

# EX-ANTE CLARIFICATION, TRANSPARENCY, AND UNDERSTANDING OF INTENDED NATIONALLY **DETERMINED MITIGATION CONTRIBUTIONS**

KELLY LEVIN, DAVID RICH, JARED FINNEGAN, AND YAMIDE DAGNET

#### CONTEXT UNDER THE UNFCCC

Parties to the United Nations Framework Convention on Climate Change (UNFCCC) are negotiating an international agreement for the post-2020 period, to be adopted by 2015, that aims to limit the rise of the global average temperature to below 2°C above pre-industrial levels (hereafter referred to as the "2015 Agreement").

In preparation for the 2015 Agreement, Parties decided at the 19th session of the Conference of the Parties (COP 19) in Warsaw to initiate or intensify preparation of their intended nationally determined contributions so that they may be communicated internationally by the first quarter of 2015, by Parties ready to do so, or at least well in advance of the 21st session of the Conference of the Parties (COP 21) at the end of 2015. The COP 19 decision further stipulates that contributions are to be submitted "in a manner that facilitates the clarity, transparency and understanding of the intended contributions."2 Accordingly, the Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP) was tasked to identify, by COP 20 in December 2014, the information that Parties will provide when they put forward their intended nationally determined contributions.3 In line with this task, the ADP co-chairs set a goal to initiate discussions in March 2014 on "which information is essential for facilitating clarity, transparency and understanding of the contributions and what level of specificity is useful and necessary for those purposes"4 in order to facilitate Parties' domestic preparation of their intended nationally determined contributions. This working paper aims to inform the identification of such information.

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The decision at COP 19 catalyzed a new approach within the international climate negotiations by requesting that Parties provide specific information about their contributions (the nature of which is still to be determined) by a specified time. Although similar processes have identified the information necessary to understand pre-2020 greenhouse gas (GHG) emissions reduction pledges,6 these processes were developed after those pledges were put forward and there is still considerable uncertainty about the emissions reductions associated with them.<sup>7</sup> It is critical that the identification of information requirements results in a robust yet manageable list of information for Parties to provide with their contributions. Transparency and clarification of post-2020 contributions is one of the main levers to encourage greater ambition and accountability in the 2015 Agreement.

In this paper we suggest the types of information that could be required to understand the potential emissions reductions associated with national mitigation contributions to inform the UNFCCC process toward COP 20 as well as its outcome. In doing so, we acknowledge the need for Parties to report and account for their contributions in a manner that is common across Parties yet also recognizes differences in national circumstances and capabilities. We recognize that the information identified in this paper may be challenging for Parties with less capacity; therefore, appropriate and timely international financial and capacity-building efforts must be forthcoming.

The paper is organized as follows: first we explore the importance of ex-ante information; we then provide an overview of contribution types, followed by a list of information requirements by contribution type. The appendices provide examples of how a Party might fill out the information requirements. Insights for this paper have been gathered through WRI's development of the GHG Protocol Mitigation Goals Standard, GHG Protocol Policy and Action Standard, and GHG Protocol for Project Accounting. These standards were developed through international, multistakeholder processes.

# **LIMITATIONS OF THIS PAPER**

While the focus of this paper is on ex-ante clarification of the emissions reductions, the level of ambition, and equity associated with mitigation contributions, we acknowledge the central roles that adaptation, finance, technology transfer, and capacity building play in the negotiations,

and that the Warsaw decision did not indicate that the contributions be limited to mitigation contributions. Clarification of the information to be presented for other types of contributions is beyond the scope of this paper, as it would require additional dedicated analysis. In the meantime, we encourage Parties willing to submit and describe their contributions in these areas to, when relevant, use parameters consistent with those in the UNFCCC's common tabular format<sup>9</sup> on finance for developed Parties; use guidelines for biennial update reports<sup>10</sup> for developing Parties or for biennial reports<sup>11</sup> for developed Parties; and/or highlight specific adaptation commitments and needs as indicated in Parties' national communications, national adaptation programs of action, and national adaptation plans.

Also it is not the intent of this paper to prejudge the outcome of negotiations related to accounting rules. These rules are closely related to ex-ante information because they dictate how emissions reductions associated with contributions are calculated. If there is a common approach to accounting in the land-use sector, for example, the need for some of the information requirements regarding treatment of the sector will no longer be relevant because Parties will be using the same approach. Indeed, accounting rules would eliminate the need for many ex-ante information requirements because there would be less divergence among Parties' assessment of emissions reductions. Moreover, in the absence of agreement on accounting (particularly regarding the land-use sector, use of transferable emissions units, and rules for accounting for such units to avoid double counting), information provision alone may not be sufficient for clear, transparent, and understandable contributions. However, given the timing of the development of such rules, and the existing mandate to identify the information that Parties provide with intended nationally determined contributions, we proceed with outlining ex-ante information requirements for a diversity of approaches.

Similarly, in the absence of an agreement on any equity indicators applied to contributions, we suggest that Parties justify how equitable their individual mitigation contributions are and on what basis they made their judgments. However, if equity indicators are decided upon in the future, there would be a common approach for justifying equity of contributions.

#### IMPORTANCE OF EX-ANTE INFORMATION

Without specific information describing intended nationally determined contributions and the assumptions and methodologies that underpin them, it will be difficult, if not impossible, to understand the ambition and equity of contributions in reducing global GHG emissions. Furthermore, without detailed information, contributions cannot be readily compared across Parties nor can the collective global impact of all contributions be determined. Accordingly, ex-ante information provides a number of benefits to Parties and international and domestic stakeholders, including:

#### Building trust:

Transparency enables Parties and national stakeholders to understand how the magnitude of emissions reductions associated with their contributions compares with those of other Parties. This knowledge can ideally lead Parties to take greater action. Deeper trust can also move Parties and national stakeholders to participate in the process of designing the 2015 Agreement, as well as support its implementation. Broad participation is critical for ensuring that the Agreement is viewed as credible by all stakeholders.

#### **■** Improving assessments of emission reductions:

Lack of transparency regarding the underlying assumptions and methodological aspects of national contributions could lead to assessment of Parties' contributions that understate or exaggerate associated GHG reduction outcomes.

#### **Enabling assessment of global ambition:**

Without ex-ante information, necessary emissions information will not be available to aggregate estimated future emissions levels and emissions reductions across Parties. In such a case, global ambition will not be accurately assessed, contributing to significant uncertainty about whether Parties' contributions are consistent with limiting warming to 2°C. The United Nations Environment Programme (UNEP) Emissions Gap Reports have put forward a range of values for the emissions gap, in part because of the lack of clarity around accounting methods and assumptions underlying existing pre-2020 emissions reduction

pledges. <sup>12</sup> In this way, clarification not only provides a critical foundation for understanding global ambition vis-à-vis the 2°C goal, but also for increasing ambition accordingly to ensure that the goal is achieved.

#### Fostering dialogue on ambition and equity:

If Parties clarify why they consider their contribution to be equitable and ambitious, which could be included in ex-ante information requirements as we suggest in this paper, it could help support dialogue across Parties on the meaning and content of the principles of equity and commonbut-differentiated responsibilities and respective capabilities, and how they translate into the level of ambition and effort undertaken by each Party.

#### **Enhancing domestic implementation:**

Providing ex-ante clarification, especially before a contribution has been finalized, enables national decisionmakers to consider, ex-ante, each of the parameters that define their target (e.g., base year, target year, use of transferable emissions units). Without domestic clarity on these parameters, it would be difficult for policymakers to plan, design, and implement the mitigation strategies needed to achieve the goal.

The collective ambition of national mitigation contributions for the post-2020 period will determine whether the world gets on track toward the 2°C goal. Our hope is that the process to ensure clarity, transparency, and understanding of these contributions will improve trust and provide a basis for a more equitable and ambitious agreement. Ex-ante information, although not sufficient, will be necessary for ensuring that national contributions for the post-2020 period deliver the emissions reductions needed to avoid dangerous climate change.

# POSSIBLE NATIONAL CONTRIBUTION TYPES

National contributions can be categorized as GHG mitigation goals, policies, or projects. Within these categories, there are subcategories. For example, there are several types of GHG mitigation goals, including goals framed as a reduction or limitation of emissions from a base year, goals framed as a reduction in emissions intensity, goals

framed as a reduction in emissions relative to a projected baseline scenario, and goals to reduce emissions to an absolute level (e.g., carbon neutrality).<sup>13</sup> Under the Kyoto Protocol, all Annex I Parties adopted base year goals, with some leading to emissions reductions and others to controlled emissions increases relative to a base year. Under the Copenhagen Accord, Annex I Parties put forward base year goals, while non-Annex I Parties put forward nationally appropriate mitigation actions (NAMAs), which included a diversity of mitigation goals, policies, and projects.

It remains to be seen which types of intended national contributions will be put forward by Parties for the post-2020 period, but the same categories of contributions mentioned above may be considered, and some Parties may take on more than one type of contribution.

#### **GHG Mitigation Goals**

A GHG mitigation goal is a commitment to reduce, or limit the increase of, GHG emissions (or emissions intensity) by a defined amount and by a specified point in time or over a time period. There are four common types of GHG

mitigation goals that may be considered for the post-2020 period—base year, fixed level, intensity, and baseline scenario (see Table 1 for more information). In addition, mitigation goals may be further differentiated as economy-wide or sectoral. We use the term "goal" to simply describe the type of intervention and do not discuss the legal form of the agreement in this paper. The word choice is not meant to imply that Parties would not be bound to this type of contribution.

#### **Policies**

Policies are interventions (typically taken or mandated by a government) such as: laws, directives, and decrees; regulations and standards; economic instruments, such as taxes, charges, subsidies and incentives; information instruments, such as required disclosure or labeling; implementation of new technologies, processes, or practices; public or private sector financing mechanisms and investment; and other types of instruments.

Parties may propose contributions that include one or more policies. Moreover, Parties could decide to collectively advance the same policy (e.g., implement a carbon

Table 1 | GHG Mitigation Goal Types that May be Considered Under the 2015 Agreement

GOAL TYPE	DESCRIPTION	REDUCTION IN WHAT?	REDUCTION RELATIVE TO WHAT?
Base year goal	Commitment to reduce, or control the increase of, emissions by a specified quantity relative to a base year (e.g., 1990 or 2005).	Emissions	Historical base year
Fixed level goal	Commitment to reduce, or control the increase of, emissions to an absolute emissions level in a target year. The most common type of fixed level goal is a carbon neutrality goal, which is designed to reach zero net emissions by a certain date.	Emissions	No reference level <sup>1</sup>
Intensity goal	Commitment to reduce, or control the increase of, emissions intensity (emissions per unit of another variable, typically GDP) by a specified quantity relative to a base year.	Emissions intensity	Historical base year
Baseline scenario goal	Commitment to reduce, or control the increase of, emissions by a specific quantity relative to a projected emissions baseline scenario. <sup>2</sup> Baseline scenario goals are sometimes referred to as "business-as-usual" goals, especially when they include the GHG effects of existing policies.	Emissions	Projected baseline scenario

<sup>1</sup> Fixed level goals are expressed in terms of emissions to be reached at a certain point in time and do not include a reference to a base year or baseline scenario.

<sup>&</sup>lt;sup>2</sup> A baseline scenario is a set of assumptions and data that best describe future changes in emissions most likely to occur in the absence of activities taken to meet a mitigation goal.

tax via an international cooperate initiative) or Parties could separately take on a diversity of policies. Unlike goals, policies need not be explicitly framed in terms of emissions reductions, but can instead be framed in terms of a policy objective (e.g., eliminate fossil fuel subsidies, increase renewable energy, or achieve a specified amount of energy savings).

#### **Projects**

A project is a specific activity or set of activities intended to reduce GHG emissions, and need not be undertaken or mandated by a government. A GHG mitigation project may be a stand-alone project or a component of a larger project unrelated to climate change mitigation. Projects are typically smaller in scope than policies (e.g., limited to an individual site). For example, a project may aim to reduce emissions at one coal-fired power plant, while a policy could be an instrument that leads to the reduction of emissions from coal-fired power plants across a country.

# TABLES FOR SUGGESTED INFORMATION FOR NATIONAL MITIGATION CONTRIBUTIONS

This section presents tables for ex-ante information for each mitigation contribution type: GHG mitigation goals, policies, and projects. The tables focus primarily on describing the mitigation contribution and providing information related to understanding GHG emissions and reductions associated with the contributions. These information requirements are adapted from three international GHG accounting and reporting standards developed by the Greenhouse Gas Protocol: the GHG Protocol Mitigation Goals Standard, 15 GHG Protocol Policy and Action Standard, 16 and GHG Protocol for Project Accounting, 17 taking into account the most relevant reporting categories for the UNFCCC. The tables provide space for a Party to provide a justification for how its contribution is equitable and ambitious (although the tables provide flexibility for Parties to define equity and ambition).

We suggest that information requirements should differ by contribution type. Therefore, we present three tables, one for each contribution type: (1) GHG mitigation goals, (2) policies, and (3) projects. Appendix A, Appendix B, and Appendix C give sample completed tables for each contribution type. If Parties put forward multiple mitigation interventions (either of the same type (e.g., three policies) or of different types (e.g., one goal and one policy) under the contribution), then the information would be provided for each intervention (e.g., three policy tables filled out in the case of the first example; one goal and one policy table filled out in the second example).

It should be noted that it is beyond the scope of the paper to propose how this information should be presented (e.g., a bulleted list, a template, or some other format); we offer a table format for ease of viewing. Similarly, in this paper we do not discuss which types of commitments should be adopted by which Parties.<sup>18</sup> Nor do we discuss the advantages and disadvantages of different choices related to goal design, although it is a critically important topic to which we have devoted significant research effort.<sup>19</sup> Rather, we display information that captures the diversity of possible contribution types. Also, as mentioned above, these tables focus on information needs for mitigation contributions. Information requirements will also have to be developed for adaptation, finance, technology transfer, and capacity building contributions; past work on these topics can be built upon, such as the UNFCCC's common tabular format on finance, for developed Parties, guidelines for biennial update reports for developing Parties, biennial reports for developed Parties, national adaptation programs of action, and national adaptation plans.

# Table 2 Information Necessary to Understand Possible GHG Mitigation Goals Put Forward as a Contribution

INFORMATION REQUIREMENT	
Goal Description	
Goal type <sup>1</sup>	
Goal level (expressed as a percentage or million metric tons CO <sub>2</sub> e [MtCO <sub>2</sub> e])	
Base year/period, if relevant	
Base year/period emissions (within goal boundary)	
Base year/period emissions intensity, if relevant	
Single-year goal or multi-year goal <sup>2</sup>	
Target year/period	
Expected target year/period emissions level if the goal is achieved	
Expected target year/period emissions intensity if the goal is achieved, if relevant	
For intensity goals: unit of output (e.g., GDP); base year value for unit of output, and data sources used	
Inventory methodology, including global warming potential (GWP) values (e.g., AR4)	
Sectors and subsectors covered/excluded, including definitions	
Greenhouse gases (GHGs) covered by the goal	
Geographic coverage	
Percentage of Party's emissions covered by goal boundary	
Additional Information for Baseline Scenario Goals	
Static baseline scenario or dynamic baseline scenario <sup>3</sup>	
Policies/actions included in scenario, and a list of any implemented or adopted policies/actions with potentially	
significant GHG effects that are excluded, with justification for exclusion <sup>4</sup>	
Cut-off year after which no new policies/actions are included in the baseline scenario	
Methods for estimating the effects of included policies and actions	
Estimated baseline scenario emissions in target year/period <sup>5</sup>	
Projection method	
Data sources used	
Emissions drivers included and assumptions and values for key drivers	
For dynamic baseline scenario goals, a recalculation policy and significance threshold used to determine	
whether changes in emissions drivers are significant enough to warrant recalculation of the scenario	
Land-use Sector Accounting	
Treatment of land-use sector <sup>6</sup>	
Land-use sector accounting approach <sup>7</sup>	
Land-use categories/activities covered	
Land-use accounting method <sup>8</sup>	
Any use of the managed land proxy, including managed land definition and locations of managed and unmanaged lands	
Any inclusion of harvested wood products in accounting	
Treatment of age-class legacy/carbon sink saturation <sup>9</sup>	
Any use of a natural disturbance mechanism, including: location, year, type, estimation technique, demonstration	
that disturbances are beyond Party's control	

#### Table 2 (cont.) | Information Necessary to Understand Potential GHG Mitigation Goals Put **Forward as a Contribution**

Transferable Emissions Units <sup>10</sup>	
Maximum quantity of units that can be used to meet goal	
Anticipated quantity of units that will be used to meet goal, if known	
Anticipated issuance of crediting scheme units that will be valid for use by another Party, if known; anticipated net transfers of allowance units between emissions trading systems, if known	
Types and vintages of units that can be used to meet goal	
Quality principles applied to units purchased/transferred <sup>11</sup>	
Provisions in place to avoid double counting/double claiming of units	
Maximum and anticipated amount of units to be used from time periods before the goal ("banked" units)	
Additional Information	
Justification as to why this contribution is equitable and the indicators used	
Justification as to why this contribution is ambitious <sup>12</sup>	

#### Notes:

- Goals can be framed as base year, fixed level, intensity, or baseline scenario goals. See description in text, "GHG Mitigation Goals."
- <sup>2</sup> Single-year goals are designed to achieve emissions reductions (or reductions in intensity), or limit emissions (or emissions intensity), by a target year. Multi-year goals are designed to achieve emissions reductions (or reductions in intensity), or limit emissions (or emissions intensity), over a target period.
- 3 Static baseline scenario is a baseline scenario that is fixed throughout the goal period and not updated based on changes in emissions drivers. Dynamic baseline scenario is a baseline scenario that is updated throughout the goal period based on changes in emissions drivers. It is critical that Parties choose whether their goal baseline scenario is static or dynamic, along with a recalculation policy for dynamic goals, before implementation. For more information see chapter 6 of the GHG Protocol Mitigation Goals Standard (http://ghgprotocol.org/ mitigation-accounting).
- <sup>4</sup> As we note in the GHG Protocol *Mitigation Goals Standard*, baseline scenarios should include all policies and actions that have a significant effect on GHG emissions (either increasing or decreasing) that are implemented or adopted in the year the baseline scenario is developed. However, without accounting rules that ensure this is the case, it should not be assumed.
- <sup>5</sup> Emissions level in the target year most likely to occur in the absence of activities taken to meet a mitigation goal.
- 6 The way in which land-use sector emissions and removals are addressed by the goal. Four approaches are relevant here; included in the goal boundary; treated as a separate sectoral goal; used to offset emissions within the goal boundary; not accounted for. For more information see chapter 7 of the GHG Protocol Mitigation Goals Standard (http://ghgprotocol.org/ mitigation-accounting).
- <sup>7</sup> Activity-based or land-based.
- <sup>8</sup> Methodology used to assess emissions reductions within each land-use category or activity: net-net, gross-net, or forward-looking baseline.
- 9 Examples include: change land-use sector accounting methodology and remove land-use sector from goal boundary, cap accountable emissions and removals, use quantitative adjustment to compensate for forest harvest emissions of plantation forests planted before a certain date, or do not take into account.
- 10 Parties may choose to meet their goals using any combination of emissions reductions from within the goal boundary and transfers of emissions units from outside the goal boundary. We use the term "transferable emissions units" to include offset credits generated from emissions reduction projects and programs and tradable allowances, and to apply to nonmarket transfers.
- 11 For compliance with the GHG Protocol Mitigation Goals Standard, offset credits used toward goals must meet the following quality principles: real, additional, permanent, transparent, verified, owned unambiguously, address leakage. Also, allowances from cap-and-trade systems outside the goal boundary must come from emissions trading systems with the following features: strong monitoring and verification protocols; transparent reporting and tracking of units; stringent caps.
- 12 As informed by recent International Panel on Climate Change (IPCC) reports (http://www.ipcc.ch/) and the 2013 UNEP Emissions Gap Report (http://www.unep.org/publications/ebooks/ emissionsgapreport2013/).

# Table 3 | Information Necessary to Understand Policies Put Forward as a Contribution

INFORMATION REQUIREMENT	
Description of the Policy	
Title of the policy	
Status (planned, adopted, or implemented); date of implementation; and date of completion, if applicable	
Type of policy or action <sup>1</sup>	
Primary sectors and subsectors targeted by the policy or action	
Greenhouse gases targeted by the policy or action, if applicable	
Geographic area targeted by the policy or action	
Description of the specific interventions included in the policy or action	
Implementing entity or entities	
Estimated Change in Greenhouse Gas Emissions and Removals Resulting from the Policy (ex-ante)	
Estimated change in GHG emissions and removals expected to result from the policy or action, annually and	
cumulatively over a defined time period, in metric tons of carbon dioxide equivalent (t CO <sub>2</sub> e)	
Time period over which the GHG effects of the policy are estimated	
Estimated change in emissions and removals expected to occur within the geopolitical boundary of the implementing Party, separately reported from the change expected to occur outside the geopolitical boundary	
Methodology (for estimating the change in emissions and removals ex-ante)	
Any standard, guidance, or methodology followed to estimate the GHG effects of the policy (e.g., GHG Protocol <i>Policy and Action Standard</i> )	
The GHG assessment boundary, including a list of the effects of the policy, the GHG sources and sinks affected by the policy, and greenhouse gases affected by the policy that are included in and excluded from the assessment	
Description of the baseline scenario (i.e., the conditions most likely to occur in the absence of the policy), the policy scenario, and the methodology, assumptions, and data sources used to estimate baseline scenario and policy scenario emissions and removals	
A list of existing policies, actions, and projects included in the baseline scenario, and a list of any that are excluded	
Any potential overlaps, interactions, or double counting with other reported policies, actions or projects, and whether and how those interactions are addressed	
The uncertainty of the results (either a quantitative estimate or a qualitative description)	
Whether the results (ex-ante estimate) were validated/verified, and, if so, the validation/verification opinion	
Transferable Emissions Units	
Whether GHG reductions from activities affected by the policy will be sold to another Party, and, if so, what quantity, and what provisions will be used to avoid double counting/double claiming of units	
Whether any transferable emissions units will be transferred to another Party or acquired from another Party as part of the implementation of the policy, and, if so, provisions in place to avoid double counting/double claiming of units	
Additional Information	
Justification as to why this contribution is equitable and the indicators used	
Justification as to why this contribution is ambitious <sup>2</sup>	

#### Notes:

<sup>&</sup>lt;sup>1</sup> For example, regulations and standards, taxes and charges, subsidies and incentives, emissions trading programs, voluntary agreements, information instruments, research and development policies, infrastructure programs, and financing and investment.

<sup>&</sup>lt;sup>2</sup> As informed by recent IPCC reports (http://www.ipcc.ch/) and the 2013 UNEP Emissions Gap Report (http://www.unep.org/publications/ebooks/emissionsgapreport2013/).

# Table 4 | Information Necessary to Understand Projects Put Forward as a Contribution

INFORMATION REQUIREMENT	
Description of the Project	
Name and type of the GHG mitigation project	
Status (planned, adopted, or implemented); start date of the GHG project; the date when GHG reductions are first generated; and the expected operational life of the project	
Description of the project	
Project sectors and subsectors	
Geographic location, including whether the project involves activities or effects outside the geopolitical boundary of the implementing Party	
Implementing entity or entities	
Estimated GHG Reductions from the Project (ex-ante)	
The estimated change in GHG emissions and removals expected to result from the project annually and	
cumulatively over a defined time period in metric tons of carbon dioxide equivalent (t CO <sub>2</sub> e)	
The time period over which the GHG effects of the project are estimated	
Methodology (for estimating GHG reductions ex-ante)	
Any standard, guidance, or methodology followed to estimate GHG reductions (e.g., Clean Development Mechanism (CDM), <i>GHG Protocol for Project Accounting</i> )	
A description of the baseline scenario (i.e., the conditions most likely to occur in the absence of the project), estimated baseline emissions and removals, and the methodology, assumptions, and data sources used to estimate baseline emissions and removals	
Any potential overlaps, interactions, or double counting with other reported policies, actions, or projects, and whether and how those interactions are addressed	
Whether the results (ex-ante estimated reductions) were validated/verified, and, if so, the validation/verification opinion	
Transferable Emissions Units	
Whether GHG reductions from the project will be sold to another Party, and, if so, what is the expected quantity, and what provisions will be used to avoid double counting/double claiming of units	
Additional Information	
Justification as to why this contribution is equitable and the indicators used	
Justification as to why this contribution is ambitious <sup>2</sup>	

#### Notes:

<sup>&</sup>lt;sup>1</sup>Additional information to further understand any elements of the national contribution (e.g., including preliminary offers related to support or adaptation).

<sup>&</sup>lt;sup>2</sup> As informed by recent IPCC reports (http://www.ipcc.ch/) and the 2013 UNEP Emissions Gap Report (http://www.unep.org/publications/ebooks/emissionsgapreport2013/).

#### **CONCLUSION**

To reach an outcome at COP 21 in Paris that is consistent with the objectives of the Convention, trust must be built among Parties. To build the required level of confidence, clarity on Parties' intended nationally determined contributions—as well as the process to assess these contributions (which is beyond the scope of this paper)—will be absolutely critical.

This paper has put forward tables that Parties could complete in order to enhance understanding of their intended nationally determined mitigation contributions. In addition to detailed information regarding the contributions, this paper acknowledges that equity and ambition play key roles in the negotiations. Accordingly, the paper encourages Parties to be transparent about why they consider their contribution to be equitable and ambitious in order to support a constructive dialogue across Parties. Our hope is to inform the COP 20 outcome on the elements of information that should be provided with an intended nationally determined mitigation contribution. Although the primary focus of this paper is on mitigation contributions, finance, technology transfer, capacity building, and adaptation contributions will also be central to reaching an agreement and transparency must be achieved on these elements as well.

It should be noted that the tables in this paper rely on numerous data inputs. For example, some goal types (e.g., emissions intensity and baseline scenario goals) require non-GHG data inputs in addition to emissions data. Strong data collection systems, as well as institutional arrangements for data sharing and management, and associated human and technical resources, will be needed. Some Parties may face challenges in collecting the requisite information, especially given the diversity of contributions Parties may take. Capacity building, especially investments in institutional, human, and technical capacities for data management and GHG accounting, must be targeted accordingly.

Transparency can help build trust, lower the risk of inaccurate assessment, foster dialogue on equity and ambition, and enhance domestic implementation. Greater understanding of contributions, which we hope the guidance in this paper informs, can also enable a more accurate assessment of global ambition, especially in light of the ultimate objective of the Convention—to avoid dangerous climate change.

# APPENDIX A

# Table 5 | SAMPLE COMPLETED TABLE FOR A GHG MITIGATION GOAL CONTRIBUTION

INFORMATION REQUIREMENT	EXAMPLE
Goal Description	
Goal type	Base year goal
Goal level (expressed as a percentage or million metric tons CO2e [MtCO <sub>2</sub> e])	35%
Base year/period, if relevant	2005
Base year/period emissions (within goal boundary)	1,000 million metric tons CO <sub>2</sub> e (MtCO <sub>2</sub> e)
Base year/period emissions intensity, if relevant	n/a in this example (but if intensity goal could be 1,000 MtCO $_2$ e/international\$1,500 billion (purchasing power parity [PPP]) = 0.67)
Single-year goal or multi-year goal	Multi-year
Target year/period	Target period: 2025–30
Expected target year/period emissions level if the goal is achieved	650 MtCO <sub>2</sub> e for each year over the period 2025–30
Expected target year/period emissions intensity if the goal is achieved, if relevant	n/a in this example (but if intensity goal could be 0.43 (MtCO $_2$ e/ billions of international\$ (PPP)))
For intensity goals: unit of output (e.g., GDP); base year value for unit of output, and data sources used	n/a in this example (but an example is: GDP (international \$billion PPP); 1990; official national statistics (see www.xxx.gov))
Inventory methodology, including global warming potential (GWP) values (e.g., AR4)	IPCC Guidelines for National Greenhouse Gas Inventories (2006); GWP values from the IPCC Fourth Assessment Report based on a 100-year time horizon (available at: http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html)
Sectors and subsectors covered/excluded, including definitions	Sectors: energy; industrial processes and product use (IPPU); agriculture, forestry, and other land use (AFOLU); waste; other Subsectors: all subsectors for above sectors listed in IPCC 2006 Guidelines for National Greenhouse Gas Inventories Exclusions: international aviation and maritime Sector definitions: IPCC 2006 Guidelines
Greenhouse gases (GHGs) covered by the goal	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, SF <sub>6</sub> , PFCs, HFCs, NF <sub>3</sub>
Geographic coverage	All contiguous and noncontiguous territories, protectorates, and dependencies under authority of Party
Percentage of Party's emissions covered by goal boundary	97% (international aviation and maritime account for 3% of emissions)
Additional Information for Baseline Scenario Goals	
Static baseline scenario or dynamic baseline scenario	n/a in this example (but if a baseline scenario goal, an example is: dynamic baseline scenario)
Policies/actions included in scenario, and a list of any implemented or adopted policies/actions with potentially significant GHG effects that are excluded, with justification for exclusion	n/a in this example (but if a baseline scenario goal, an example is: National Energy Strategy; Cap-and-trade program (see Legislation X.Y); Air pollution Law (see Legislation Z) Excluded: n/a)
Cut-off year after which no new policies/actions are included in the baseline scenario	n/a in this example (but if baseline scenario goal, an example is: 2010)
Methods for estimating the effects of included policies and actions	GHG Protocol <i>Policy and Action Standard</i>
Estimated baseline scenario emissions in target year/period	n/a in this example (but if a baseline scenario goal, an example is: 1,500 $\rm MtCO_2e)$

# Table 5 (cont.) | SAMPLE COMPLETED TABLE FOR A GHG MITIGATION GOAL CONTRIBUTION

Projection method	n/a in this example (but if a baseline scenario goal, an example is: MARKet Allocation (MARKAL))
Data sources used	n/a in this example (but if baseline scenario goal, an example is: national inventories from 1995, 2000, 2005, 2010; official government GDP and population data (see www.xxx.gov))
Emissions drivers included and assumptions and values for key drivers	n/a in this example (but if baseline scenario goal, an example is: see www.xxx. gov for all supporting documentation on drivers, assumptions, values
For dynamic baseline scenario goals, a recalculation policy and significance threshold used to determine whether changes in emissions drivers are significant enough to warrant recalculation of the scenario	n/a in this example (but if a dynamic baseline scenario goal, an example is: Recalculate when there are changes in the following key drivers: GDP, energy prices, population; Significance threshold is 10%)
Significance Threshold used to Determine Whether Changes in Em Recalculation of the Scenario	nissions Drivers are Significant Enough to Warrant
Treatment of land-use sector	Included in the goal boundary
Land-use sector accounting approach	Activity based
Land-use categories/activities covered	Forest management (afforestation, deforestation); cropland management (soil carbon management, agroforestry); grassland management
Land-use accounting method	Net-net
Any use of the managed land proxy, including managed land definition and locations of managed and unmanaged lands	Not used
Any inclusion of harvested wood products in accounting	Not used
Treatment of age-class legacy/carbon sink saturation	Not used
Any use of a natural disturbance mechanism, including: location, year, type, estimation technique, demonstration that disturbances are beyond Party's control	Not used
Transferable Emissions Units	
Maximum quantity of units that will be used to meet goal	No more than 10% of emissions reductions will be achieved by acquiring transferable emissions units
Anticipated quantity of units that will be used to meet goal, if known	None anticipated at the moment
Anticipated issuance of crediting scheme units that will be valid for use by another Party, if known; anticipated net transfers of allowance units between emissions trading systems, if known	None anticipated
Types and vintages of units that can be used to meet goal	CDM units, vintages restricted to target period (2025–30)
Quality principles applied to units purchased/transferred	Offset credits: real, additional, permanent, transparent, verified, owned unambiguously, address leakage. Allowances: strong monitoring and verification protocols; transparent reporting and tracking of unit; stringent caps
Provisions in place to avoid double counting/double claiming of units	Domestic registry (see 2008 emissions trading system decree, found at www. ets.gov); participation in international transaction log; agreement between buyer and seller (can be provided upon request)
Maximum and anticipated amount of units to be used from time periods before the goal ("banked" units)	None

# Table 5 (cont.) | SAMPLE COMPLETED TABLE FOR A GHG MITIGATION GOAL CONTRIBUTION

Additional Information	
Justification as to why this contribution is equitable and the indicators used	We have judged the equity of our goal based on the following indicators: capability (GDP per capita; Human Development Index), and aggregate emissions from 1850–2010. We have performed a study of the equity of our contribution, based on our select indicators; more information can be found at www.abcd.gov.
Justification as to why this contribution is ambitious	The 2013 UNEP Emissions Gap Report suggests that global emissions need to decline from 50 $\rm GtCO_2e$ in 2010 to 35 $\rm GtCO_2e$ in 2030 to have a likely chance of limiting warming to 2°C. This constitutes a 30% reduction in emissions from 2010 levels. Our goal is also a 30% reduction from 2010 emissions levels by 2030, in line with the global requirement.

# APPENDIX B

# Table 6 $\mid$ SAMPLE COMPLETED TABLE FOR A POLICY CONTRIBUTION

INFORMATION REQUIREMENT	EXAMPLE
Description of the Policy	
Title of the policy	Federal subsidy for home insulation
Status (planned, adopted, or implemented); date of implementation; and date of completion, if applicable	Adopted; to be implemented in 2020; no date of completion
Type of policy or action	Subsidy
Primary sectors and subsectors targeted by the policy or action	Energy Sector, IPCC categories 1A4b Residential and 1A1ai Electricity Generation
Greenhouse gases targeted by the policy or action, if applicable	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O
Geographic area targeted by the policy or action	Entire country
Description of the specific interventions included in the policy or action	Subsidy of US\$200 per household
Implementing entity or entities	Ministry of Energy
Estimated Change in Greenhouse Gas Emissions and Removals Re	esulting from the Policy (ex-ante)
Estimated change in GHG emissions and removals expected to result from the policy or action, annually and cumulatively over a defined time period, in metric tons of carbon dioxide equivalent (t $\rm CO_2e$ )	Annual GHG reduction of 500,000 tCO <sub>2</sub> e per year over the period 2020–30 Cumulative GHG reduction of 5 million tCO2e over 2020–30
Time period over which the GHG effects of the policy are estimated	2020–30
Estimated change in emissions and removals expected to occur within the geopolitical boundary of the implementing Party, separately reported from the change expected to occur outside the geopolitical boundary	Some of the greenhouse gas effects of the policy occur in a neighboring country as a result of decreased demand for imported electricity In-jurisdiction effects:  Annual GHG reduction of 400,000 tCO <sub>2</sub> e per year over the period 2020–30 Cumulative GHG reduction of 4 MtCO <sub>2</sub> e over 2020–30 Out-of-jurisdiction effects:  Annual GHG reduction of 100,000 tCO2e per year over the period 2020–30 Cumulative GHG reduction of 1 MtCO <sub>2</sub> e over 2020–30
Methodology (for estimating the change in emissions and remova	ls ex-ante)
Any standard, guidance, or methodology followed to estimate the GHG effects of the policy (e.g., GHG Protocol <i>Policy and Action Standard</i> )	GHG Protocol <i>Policy and Action Standard</i>
The GHG assessment boundary, including a list of the effects of the policy, the GHG sources and sinks affected by the policy, and greenhouse gases affected by the policy that are included in and excluded from the assessment	<ul> <li>Included:</li> <li>Effects: Reduced emissions from electricity generation, reduced emissions from residential natural gas use, reduced emissions from insulation production</li> <li>GHG sources: Fuel combustion to generate grid-connected electricity, residential fuel combustion, insulation manufacturing processes</li> <li>Gases: CO<sub>2</sub>, CH<sub>4</sub>, N2O, HFCs</li> <li>Excluded:</li> <li>Effects: Increased emissions caused by economic rebound effects (increased demand for goods)</li> <li>GHG sources: Manufacturing of goods</li> <li>Gases: CO<sub>2</sub>, CH<sub>4</sub>, N2O</li> </ul>

# Table 6 (cont.) | SAMPLE COMPLETED TABLE FOR A POLICY CONTRIBUTION

Methodology (for estimating the change in emissions and removals ex-ante)		
Description of the baseline scenario (i.e., the conditions most likely to occur in the absence of the policy), the policy scenario, and the methodology, assumptions, and data sources used to estimate baseline scenario and policy scenario emissions and removals	<ul> <li>■ Description: Continuation of historical residential energy consumption trends, dependent on projected changes in household income and current rates of home insulation absent the subsidy</li> <li>■ Equation: Baseline emissions for household natural gas use (tCO₂e) = historic natural gas use in million metric British thermal units (MMBtu) x (1 + % change in GDP) x baseline emission factor (t CO₂e/MMBtu)</li> <li>■ Assumptions: 2% annual growth in GDP; emission factor of 0.2 t CO₂e/MMBtu</li> <li>■ Data sources: National Statistical Agency, National Energy Agency (see reference)</li> <li>Policy scenario:</li> <li>■ Description: 9% decrease in residential electricity and natural gas consumption</li> <li>■ Equation: Policy scenario emissions for household natural gas use (t CO₂e) = policy scenario natural gas use (MMBtu) x policy scenario emission factor (t CO2e/MMBtu)</li> <li>■ Assumptions: 30% assumed uptake of subsidy; insulation assumed to reduce household energy use by 30%; emission factor of 0.2 t CO₂e/MMBtu</li> <li>■ Data sources: previous study of home insulation (see reference)</li> </ul>	
A list of existing policies, actions, and projects included in the baseline scenario, and a list of any that are excluded	Included policies:  Federal energy tax  Renewable electricity feed-in tariff  Federal energy efficiency standards  Excluded policies:  Information campaigns to save energy	
Any potential overlaps, interactions, or double counting with other reported policies, actions or projects, and whether and how those interactions are addressed	There is an overlapping effect with the renewable electricity feed-in tariff, which is also separately reported. The insulation policy reduces energy demand, while the feed-in tariff decreases emissions from the energy supply, such that the combined effect of both policies is less than would be achieved by each policy individually. The GHG estimation for each policy took the interaction into account, such that the reported GHG reduction from each is less than it otherwise would be absent the other policy.	
The uncertainty of the results (either a quantitative estimate or a qualitative description)	The estimated uncertainty range is 500,000 tCO <sub>2</sub> e reduction per year +/- 150,000 tCO <sub>2</sub> e	
Whether the results (ex-ante estimate) were validated/verified, and if so, the validation/verification opinion	Third party verification by an accredited verifier; limited assurance attained	

# Table 6 (cont.) | SAMPLE COMPLETED TABLE FOR A POLICY CONTRIBUTION

Transferable Emissions Units		
Whether GHG reductions from activities affected by the policy will be sold to another Party and if so, what quantity, and what provisions will be used to avoid double counting/double claiming of units	No units will be sold; all reductions will be claimed toward this GHG reduction contribution	
Whether any transferable emissions units will be transferred to another Party or acquired from another Party as part of the implementation of the policy, and if so, provisions in place to avoid double counting/double claiming of units	Transferable units are not relevant to the policy	
Additional Information		
Justification as to why this contribution is equitable and the indicators used	We have judged the equity of our Party's policy contribution based on the following indicators: aggregate emissions from 1850–2010; relative costs of action; cobenefits of action; and GDP per capita. We have calculated the level of effort based on each of these indicators in our national study, which can be found at www.abcd.gov.	
Justification as to why this contribution is ambitious	This policy takes place in our second highest emitting sector and, based on our national study (see www.xxx.gov), has the greatest mitigation potential of possible policies we could implement in the sector.	

# APPENDIX C

# Table 7 | SAMPLE COMPLETED TABLE FOR A PROJECT CONTRIBUTION

INFORMATION REQUIREMENT	EXAMPLE
Description of the Project	
Name and type of the GHG mitigation project	Cement Alternative Fuels Project No. 3; cement sector GHG reduction project
Status (planned, adopted, or implemented); start date of the GHG project; the date when GHG reductions are first generated; and the expected operational life of the project	Status: planned; expected start date: October 2020; GHG reductions first generated in 2021; expected operational life is 20 years
Description of the project	The project is intended to reduce GHG emissions by reducing clinker content in cement production and switching fuel from coal to biofuels (rice husk) in kiln burning.
Project sectors and subsectors	Cement sector, IPCC category 2A1 Cement Production and 1A2 Fuel Combustion in Manufacturing Industries and Construction
Geographic location, including whether the project involves activities or effects outside the geopolitical boundary of the implementing Party	Kalimantan, Indonesia
Implementing entity or entities	No activities or effects outside of Indonesia
Description of the specific interventions included in the policy or action	Cement Corp.
Implementing entity or entities	Ministry of Energy
Estimated GHG Reductions from the Project (ex-ante)	
The estimated change in GHG emissions and removals expected to result from the project annually and cumulatively over a defined time period in metric tons of carbon dioxide equivalent (t $\rm CO_2e$ )	Annual GHG reduction of 240,000 tCO <sub>2</sub> e per year
The time period over which the GHG effects of the project are estimated	Cumulative GHG reduction of 1.2 million tCO <sub>2</sub> e over 5 years

# Table 7 (cont.) | SAMPLE COMPLETED TABLE FOR A PROJECT CONTRIBUTION

Methodology (for estimating GHG reductions ex-ante)	
Any standard, guidance, or methodology followed to estimate GHG reductions (e.g., Clean Development Mechanism (CDM), <i>GHG Protocol for Project Accounting</i> )	GHG Protocol for Project Accounting
A description of the baseline scenario (i.e., the conditions most likely to occur in the absence of the project), estimated baseline emissions and removals, and the methodology, assumptions, and data sources used to estimate baseline emissions and removals	Baseline scenario: For reducing clinker content, continuation of current practice (production of cement with a clinker-to-cement ratio of 95%); for fuel switching, continuation of current practice (coal is the primary fuel used)  Estimated baseline emissions: For reducing clinker content, 0.478 metric ton CO2e per metric ton of cement produced; for fuel switching, 0.246 tCO2e per metric ton of cement produced
Any potential overlaps, interactions, or double counting with other reported policies, actions, or projects, and whether and how those interactions are addressed	None
Whether the results (ex-ante estimated reductions) were validated/verified, and, if so, the validation/verification opinion	Third party verification by an accredited verifier; reasonable assurance attained
Transferable Emissions Units	
Whether GHG reductions from the project will be sold to another Party, and, if so, what is the expected quantity, and what provisions will be used to avoid double counting/double claiming of units	No units will be sold; all reductions will be claimed toward this GHG reduction contribution
Additional Information	
Justification as to why this contribution is equitable and indicators used	Our contribution is equitable based on the following indicators: aggregate emissions 1850–2010; GDP per capita; Human Development Index; cobenefits, including to sustainable development; and percentage of population vulnerable to climate change. For more information on how our level of effort is weighed against these indicators, please see our national report at www.abcd.gov.
Justification as to why this contribution is ambitious	Emissions from the cement sector are rapidly growing in Kalimantan. This project will demonstrate the potential for fuel switching and changes to clinker content. If successful, with adequate support, we will reproduce the interventions in this project throughout the sector to ensure that the sector's emissions peak no later than 2027.

# **ENDNOTES**

- See para 2 of FCCC/CP/2013/10/Add.1 at http://unfccc.int/resource/ docs/2013/cop19/eng/10a01.pdf.
- 2. Para 2(b) of http://unfccc.int/resource/docs/2013/cop19/eng/10a01.pdf.
- See para 2(c) of http://unfccc.int/resource/docs/2013/cop19/eng/ 10a01.pdf.
- See para 14 of http://unfccc.int/resource/docs/2014/adp2/eng/ 2infnot.pdf.
- See para 4 of http://unfccc.int/resource/docs/2014/adp2/eng/2infnot.pdf. 5.
- For example, via the development of a template for clarifying quantified economy-wide emission reduction targets of developed country Parties (https://unfccc.int/files/bodies/awg-lca/application/pdf/common\_ template\_\_final\_.pdf), and workshops and invitations for submissions to better understand the diversity of mitigation actions by developing countries (see para 34 of https://unfccc.int/files/meetings/durban nov\_2011/decisions/application/pdf/cop17\_lcaoutcome.pdf).
- For example, see the range of emissions reductions estimated in United Nations Environment Programme (UNEP), 2013, "The Emissions Gap Report," UNEP, Nairobi, http://www.unep.org/publications/ebooks/ emissionsgapreport2013/. This is caused by several factors, including a lack of agreed upon accounting rules, ranges of pledges put forward by some Parties, and insufficient information on assumptions underlying pledges.
- For more information visit www.ghgprotocol.org. 8.
- Common tabular format: http://unfccc.int/resource/docs/2012/cop18/ eng/08a03.pdf.
- 10. Biennial update reports: http://unfccc.int/national\_reports/ non-annex i natcom/quidelines and user manual/items/2607.php.
- Biennial reports: http://unfccc.int/resource/docs/2013/cop19/ eng/10a02.pdf#page=19.
- 12. For more information see UNEP 2013, "The Emissions Gap Report," http://www.unep.org/publications/ebooks/emissionsgapreport2013/.
- 13. These four subcategories apply to goals but not to policies and projects.
- 14. Goals can also be framed in terms energy efficiency, renewable energy, or another non-GHG indicator. For goal contributions framed in non-GHG terms, information is needed to understand the contribution itself. Furthermore, to understand the emissions reductions associated with goals framed in terms of a non-GHG indicator, it would be necessary to understand the underlying policy instruments for achieving such a goal. This paper focuses only on GHG mitigation goals, given their relevance to date under the UNFCCC.
- 15. GHG Protocol Mitigation Goals Standard, http://www.ghgprotocol.org/ mitigation-accounting.
- 16. GHG Protocol Policy and Action Standard, http://www.ghgprotocol.org/ mitigation-accounting.
- 17. GHG Protocol for Project Accounting, http://www.ghgprotocol.org/ standards/project-protocol.

- 18. For example, see Levin and Finnegan (http://www.wri.org/publication/ measurable-emissions-reductions-after-2020), in which we have suggested that at least those Parties that put forward an economy-wide goal for the pre-2020 period should put forward one for the post-2020 period.
- 19. See GHG Protocol *Mitigation Goals Standard* which lays out options and recommendations regarding goal design. Also, in Levin and Finnegan (2013), we analyze the different contribution types with regard to their measurability and suggest that Parties adopting goals consider undertaking base year or fixed level goals. For Parties that need to accommodate short-term emissions increases, base year or fixed level goals should still be adopted, even if they are framed as an increase in emissions from a base year (as opposed to a reduction from a base year). If intensity and baseline scenario goals are under consideration, intensity goals should be adopted rather than baseline scenario goals given the many challenges related to measuring, reporting, and verifying baseline scenario goals. We further suggest that Parties with goals take on multi-year goals rather than single-year goals.

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# **ABOUT THE AUTHORS**

**Kelly Levin** is a Senior Associate at WRI whose work focuses on measurement, reporting and verification (MRV), GHG accounting for mitigation goals under the UNFCCC, and climate science.

Contact: KLevin@wri.org

**David Rich** is a Senior Associate at WRI whose work focuses on GHG accounting for mitigation policies and goals.

Contact: DRich@wri.org

**Jared Finnegan** is a Research Analyst at WRI whose work focuses on GHG accounting for mitigation policies and goals and capacity building for domestic MRV.

Contact: <u>JFinnegan@wri.org</u>

**Yamide Dagnet** is a Senior Associate at WRI whose research focuses on the design of the 2015 climate agreement and more specifically on its architecture, mitigation, and MRV.

Contact: <u>YDagnet@wri.org</u>

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