aims of the Paris Agreement. From 2028, the global stocktakes will also take into account information with respect to the previous NDCs' periods of implementation and also assess the collective achievement of these targets and their impacts with respect to the aims of the Paris Agreement.

Chapter 2

INFORMATION TO BE REPORTED IN ORDER TO MEET THE REPORTING REQUIREMENTS UNDER THE NEW TRANSPARENCY FRAMEWORK

The nature of the NDC mitigation target, as well as differences in the coverage of sectors and gases, will have an impact on the information individual countries will have to monitor in order to track the progress of their NDCs. Therefore, it is important to start by examining the different types of target defined by countries in their INDCs.

2.1 Categorization of INDCs

The INDCs submitted by different countries reflect the different approaches they use in defining their INDC and NDC mitigation targets.

The UNFCCC Secretariat analysed 161 INDCs covering 189 Parties submitted to it by 4th April 2016. Based on this analysis, INDCs were categorized by the types of mitigation target expressed in the INDC. Figure 2 gives the distribution of types of INDCs.

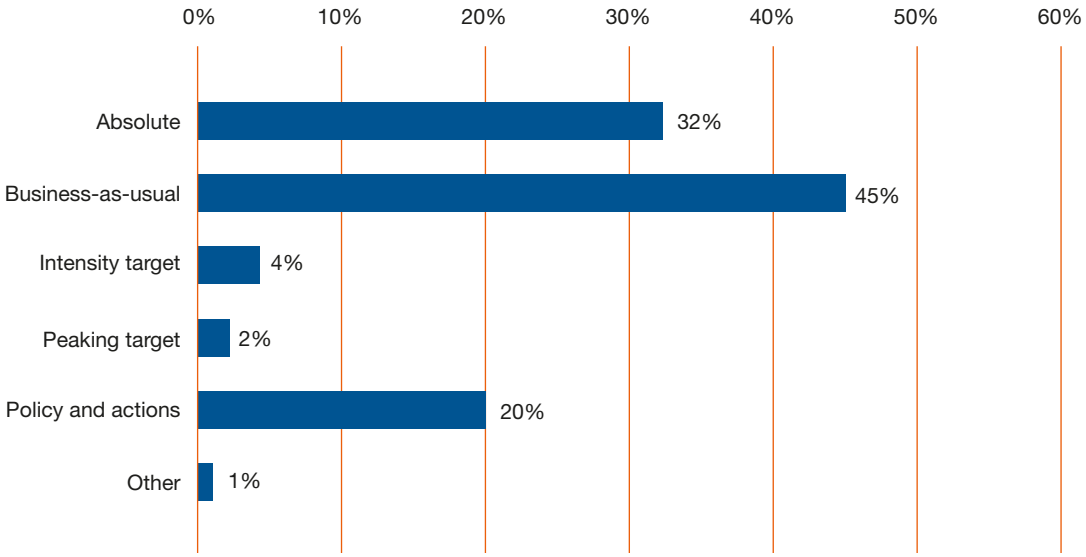

Figure 2. Distribution of types of mitigation targets communicated in the INDCs (source: UNFCCC synthesis report[7]).

[7] http://unfccc.int/resource/docs/2016/cop22/eng/02.pdf

Table 2 below defines the target types included in Figure 2.

Target types	Definition
'Absolute' reductions	National GHG emissions target for a future year (2025/2030)[8] expressed in relation to a past year (1990/2005). Example, the EU INDC proposes limiting its GHG emissions to at least 40% less than its GHG emissions in 1990 by 2030.
Reductions with respect to 'Business as usual' (BAU)	National GHG emissions in a future year (2025/2030), expressed with respect to projected GHG emissions in that year (2025/2030) if no actions additional to those already being implemented are taken to limit GHG emissions.
'Intensity Target' reductions	The target is expressed as national GHG intensity (GHG emissions per unit of GDP or per person, etc.). It is similar to the 'absolute' target except that the target is GHG intensity in place of total GHG emissions. For example, China's INDC has set its target as reducing the GHG intensity of its GDP (GHG emissions per unit of GDP) by 60% below the 2005 GHG intensity of GDP by 2030.
Peaking Target	This target is expressed as the year in which the GHG emissions will peak. For example, South Africa's INDC sets a goal of GHG emissions peaking between 2020 and 2025, and then staying stable till 2030.
Policies and Actions	Targets are expressed as specific strategy, policy and mitigation actions. Thus the target is to adopt and implement these policies and actions, but not a specific GHG emission reduction goal.

Table 2. Definition of the different types of INDC targets.

Apart from differences in the type of INDC mitigation target, the coverage of sectors and gases also varies among countries. Most of the countries that have used absolute/intensity targets included all sectors and gases. Many countries that have used a reduction target relative to BAU covered all the sectors and gases, but some covered specific sector(s) and CO_2 only. This difference in coverage would imply different information requirements for tracking progress in implementing NDCs.

Countries might thus report different types of information according to the nature of the mitigation target and the content of the NDC. This aspect has some implications for the reporting of information that may be relevant for the collective assessment of progress through the stocktake. Indeed, in case of the collective assessment of progress, comparable information will be needed for all countries to be able to aggregate their individual impacts. This might be challenging for smaller developing countries which do not have economy-wide coverage or do not cover all the sectors and/or gases.

[8] Some countries (e.g., the USA) submitted an INDC with a target defined for 2025, while others submitted INDCs with the target defined for 2030 (e.g., the EU).

2.2 What information is needed to meet the reporting requirements under the Paris Agreement?

Article 13 on transparency provides the framework through which the Parties will account regularly for their NDCs. A Party will account for its NDC by providing information on '*tracking progress in implementing and achieving its NDC*'. This Article thus governs the information that Parties need to report internationally to track progress on the implementation of their NDCs.

Article 3 states that Parties should communicate their NDCs with a view to achieving the aims of the Paris Agreement. Furthermore, Article 14.1 lays down a periodical stocktake to '*assess the collective progress towards achieving the purpose of this Agreement*'. This has implications for both the information to be reported in NDCs and the information needed to track progress in achieving NDCs.

Therefore, in order to address the information needed for the reporting requirements, it is important to analyse the information requirements for tracking progress with implementing an NDC, the information requirements for assessing collective progress in achieving the aims of the Paris Agreement through the stocktake, and the link between the two types of information.

2.2.1 Information for tracking progress in implementing NDCs

By ratifying the Agreement, in accordance with Article 4.2, Parties are required to '*pursue domestic mitigation measures, with the aim of achieving the objectives of such (NDC) contributions*'. Hence, NDCs will be implemented nationally through individual policies and measures. Therefore, in order to track their implementation, it is important to analyse the information requirements needed to track the progress made in implementing the mitigation measures taken to achieve the objective of the contribution (NDC).

In this context, tracking progress in implementing the NDCs will not focus on the achievement of the NDC mitigation objective but on reporting information on the efforts made in implementing the mitigation measures taken to achieve the objective of the contribution. The information needed to track progress with NDC implementation would thus include information on both the domestic mitigation measures taken by the Party and progress in implementing each of these measures. This information will be reported through national reports agreed under the Paris Agreement.

A review of the existing guidance on reporting progress in meeting the mitigation goals adopted by countries under the Cancun Agreement is useful in identifying the information required regarding domestic mitigation measures and progress in implementing these measures. Under the Cancun Agreement, developed country Parties agreed to undertake quan-

tified economy-wide emission reduction targets for the period 2012–2020, and all of these countries adopted 'absolute reduction' targets for 2020. In accordance with the guidelines on BRs and NCs, these countries are required to report information towards 'progress in achieving the quantified economy wide emission reduction targets' as follows:

i. Description of the mitigation actions, including policies and measures,[9] that the country has implemented since its last national communication or biennial report;

ii. Description of the mitigation actions, including policies and measures, that the country plans to implement;

iii. For each mitigation action, reporting information regarding: name of the action; objective of the action; impact of the action on GHG emissions; types of instrument used to implement the action; status of implementation; implementing entity; and estimate of the mitigation impact at five-year intervals for the period 1995–2020;

iv. Reporting the information on mitigation actions by sector and by gas;

v. Description of domestic institutional arrangements for domestic compliance and MRV of progress towards the 'absolute reduction' targets;

vi. Updated projections for 2020 and 2030;

vii. Methodology for making projections and any changes in methodology since its most recent national communication; and

viii. Reporting information on the anticipated contribution from offsets.

Thus, in accordance with the Cancun Agreement, the information reported by developed country parties has to relate to both a description of the policies/measures adopted and the projections of how these policies/measures will help achieve the 'absolute reduction' targets. The information has to include also both the policies/measures that are being implemented and those that are planned towards meeting the 2020 target.

Under the Cancun Agreement, developing countries agreed to undertake NAMAs. In accordance with the guidelines for BURs, these countries are required to report information as follows:

[9] The phrase 'Policies and Measures' used in the Cancun Agreement is sometimes referred as 'Policies and Actions' under the UNFCCC. In this publication, we use 'Policies and Measures' to refer to any policies or mitigation actions taken by a country to achieve its NDC.

i. Name and description of each mitigation action, including information on the nature of the action, coverage, quantitative goals related to the action, if any, and progress indicators;

ii. Steps taken or envisaged to implement the action;

iii. Progress with implementing the mitigation actions and the results achieved; and

iv. Information on domestic MRV arrangements.

Under the Cancun Agreement, the key differences between developed and developing countries in terms of reporting are the following:

i. Developing countries are not required to include GHG emissions projections in their reporting;

ii. Developing countries are required to provide more detailed information on each of the mitigation actions in terms of the steps taken to implement these actions, on the progress made in implementing these actions, and on the results achieved; and

iii. Developing countries are not expected to report actions by sectors or gases.

These differences are linked to the nature of the mitigation responsibilities of the two groups: economy-wide reductions for developed countries, and NAMAs for developing countries. The information on reporting progress in developing countries was limited to the information on NAMAs and their outcomes, and did not cover projections of the collective impact of all NAMAs. In lieu of projections, developing countries were required to include information on the impacts of each mitigation action on GHG emissions to provide an aggregate assessment of the NAMAs on national GHG emissions.

Information to track progress in implementing NDCs with quantitative targets

In the case of countries that will submit NDC mitigation targets expressed as economy-wide reductions (absolute reductions, emission intensity reductions, or peaking targets) or as reductions of GHG emissions below BAU, reporting information on the description of the policies/measures and on the projections of national GHG emissions with mitigation measures will provide sufficient information on tracking progress in implementing an NDC. Information on mitigation policies/measures is required because, in ratifying the Paris Agreement, countries are required to take mitigation measures to achieve NDC targets.

It would also be useful if all countries could provide information on key indicator values to demonstrate progress in implementing the policies/measures as additional information. Furthermore, it would also be helpful to report information on mitigation policies/mea-

sures aggregated by sectors. The indicators used to monitor the impacts of the mitigation measures would then help in understanding the changes in sectoral GHG emissions. This would provide greater confidence among the Parties in tracking progress.

The information required to track progress in implementing NDCs is similar to the information that developed countries are currently required to report. However, a number of developing countries may face challenges in reporting the above required information. In terms of the projections, the challenge for developing countries will be the availability of data and of expertise in using methodologies for making projections. This is where the Capacity Building Initiative for Transparency (CBIT) will have to play a role in building capacities in developing countries.

Information to track progress in implementing NDCs with no quantitative targets

In the case of countries that will submit NDC mitigation targets expressed in terms of policies and measures, as the commitment is to implement the policies and measures, the primary information to be reported will relate to the status of the implementation of these policies and measures taken in accordance with the NDC.

Further, it would be useful also to include information on the key indicators used in tracking implementation, the impact on GHG emissions, and if possible the aggregated effect of policies and measures on national GHG emissions.

2.2.2 Frequency of reporting under the Paris Agreement

In order to analyse the frequency of reporting under the Paris Agreement, it is important to understand the cycle of NDC development and implementation. Countries have to submit their NDCs for five-year accounting periods,[10] starting with 2021–2025. Some countries have submitted their INDCs for the period 2021–2030. These countries may choose to submit their first NDC for 2021–2025, but, if they choose not to do so, they will in any case have to submit NDCs every five years from 2025 (for the 2031-2035 accounting period). Under the Paris Agreement, the NDC for a particular accounting period will be submitted five years ahead of the start of that period. Thus NDCs for the 2031–2035 accounting period will be submitted by the Parties in 2025. The stocktake will commence three years after the start of the accounting period. For example, the stocktake in 2023 will start three years into the implementation of NDCs for the period 2021–2025, and that in 2028 will start three years into the implementation of NDCs for the period 2021–2028.

[10] In this publication, 'accounting period' refers to the period of implementation of an NDC.

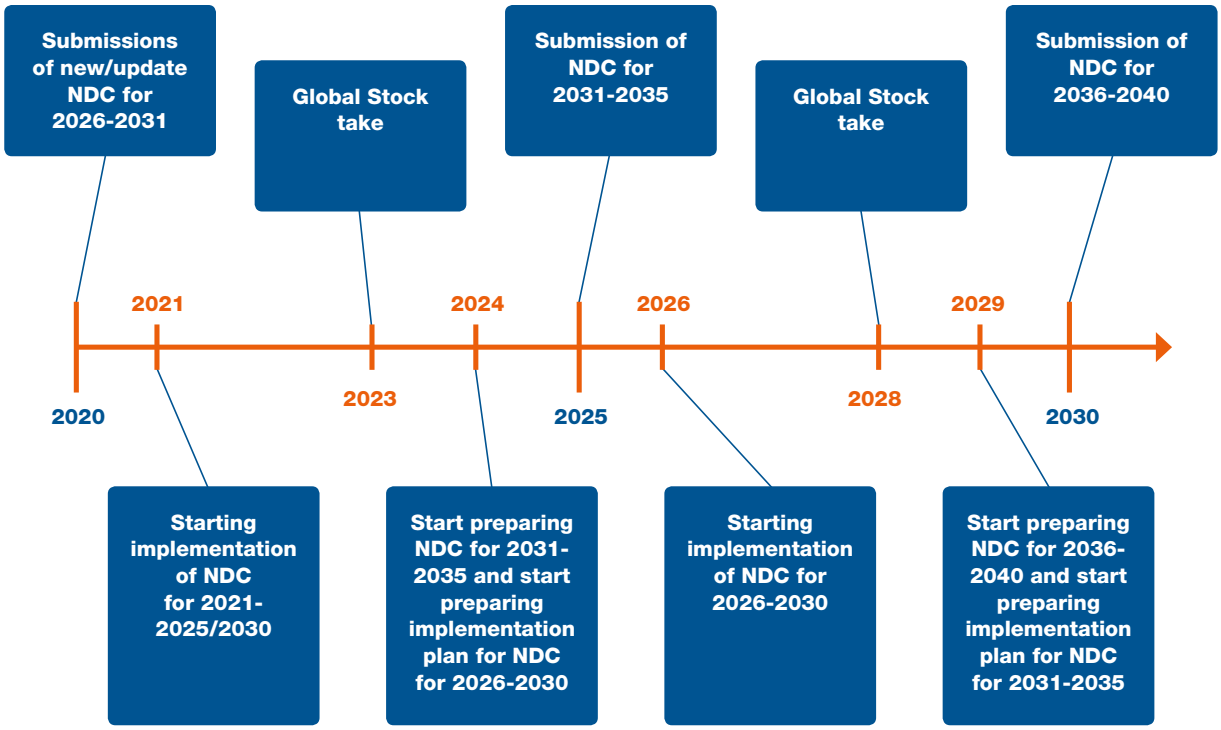

Figure 3. Timeline of NDC cycle. Some countries have submitted an INDC covering the period 2021-2030. In this case, they will have to update their INDC in 2020. Other countries have submitted an INDC covering the period 2021-2025. In this case, they will have to submit a new INDC in 2020 covering the period 2026-2031. From the second NDC onwards, Parties will submit an NDC every five years, and an NDC will be submitted five years in advance of the start of the corresponding accounting period.

As shown in Figure 3, the cycle related to NDC development and implementation will include development of the NDC goal for an accounting period, submission of the NDC to UNFCCC, development of an implementation plan for the NDC, and implementation of the NDC.

As mentioned above, to enable a transparent assessment of progress in implementing NDCs, the regular national reports should include information on (i) measures being implemented for achieving the mitigation target for the current NDC accounting period; (ii) measures planned for achieving the mitigation target for the next NDC accounting period; and (iii) key indicator values to report the impacts/outcomes of measures being implemented for the current NDC accounting period. One question is whether regular national reports will be the channel for reporting information for assessing the achievement of an NDC once the accounting period comes to end. Under the Kyoto Protocol, this was referred to as the True Up report.

It is likely that national reports will be submitted biennially for all country Parties, except LDCs and SIDS, to track progress in implementing NDCs. The challenge of the biennial reporting frequency is that it does not synchronize well with the five-year reporting period. In accordance with the currently agreed cycle of biennial (update) reporting, Parties are expected to submit a biennial (update) report in 2020. As this is also a year before the start of the 2021–2025 accounting period, 2020 could be the first year of reporting under the Paris Agreement. If a two-year frequency is agreed, the subsequent reports would come in 2022, 2024, 2026, 2028, 2030 and so on. This entails that reports for the 2026–2030 accounting period will come at the start and end of the period, whereas for the 2021-2025 or 2031-2035 accounting periods, the reports will come in 2022 and 2024, or 2032 and 2034 respectively, in a time frame that lends itself better to reporting information on progress.

In this context, it would be suitable to have reporting twice in each accounting period. The first report would provide information on all policies and measures planned and being implemented for that accounting period, along with their estimated impacts by the end of the accounting period, as well as information on planned policies and measures for the next accounting period and updated information on projections of national GHG emissions for the last year of the accounting period (LYAP), both the current period and the next one. The second report would provide information on the status and impact of policies and measures already being implemented, any new policy and measures being planned or implemented for the current accounting period since the last reporting, and a true up report of the NDC for the previous accounting period.

So ideally the first report should be issued in the second year of the accounting period, as countries would have most, if not all, of the policies and measures in place to achieve the NDC for the current accounting period. The second report should be issued in the fourth year of the accounting period. As all countries would have available the GHG inventory for the LYAP of the previous accounting period, in accordance with current requirements,[11] it would be possible for all countries to assess the achievement of the NDC for that accounting period. Thus for the 2026–2030 accounting period, the first report would come in 2027 and the second in 2029. Similarly, for the 2031–2035 accounting period, the first report would be issued in 2032 and the second in 2034. This implies that the reporting gap would alternate between two and three years. A reporting cycle based on the second year of the accounting period also allows the updated projections in the first report to be available for consideration in the global stocktake which takes place in the third year of the accounting period. For example, the first report for the 2026–2030 accounting period would be issued in 2027 and, as suggested, would include information on updated projections for national GHG emissions for 2030 (the current accounting period) and for 2035 (the next accounting period). Finally, a reporting cycle based on the fourth year of the accounting period would avoid overloading

[11] Currently, both developed and developing countries have to submit an inventory in the national reports which are not older than two years and four years respectively.

the work to be done in the fifth year of the accounting period, when countries are supposed to submit a new NDC for the next accounting period.

2.2.3 Recommendations on reporting and information for tracking progress in implementing NDCs

i. It is suggested that a reporting cycle be adopted consisting of two national reports per accounting period, the first to be submitted in the second year of the accounting period and the second to be submitted in the fourth year of the accounting period. All countries would have to submit these reports, with flexibility for LDCs and SIDs.

ii. It is suggested that all developing countries, with flexibility for LDC and SIDS, submit national GHG inventories at least biannually and that developed country Parties continue to submit annually as currently required.

iii. The first national report should include information on: policies and measures planned and being implemented for the accounting period; the anticipated GHG impacts of these policies and measures for the accounting period; key indicators to track progress in implementing these measures; planned policies and measures for the next accounting period; and an update on projections of national GHG emissions for the last year of the current accounting period and for the last year of the next accounting period.

iv. The second national report should include information on: the status and impact of implementing policies and measures reported in the last national report; new policies and measures planned or implemented since the last national report; and a true up report of the NDC for the previous accounting period.

2.2.4 Information for assessing collective progress in achieving the purpose of the Paris Agreement

Article 2 defines the purpose of the Paris Agreement as follows: '*This Agreement … aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:*

(a) *Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change…*"

As explained above, the collective assessment of whether the purpose of the Agreement is being achieved will be pursued through the regular stocktake and be based on the NDCs submitted by countries. To assess progress in achieving this purpose, information is required on the projected emissions at the end of each accounting period consequent to NDCs implementation.

Presently, developed country Parties are required to report projections of GHG emissions in their National Communications (see guidelines for National Communication for Annex I Parties[12]). Under the guidelines, these Parties are required to report projections for a 'with measures (WM)' scenario, that is, incorporating the policies and measures being implemented. The WM scenario should use the latest available GHG inventory as a base year. For developed country parties, NC should include GHG inventory not more than two years earlier than the year of reporting: for example, if the NC is submitted in 2016, the latest GHG inventory should be for 2014. The WM scenario thus provides an assessment of countries' emissions trajectories under current policies and measures to address GHG emissions. This provides an assessment of the progress made in meeting the mitigation targets adopted by the developed country Parties.

Developed country Parties may also include in their NCs projections for a 'with additional measures (WAM)' scenario, that is, incorporating planned policies and measures beyond those that are currently being implemented.

Finally, developed country Parties may also include in their NCs projections for a 'without measures (WOM)' scenario, that is, excluding any policies and measures implemented, adopted or planned after the start year of the projections. In the case of developed country Parties, the base year for WOM should be 1990 or any other year that country has chosen. It should be noted that many NCs do not report this counterfactual scenario, as it is difficult to project the situation from 1990, when none of the measures would have been implemented. It is also not of significant use from the perspective of assessing progress in meeting the global mitigation goal.

For developed country Parties, the projections made in their NCs should be by sector and should cover all the sectors defined in the IPCC guidelines, as well as covering all the following gases: CO_2, CH_4, N_2O, PFCs, HFCs and SF6.

Developing country Parties are currently not required to report projections of emissions as is the case for developed country Parties. Nonetheless, some developing countries have chosen to include a chapter on emissions projections in their NCs, generally from the second or third NC. The period used for the BAU scenario and mitigation scenario is generally 2000–2030, and in some cases the end year is 2050. In the case of developing country Parties, the projections do not have to cover all sectors and all gases, as it is required of developed countries.

Information to be included in the NDCs to assess collective progress in achieving the purpose of the Paris Agreement

From the second NDC onwards, Parties will submit NDCs every five years, and an NDC will be submitted five years in advance of the start of the corresponding accounting period. This

[12] http://unfccc.int/files/national_reports/annex_i_natcom_/application/pdf/nc5outline.pdf

implies that those Parties that have submitted INDCs for the 2021–2030 accounting period will have to submit their second NDC in 2025 for the 2031–2035 accounting period, and then every five years. Those Parties that submitted INDCs for 2021–2025 will have to submit their second NDC in 2020 for the 2026–2030 accounting period, and then every five years.

The NDCs submitted by all countries should ideally include information on the BAU scenario with a base year defined as the start year of the NDC accounting period currently under implementation, that is, a year which is five years prior to the year of submission of the NDC. For example, NDC submission in 2025 for the 2031–2035 period should have a base year of 2021, which is the start year of the 2021–2025 NDC accounting period under implementation. The BAU scenario should run until the end of the accounting period for which the NDC is being submitted (2035 in the above example). The BAU scenario should take into account measures implemented under the NDC currently being implemented (in the case of the above example, 2021–2025) and the anticipated impacts of planned measures for the NDC accounting period previous to the one for which the NDC is being submitted (in the case of the above example, the impacts of planned measures for the 2026–2030 NDC accounting period). This BAU scenario would be akin to the WM projections made by developed countries in their NCs under the current reporting requirements.

The NDCs submitted by all countries should also ideally include information on the scenario for NDC mitigation measures for the accounting period of the NDC being submitted (that is, corresponding to the NDC mitigation scenario). This mitigation scenario would be akin to the WAM projections made by developed countries in their NCs under the current reporting requirements.

Together with the BAU scenario and the NDC mitigation scenario, an NDC should also provide national GHG emission reduction targets for every five-year time point (in the case of the above example, this would imply that GHG emission reduction targets should be provided for 2020, 2025, 2030 and 2035).

Further for purposes of completion and comprehensiveness, the BAU scenario and the NDC mitigation scenario should cover all sectors and all gases. Countries may choose to implement measures only in some sectors and address some of the gases, especially smaller developing countries with low total emissions, but the information provided regarding the BAU scenario and the NDC mitigation scenario should be complete in its coverage in order to be able to aggregate GHG emissions across countries and to compare the aggregate values with the global GHG emissions pathways that are required to meet the aims of the Paris Agreement.

2.2.5 Recommendations on the information to be included in the NDCs in order to assess collective progress in achieving the purpose of the Paris Agreement

i. In the NDCs, all countries should be required to present quantitative GHG emissions estimates. The NDC should include projections with a base year corresponding to the start year of the NDC accounting period under implementation. The end year should at the minimum be the end year of the NDC accounting period for which the NDC is being submitted. For example, the time period for the GHG projections included in the NDC submitted for the 2031–2035 accounting period should be 2021–2035. The projections should cover two scenarios:

   a) the BAU scenario for the NDC, which corresponds to the WM scenario, incorporating the mitigation measures being implemented for the current NDC accounting period and the planned measures for the next NDC accounting period. Thus in the above example, the BAU scenario would include the mitigation measures being implemented during the 2021–2025 accounting period and the planned mitigation measures for 2026–2030.
   b) the NDC mitigation scenario, which corresponds to the WAM scenario, incorporating anticipated mitigation measures to be adopted for the accounting period of the NDC being submitted. Thus, in the above example, the NDC mitigation scenario should include anticipated mitigation measures for the 2031–2035 period.

ii. For the base year, national GHG emissions should be the estimated national GHG inventory for that year. In the case of the above example, 2021 GHG emissions should be the same as the estimated national GHG inventory for 2021. Given the current guidelines for NC and BUR, all countries are expected to have this information available.

iii. The projections made in the NDCs should cover all sectors and all gases in order to be able to aggregate GHG emissions across countries and to compare the aggregate values with the global GHG emissions pathways required to meet the aims of the Paris Agreement.

In order to perform a collective assessment of progress in achieving the aims of the Paris Agreement, comparable information will be needed for all countries to be able to aggregate the impacts of individual countries. Quantified information and detailed data by sector and gas will be needed by all countries to develop projections for the collective assessment. This might pose a challenge for many developing countries, as they might not have the information or capacities required to make detailed projections for all sectors and gases.

As the Paris Agreement permits flexibility, developing countries should be granted flexibility in the rigour of their projections. One such flexibility should relate to the projection methods

used for sectors. The projection methods for those sectors that contribute most to emissions should provide a more reliable estimate than for the other sectors. This is where the CBIT will have to play a role in building capacities in developing countries.

Chapter 3

DOUBLE-COUNTING, USE OF OFFSETS AND TRANSPARENCY FRAMEWORK

Double-counting is used to describe situations where a single greenhouse gas emission reduction or removal is used more than once to demonstrate compliance with mitigation targets.[13]

Article 6 sets out an international cooperation mechanism. This mechanism may be used by Parties to meet partially their unconditional contributions through the use of offsets. In addition, this mechanism is likely to support partially, if not wholly, the conditional contributions of developing country Parties. Some developed country Parties may support the conditional contributions of developing country Parties going beyond their own NDC efforts, without using them as offsets. In both cases, it is important that any cooperative effort between two countries to reduce GHG emissions either to meet their unconditional contributions or purely to support the conditional contribution of developing countries should be carefully accounted for to ensure a clear picture of the achievement of their NDCs and of global aggregate GHG emissions. A non-transparent accounting framework could indeed present a risk of double-counting.

NDC accounting and international transfers

To understand why transparent accounting of international transfers is needed to assess the achieving of NDCs, it is necessary to understand the implications of the NDC for a country's emission budget. The emission budget is the total amount of emissions that a country can emit in the last year of its accounting period (LYAP) in accordance with the NDC. For example, if a country's contribution represents a 25% reduction below the 2005 level by 2024 (single year target), it implies that the country has agreed to limit its GHG emissions in 2024 (LYAP) to 75% of its GHG emissions in 2005. Thus assessing whether a country has achieved its NDC would be based on the GHG emissions in the last year of the NDC accounting period. In the above example, if the 2005 GHG emissions were 100 units, the country's emission budget is 75 units. The emission budget for an accounting period will thus form the basis for assessing whether the country has achieved its NDC.

[13] Double Counting in the Paris Agreement. Climate Focus briefing note. December 2015.

Alternatively, the contribution could be expressed as an average value for an accounting period. If the INDC/NDC of a country states that its average emissions for the 2020–2024 accounting period will be 25% below the 2005 level, then its emission budget would be defined for 2020–2024. In this case, if 2005 GHG emissions were 100 units, the country's emission budget would be 75 x 5, i.e., 375 GHG units. This allows certain flexibilities in achieving the emission budget, as emissions in a particular year may shoot up or down due to factors other than mitigation efforts, resulting in an inaccurate representation of the country's efforts.

As INDCs submitted with an economy-wide target define the GHG emissions for the LYAP,[14] assessing whether a country has achieved its NDC would be based on the emission budget for a single year (corresponding to LYAP). In this case, countries will have to use their national GHG emission inventory for the LYAP to verify whether they have achieved the NDC. However, this information alone is not sufficient. As stated above, countries may use offsets to meet their unconditional contributions. Thus, the GHG inventory emissions for LYAP will have to be supplemented by offsets bought or sold. Countries will have to demonstrate:

National GHG inventory LYAP = Emission Budget for AP + offsets purchased – offsets sold

In the above example, where assessment of the NDC achievement is based on the GHG emissions in the last year of the NDC accounting period, the country will have to show that its GHG inventory in 2024 is 75 units. If the GHG inventory for 2024 is more than 75 units, say 80 units, the country will have to show that it has purchased five offsets from GHG emissions reduced in another country. Conversely, if the country has sold some offsets, say ten units, its GHG emission inventory for 2024 should be 65 to demonstrate that it has achieved its NDC.

In this context, a country's GHG inventory might not match its emission budget if it has either purchased offsets (in this case, the GHG inventory will show higher emissions than the emission budget) or sold offsets (in this case, the GHG inventory will show lower emissions than the emission budget). Thus the GHG inventory for LYAP might not represent a correct picture of a country's effort to achieve its NDC.

The central point is that, to account for the achievement of its NDC, a country has to establish the emission budget for its LYAP. Table 3 shows how this budget will be established for different types of NDCs.

An important aspect is that, in the case of an NDC expressed as a single-year target, only the offsets issued during the LYAP have to be considered towards meeting NDC. A policy or measure adopted to reduce GHG emissions, which may be used for offsets by another country, is likely to be implemented over a multiple year period, and will result in GHG emission reductions for every year of that period. For example, an action 1 is implemented during

[14] See the INDC of the United States for an example.

NDCs	Budget
'Absolute' reductions	Base year emissions multiplied by (1 – (% reduction below base year)/100)
Reductions with respect to 'Business as usual' (BAU)	Countries will have to establish the BAU emission in the end year of the accounting period. The emission budget is:
End-year BAU emissions multiplied by (1 – (%reduction below BAU)/100)	The target is expressed as national GHG intensity (GHG emissions per unit of GDP or per person, etc.). It is similar to the 'absolute' target except that the target is GHG intensity in place of total GHG emissions. For example, China's INDC has set its target as reducing the GHG intensity of its GDP (GHG emissions per unit of GDP) by 60% below the 2005 GHG intensity of GDP by 2030.
'Intensity Target' reductions	Information on the GDP value (in constant currency) is needed for the end year of the accounting period. The emissions budget is:
End-year GDP value multiplied by GHG Intensity base year multiplied by (1 – (% reduction in GHG intensity)/100)	Targets are expressed as specific strategy, policy and mitigation actions. Thus the target is to adopt and implement these policies and actions, but not a specific GHG emission reduction goal.
Peaking Target	The peaking target defines the year when GHG emissions will peak. If the peak is in the LYAP, then the emissions budget is the same as the peak emissions. If the peak is before the LYAP, then the country will have to define the emissions level in the LYAP, and this will be its emissions budget.
Policies and Actions	Accounting relates to the implementation of policies and actions.

Table 3. Calculation of the budget for different types of NDCs.

2021–2024 in a country 'a'. Country 'a' has received financial support from another country 'b' in implementing action 1. In return, country 'a' has agreed to share the GHG emission reductions resulting from action 1 with country 'b'. In this case, the amount of emission reduction sold to country 'b' for 2024 should be recorded by both countries, by country 'a' as a sale of offsets, and by country 'b' as a purchase of offsets. Offsets resulting from action 1 issued to country 'b' from 2021 to 2024 cannot be used by country 'b' in meeting its NDC in 2024. If the reduction for 2021 – 2024 are used as offset by country 'b', country 'a' should account for these as sold offsets in year 2024, as if these emissions reduction were sold in 2024.

The following example explains why only emissions reductions from an action in LYAP should be used as offsets. Let us say there are only two countries in the world: country 'a'

has an emission target of 75 units and country 'b' has an emission target of 60 units in 2024. The targets in the Paris Agreement are defined for the end of an accounting period. Thus the total global emissions in 2024 will be 135 units. If action 1 is implemented in country 'a' and results in 0.5 units of emission reduction per year over the period 2021 – 2024, the total emission reductions would be 2.5 units by 2024. If country 'b' uses the total emissions reductions (2.5 units) from action 1 as offsets, country 'b' can emit 62.5 units of emission within its domestic boundaries by 2024 and still meet its target of 60 units. Now if the emissions of country 'a' in 2024 are 74.5, as the action 1 emissions of 0.5 for year 2024 are sold as offset, it meets its target of 75 units. The total global emissions in this scenario are 137 units, i.e. two units more than the initial total global emissions target. Now if country 'b' uses only the emission reductions from action 1 in 2024 as offset, its permissible emissions in 2024 would be 60.5 units. In this case the total global emissions would be 135 units. This example shows that if country 'b' uses reductions of all the years as offsets, then the emissions of country 'a' in 2024 should be 72.5 units. In this last case the total global emissions again would be 135 units.

There is another challenge by using the emission reductions over a period as offsets when a target is defined as end-year. The use of cumulative offsets (resulting from emissions reductions over a period) would allow country 'b' to reduce its emission at a slower rate. In this case, cumulative emissions of country 'b' over 2021-2024 would be higher than the cumulative emissions if only offsets in the year 2024 had been used. If only last year emissions are accounted as offsets, and the emissions of country 'b' in 2021 are 100 units, it will have to reduce its emissions from 100 to 60.5 units by 2024 (as per example above). Now if the cumulative emissions are used as offset, country 'b' will have to reduce its emissions from 100 to 62.5 units by 2024. Even with a simple assumption of linear reduction pathway, cumulative emissions of country 'b' would be 401.25 units in first case, whereas cumulative emissions would be 406.25 units in second case. Thus if cumulative emissions from action 1 are used as offsets, country 'b' could emit 5 units more compared to situation where only last year emission reductions of the action are used as offsets.

In this context, the risk of double-counting becomes important in the case of the collective assessment of mitigation efforts under the global stocktake as emission reductions may be overestimated. Therefore each party has to clearly report its trade in emissions. The key parameter for the collective assessment of the mitigation effort is the aggregate annual global emissions in the LYAP vis-à-vis the emissions pathways needed to achieve the aims of the Paris Agreement for the corresponding year.

A submitted NDC may include a contribution being achieved through offsets. In NDCs that are being implemented, countries may be able to provide information on how much will be achieved through domestic effort and how much through offsets. The challenge would be to provide information for an NDC implemented in the accounting period immediately following the global stocktake (e.g., in the case of the global stocktake in 2028, the NDC for the 2031–2034 accounting period). To reduce the risk of double counting, the NDC should,

at submission, include information on the BAU and mitigation scenarios, and information on the latter should also include information regarding that part of the NDC that will be achieved through domestic measures. Further, since, at the stage of NDC submission, countries may not have accurate information on the share of domestic efforts in total contributions, the latest national report prior to the global stocktake should include updated information on the share of domestic effort in achieving the contribution. Similarly, the NDCs of countries that plan to seek international support in achieving their contribution should clearly present the contribution they will achieve through domestic resources and international support respectively.

About the UNEP Division of Technology, Industry and Economics

Set up in 1975, three years after UNEP was created, the Division of Technology, Industry and Economics (DTIE) provides solutions to policy-makers and helps change the business environment by offering platforms for dialogue and co-operation, innovative policy options, pilot projects and creative market mechanisms.

DTIE plays a leading role in three of the six UNEP strategic priorities: climate change, harmful substances and hazardous waste, resource efficiency.

DTIE is also actively contributing to the Green Economy Initiative launched by UNEP in 2008. This aims to shift national and world economies on to a new path, in which jobs and output growth are driven by increased investment in green sectors, and by a switch of consumers' preferences towards environmentally friendly goods and services.

Moreover, DTIE is responsible for fulfilling UNEP's mandate as an implementing agency for the Montreal Protocol Multilateral Fund and plays an executing role for a number of UNEP projects financed by the Global Environment Facility.

The Office of the Director, located in Paris, coordinates activities through:

- **The International Environmental Technology Centre – IETC** (Osaka), which implements integrated waste, water and disaster management programmes, focusing in particular on Asia.
- **Sustainable Consumption and Production** (Paris), which promotes sustainable consumption and production patterns as a contribution to human development through global markets.
- **Chemicals** (Geneva), which catalyses global actions to bring about the sound management of chemicals and the improvement of chemical safety worldwide.
- **Energy** (Paris and Nairobi), which fosters energy and transport policies for sustainable development and encourages investment in renewable energy and energy efficiency.
- **OzonAction** (Paris), which supports the phase-out of ozone depleting substances in developing countries and countries with economies in transition to ensure implementation of the Montreal Protocol.
- **Economics and Trade** (Geneva), which helps countries to integrate environmental considerations into economic and trade policies, and works with the finance sector to incorporate sustainable development policies. This branch is also charged with producing green economy reports.

DTIE works with many partners (other UN agencies and programmes, international organizations, governments, non-governmental organizations, business, industry, the media and the public) to raise awareness, improve the transfer of knowledge and information, foster technological cooperation and implement international conventions and agreements.

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At the Paris climate conference (COP-21) in December 2015, the Conference of the Parties decided to adopt the Paris Agreement under the United Nations Framework Convention on Climate Change. This agreement is the first universal legally binding climate instrument adopted by Parties in the history of the international negotiations on climate change. Reiterating the need to build mutual trust and confidence and to promote effective implementation, Article 13 of the Paris Agreement established an enhanced transparency framework for action and support. The purpose of the transparency framework of action is to provide a clear understanding of climate change actions taken by countries in light of the objectives of the Convention, including clarity and the tracking of progress towards achieving Parties' individual NDCs.

This publication feeds into the UNFCCC discussion on international reporting to track progress in implementing NDCs. It aims to enhance the knowledge of policy-makers and decision-makers in developing countries by identifying and explaining the reporting requirements established under the Paris Agreement. Though the new transparency framework will apply to all countries, the publication focuses on transparency regarding developing countries' mitigation contributions.

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