



**International Partnership
on Mitigation and MRV**

Discussion paper

Intended Nationally Determined Contributions under the UNFCCC





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This paper is intended to stimulate a discussion on the possible content of intended nationally determined contributions without prejudice of a negotiated outcome. Comments on the content of the paper are welcome.

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1 Introduction

Parties agreed 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 can be submitted well in advance of the Meeting of Parties to the UNFCCC in Paris; by March 2015 for Parties ready to do so (UNFCCC 2013). It is the first time such an ex-ante process was formally adopted under the UNFCCC, leading to the need to clarify concepts, revisit historical precedents and outline the way forward. When countries undergo a domestic process to initiate, prepare or revisit their potential contributions, the use of technical or policy guidance and good practice examples can inform and promote higher ambition proposals.

Intended Nationally Determined Contributions (INDCs) put forward by countries will form a key input to the negotiations leading towards the 2015 Paris climate agreement. They will therefore need to take into account domestic and international processes as well as requirements for comprehensiveness, transparency and ambition as negotiated under the UNFCCC. It is possible that INDCs put forward by countries before Paris will be the starting point of a mechanism or process to increase ambition over time, further underlining the importance of their timely and well-informed preparation.

Against this background, the objective of this paper is to enhance the understanding of the concept of INDCs. It will discuss the technical and policy-related aspects of preparing, consulting, and communicating these contributions. The overarching objective is to create a common understanding on the topic of INDCs without prejudice of future decisions under the UNFCCC. As such, it can serve as a starting point for countries to elaborate on their INDCs.

Several questions on INDCs have to be solved in the coming months since they have been left open by the Warsaw Decision. This section provides an overview of the main questions, some of which are further detailed in the chapters below.

- **Meaning of INDCs and rationale for countries to prepare them:** As agreed by Parties at COP 19, INDCs put forward by countries will form a key input to the preparation processes of negotiations leading towards the 2015 Paris climate agreement. The term “contribution” was introduced as a compromise of the terms “commitment”, used until then for developed countries, and “nationally appropriate mitigation actions”, used until then for developing countries. Some Parties understand “contributions” to cover contributions on mitigation, while others interpret “contributions” as also including adaptation, finance, capacity building and technology transfer or support. The INDCs in aggregate will provide an important indication of the proposed effort of the international community to address climate change, and whether the global ambition is in line with required greenhouse gas (GHG) emission reductions compatible with the 2°C goal (see Section 2).
- **Technical requirements for the preparation of an INDC:** Countries may provide information to varying degrees based on their national circumstances. The content of an INDC relies on in-country processes. This may include the development of GHG inventories, an understanding of mitigation potentials, GHG projections (e.g. baseline and policy scenarios), as well as an assessments of specific support needs. It is reasonable to expect



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that Parties put forward contributions that are commensurate with their respective level of technical preparation and follow the logic of the chosen type of contribution (see Section 3 for a discussion of types of contributions).

- **Options for the preparation and communication of an INDC:** The packaging and presentation of their INDCs can partially be informed by historical experience of similar processes under the UNFCCC, as discussed for various types of contributions in Section 3. Section 4 covers some elements that could be included in an INDC. The elements offered in Section 4 are meant to provide options for a possible way forward without being prescriptive. Three illustrative examples for this are provided in Table 2 for countries at different stages of development, as well as different degrees of completion of the necessary research and planning processes.
- **Requirements regarding INDC information content:** Countries may choose to describe their INDCs in different levels of detail, providing a range of technical details to increase the clarity, transparency and understanding. These details and information are often termed “up-front information” or “ex-ante clarity”. Parties agreed to decide on the content requirement issue in Lima, December 2014.
- **Expectations for the international process for INDCs:** Under the UNFCCC, the submission of INDCs by Parties will be the starting point of a new iterative process, which is still undefined, since no specification was given by the Warsaw Decision. It will lead to a negotiated outcome at the Meeting of Parties in Paris at the end of 2015. In this iterative process INDCs will need to be considered at least with regards to feasibility of their contributions (technical and political, based on country circumstances), individual level of ambition, aggregated level of ambition in line with the 2°C target and existing commitments for support and equity. Some have proposed that the INDCs will be reviewed or assessed, revised and finalised and only then anchored (as “commitment” or something else) in the 2015 agreement (Section 5).

This paper focuses on the question of what a contribution could include, and how this content can be determined. More detail on possible upfront information is available from various sources (Herold, A. et al. 2014; Levin, K. et al. 2014; Prag, A. et al. 2013). Options for setting up a national process to set up INDCs will be described in related UNDP workshop reports (to be published). There is also literature available on the process for reviewing/assessment and then anchoring INDCs (Briner and Prag 2013; Morgan et al. (to be published)).



2 Contributing to emission pathways compatible with 2°C

Global greenhouse gas emissions need to peak and decline to a low level by the end of the century in order to be compatible with the agreed limit of 2°C (Figure 1). Global scenarios that aim to minimise global mitigation costs to limit temperature increase to 2°C usually assume that CO₂ from fossil fuels and industry are reduced faster than CO₂ from forestry and non-CO₂ emissions. In this illustrative scenario, CO₂ emissions from fossil fuels reach zero in 2070 and then even turn negative (taking CO₂ out of the atmosphere using carbon capture and storage in combination with biomass). A low level of forestry and non-CO₂ emissions remain until the end of the century.

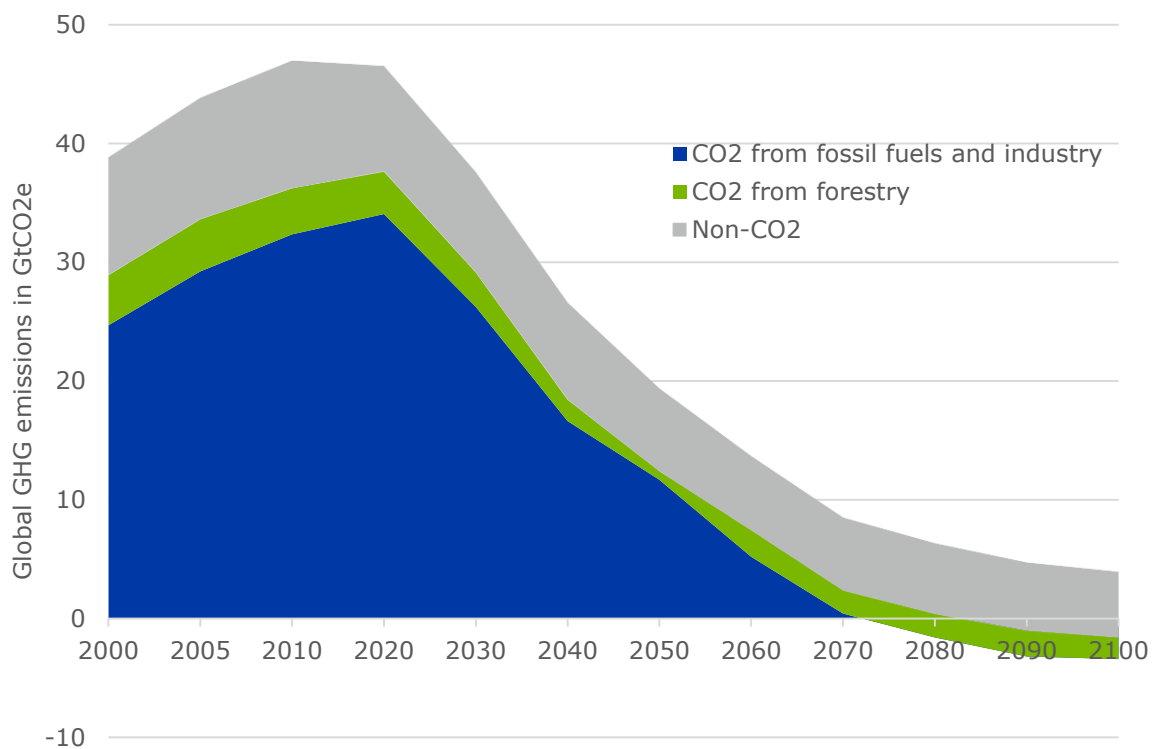


Figure 1. Illustrative scenario of global greenhouse gas emissions compatible with 2°C.¹

¹ CO₂ emissions from fossil fuels and industry are negative from 2070 onwards and are depicted to offset some of the CO₂ from forestry and non-CO₂ emissions (Marker scenario RCP 2.6 of the IPCC, from RCP scenario database <http://tntcat.iiasa.ac.at:8787/RcpDb/dsd?Action=htmlpage&page=download>).



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The timeframe until 2030 is particularly interesting for the 2015 agreement. By that time global emissions would need to be well below the current level (in the order of 30% below today's level).

In the second half of the century, global net GHG emissions would have to be at virtually zero. The timing can vary by gas and sector. Eventually emissions of *almost all* countries have to be at such a low level, unless some have significant negative emissions.

INDCs would be a contribution to this global goal and would essentially have to be compatible with these scenarios, differentiated according to the common but differentiated responsibilities and respective capabilities.

Significantly scaled up technology and financial support and international cooperation is needed to make this transition happen. This would have to take the capacity and responsibility of individual countries into account. In addition, adaptation to unavoidable consequences of climate change will be necessary.



3 Experiences from the past

INDCs are guided by national development priorities. They will potentially be very diverse across countries. A large body of literature exists on possible types of “commitments” under the UNFCCC, which can inform the national development of INDCs. The “pledges” of countries under the Copenhagen Accord/Cancun Agreement can also provide some useful insights on what types of contributions could be foreseeably submitted ahead of Paris. Section 3.1 provides an overview of related historical precedents. Sections 3.2 to 3.4 discuss various further aspects regarding the typology of contributions, also illustrating these based on past experiences where helpful.

3.1 Types of commitments / pledges / contributions

Types of **mitigation** commitments and pledges observed in the past have been quite diverse (Table 1). For the pledges under the Cancun agreements countries chose various types. Each type requires different sets of information to allow the full evaluation of the individual and total effect of the contributions with regard to what the science requires (Vieweg et al. 2013; Levin and Finnegan 2013; Briner and Prag 2013).

Economy-wide emission limitation or reduction targets are the most prominent type. They can be expressed in absolute terms relative to a historic base year (as in the Kyoto Protocol). They can also be expressed relative to a baseline, or expressed as intensity targets (e.g. emissions per unit of GDP output and other metrics such as per capita, per unit of energy consumption etc.). The most ambitious variation is to commit to phase out GHG or achieve carbon neutrality in a target year or period. At an intermediate level a peak year or peak plateau and decline target could be set. Some countries have also confined such GHG targets to certain gases, sectors or sub-national regions.



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Table 1. Past examples of mitigation commitments pledges, incl. their characteristics and most important information needs.

Type	Example 2020 pledges	Characteristics	Most important information requirements for gap assessment
Economy-wide emission reduction targets	Relative to base year: USA, EU, Japan	<ul style="list-style-type: none"> - Full flexibility where to reduce emissions - For developed countries a continuation of the status quo 	Accounting for forestry
	Relative to baseline scenario: Brazil, Mexico, Chile, South Korea	<ul style="list-style-type: none"> - Full flexibility where to reduce emissions - Can factor in economic growth - Creates a "moving target" if baseline changes 	Level of baseline scenario
	Relative to GDP: China, India	<ul style="list-style-type: none"> - Full flexibility where to reduce emissions - Adaptive to changes in economic development - Emission outcome uncertain 	Assumed level of future GDP
Energy targets	China, Peru	<ul style="list-style-type: none"> - Closer to actual actions than emission targets 	Definition of the target, quantification of impact on emissions
Policies	Brazil, Argentina	<ul style="list-style-type: none"> - Directly under control of the government 	Quantification of impact on emissions
Projects	Ethiopia	<ul style="list-style-type: none"> - Very detailed in scope 	Quantification of impact on emissions

Energy targets refer to another type of quantifiable target aimed at addressing the key drivers of GHG emissions. They are typically energy efficiency targets (e.g. increase energy efficiency by certain percentage, or achieve annual energy saving amount), renewable energy targets (e.g. installed capacity, or share of electricity generation), and a coal cap or control target. Other options (not strictly energy targets but still included here) are "area to be afforested", and non-CO₂ targets, etc. There are already over 100 countries with domestic renewable energy targets and many have energy efficiency targets. These energy targets are more focused, closer to actual actions or attached to specific sectors/actors compared to economy-wide GHG emission targets. These intermediate outcomes may be easier to influence. They could also link closer to domestic policy debate on other social and environmental issues such as pollution or health concerns, generate domestic buy-in and bring in co-benefits. They would need quantification of GHG impact to allow for assessment of impact on global emissions.

Policies directly under the control of national governments could be an explicit part of a contribution, including regulations and standards, as well as economic instruments, such as carbon market, taxes,



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charges, subsidies and incentives. The scope of national policies may be narrower than the energy targets that cover the whole sector. They would also need quantification of GHG impact to allow for assessment of impact on global emissions. Many countries have a range of mitigation policies in place already, some of which are related to UNFCCC processes like the development of the National Appropriate Mitigation Actions (NAMAs), but also others that may have been primarily conceived for other purposes, such as local pollution control, energy security etc., and have a significant GHG mitigation effect. A menu of policies paired with respective support options could help countries in defining new policies that are part of the contribution (Höhne et al. 2014).

Projects could also be an explicit part of a contribution, e.g. building a hydropower station. They are typically smaller in scope than policies (e.g. limited to an individual site). Many countries have already relevant experiences with the Clean Development Mechanism (CDM) or Joint Implementation (JI) projects. Projects could result in tangible emission reductions, which may be limited in size compared to other types of commitments. Yet, they would lay the foundation for further mitigation actions, such as building up institutional capacity, technical expertise, or buy-in from domestic actors.

Contributions could include the magnitude of the **intended financial, technology or capacity building support** in a target year or period. Such support contributions could be expressed by groups of countries or by countries individually. For example, in Copenhagen developed countries pledged to collectively provide USD 30 billion for the period 2010 to 2012 and to mobilise USD 100 billion a year by 2020 to support developing countries' climate efforts. Besides this, some developing countries have already provided south-south support on climate mitigation and adaptation actions and could make or advance contributions here. The Warsaw decision left open whether national contributions include intended provision of support or not. Some countries are in favour, some are opposed.

For developing countries it could include details on the specific **support needs** that would enable implementation of specific policies that reduce emissions and build resilience toward a green and climate-proof economy and society. This could include how much is contributed with domestic finance and how much more with support. Previous or ongoing processes and experiences, such as technical needs assessments, preparation and implementation of NAMAs and National Adaptation Plan (NAPs) could provide input. More comprehensive country-wide needs assessment may be required (Höhne et al. 2014). Some smaller or poorer developing countries may need up-front support to undertake such assessments.

Contributions on **adaptation** could possibly include financial targets for countries providing support. Countries could also contribute through the implementation of their adaptation action plans (e.g. NAPs), which could include metrics designed to reflect a certain goal or facilitate an assessment of implementation. The Warsaw decision left open whether national contributions include adaptation or not. Some countries are in favour, some are opposed.



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3.2 Timing of contributions

Contributions could be set in short- (e.g. within five years), medium- (e.g. six to ten years) or long-term (beyond 10 years) time frames. Each have pros and cons regarding political feasibility, compatibility with domestic strategies, policy or planning circles, providing certainty, dealing with uncertainties, measurability, and sending signals/inspiring on-the-ground actions or investments etc. (Vieweg et al. 2013; Briner, G., Prag, A., 2013; Levin and Finnegan 2013).

A combined approach therefore seems most promising to balance the need for ensuring short-term actions and measurability with the need for long-term perspective. For example, applying short-term goals defined as multi-year targets and long-term goals defined as single year targets.

A common time horizon will facilitate greater comparability and mutual assurances. However, flexibility (for example through different schedules for achieving identical targets e.g. phase out goal) could be an option for those countries less ready or capable, therefore potentially enhancing participation.

3.3 Ranges and conditionality

Future targets as part of INDCs could be expressed as ranges, not as single headline numbers (e.g. South Africa's 2020 pledges or China's 40-45% GHG intensity reduction pledge). Expressing targets as ranges may provide flexibility for countries to deal with unexpected events or circumstances. It may help to get national agreement on the contribution as it could provide a certain level of flexibility in achieving targets. For example, a range or conditional target would allow a country to react to economic developments or external shocks. However, the uncertainty of the outcome increases.

INDCs could furthermore be made conditional based on action by other Parties or to the provision of financial support (e.g. in the case of developing countries). It would be necessary that the conditions are very clearly formulated if they form part of a communicated INDC and also lifted if they are met.

For the period up to 2020, ranges of commitments and putting conditions on commitments caused significant uncertainty regarding future emission levels compared to commitments using single numbers and no conditions attached. For instance, analysis of the 2020 pledges by UNEP (2013) showed that ranges are a key source of uncertainty for GHG emission levels in 2020 and determining the gap towards limiting temperature increase below 2°C.

3.4 Process for arriving at a pledge

Countries chose different approaches to come up with their emission reduction pledge in the run up of the Copenhagen conference in 2009. Two illustrative extremes are provided below.



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First inspirational goal, then national implementation: Some countries first chose an ambitious inspirational GHG emissions goal and then developed a full plan for implementing it with respective policies. Examples include Norway (40% below 1990 in 2020), the original pledge of Japan (25% below 1990 in 2020), Costa Rica (carbon neutral), Maldives (carbon neutral), South Korea (30% below business as usual in 2020). An important requirement is an ambitious global goal (2°C or phase out) for setting the target. Very strong national political leadership from the highest level is required to set the target and continued strong national implementation is needed to then really implement it.

National implementation (then national goal): Some countries derived their pledge from the national policy landscape. Some aggregated the effect or the policies to a national emissions goal. For example several countries presented selected new policies as pledges. Requirements for this process would be sufficient time for the development of the policies and knowing what the options are. The advantage is that these actions have a high likelihood to be implemented.

3.5 Inspirational examples

In the process towards 2020 pledges, several countries provided good examples that could inspire other countries in determining their INDC. A few are listed below.

Comprehensive domestic process: Notwithstanding the appeal of top-down commitments to ambitious targets, an INDC that is strongly linked with the domestic strategy and policy agenda has a greater chance of receiving buy-in from a wide range of domestic actors. It would require a comprehensive domestic process that involves deep and sound technical, political and consultative work. For example, South Africa's Long Term Mitigation Scenarios (LTMS) process was an integrated research and consultation process backed up by high-level political leadership and cross-ministry coordination for Low Emissions Development Strategies (LEDS) development. Experience from South Africa has been transferred to numerous Latin American countries (including Brazil, Chile, Colombia, and Peru) as the Mitigation Action Plans and Scenarios (MAPS) project.

High level of transparency: Transparency, i.e. ensuring information and data related to the contribution is accessible and transparent, is important both for domestic and international audiences. It helps to build trust, mutual confidence, and predictability, and it enables assessment and updating of policies to achieve the target. For example, in its 3rd National Communication in 2012, South Korea lowered its business as usual (BAU) projections to 776 MtCO₂e in 2020 from projections provided earlier of 813 MtCO₂e, while keeping the reduction rate of 30% below BAU. So it actually increased the ambition of the 2020 pledge.

Comprehensive content: An INDC that includes an overall national GHG target, as well as sub-targets and plans, and other policies or measures to support the implementation increases confidence and certainty. It also enhances clarity for domestic players on what they are expected to do. For example, Brazil's Copenhagen pledge contains an overall GHG target (the National Policy on Climate Change pledge to reduce its emissions by 36.1% to 38.9% in 2020 against BAU level), broken down to sectors (sector plans cover forest, energy, agriculture, iron and steel, public urban transportation, industry, mining, etc.) plus national policies to achieve it (e.g. in the



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forestry sector this includes the Forest Code, the ecosystem service payment programme, Amazon and Cerrado focused programmes, the National Fund for Forest Development, the National System of Protected Areas, the REDD strategy etc.).

High level of ambition: Several countries, such as the Maldives and Costa Rica, have proposed for their 2020 pledges to stay or become carbon neutral by around 2020. Such proposals are undoubtedly ambitious and send a signal to all investors, business actors and citizens of the direction in which the economy is heading. They were presented as an inspirational goal and are now followed by detailed national policies to achieve this goal.

Tracking sustainable development co-benefits: The impact of an INDC is typically multi-dimensional. Tracking impacts beyond GHG emission reductions can inform decision-making and planning, facilitate coordination and create buy-in amongst stakeholders. It can also inform the international community, including donors, to increase chances to obtain international support for components of the contribution such as individual NAMAs. For example, monitoring, report, and verification (MRV) of NAMAs often covers direct emission reductions as well as transformational changes (e.g. mitigative capacity) and sustainable development benefits (e.g. other environmental, social or economic benefits). For example, Chile's self-supply renewable energy NAMA has a MRV framework which includes a range of impact indicators e.g. job creation, energy cost reduction, energy security improvement, etc.



4 Example elements of a contribution

This section provides some elements that could be included in an INDC based on the aspects discussed above. They are meant to provide options for a possible way forward without being prescriptive. Some countries explicitly support some of these elements, while others object to their inclusion for the purpose of INDCs (not necessarily in general in a 2015 agreement).

- **Inspirational national long-term emissions goal:** An ambitious national long-term goal could provide long-term national direction. For some countries it could be a goal to phase out GHG emissions to net zero by a certain date. For other countries it could be a peak and decline pathway or a goal in the far future.
- **National short-term emissions target:** An emission limitation or reduction target could be set to define the minimum level of intended ambition for the short term (2025 or 2030). Ranges or conditions could help foster domestic agreement. This would apply to those countries in a position to do so, i.e. at least those that had similar types of commitments in the past. Other countries may choose to have such a target or not.
- **Energy targets:** Renewable and energy efficiency targets could indicate action at a different level. Over 100 countries have set national renewable energy targets and many have energy efficiency goals.
- **Highlight policies and projects:** Countries could provide an overview of policies and projects on mitigation and adaptation that form their contribution, including the estimated total impact in terms of GHG emissions (keeping in mind that some countries oppose to include adaptation in national contributions).
- **Need for international support:** Countries could specify their needs for international support, e.g. finance, technology or capacity building for the implementation of individual mitigation and adaptation actions that go beyond those that they finance with own resources.
- **Intended provision of finance:** Countries could specify their intended provision of financial support to other countries for mitigation and adaptation and REDD+ (keeping in mind that some countries oppose to include the intended provision of finance in national contributions).
- **Explanations:** Other countries will want to know why a particular INDC is an ambitious and equitable contribution to the global goal. The country could provide explanations why its contribution is ambitious by relating it to modelling results of regional GHG reductions that would be in line with the 2°C target, or by using indicators. Similarly, the equity considerations underlying the INDC could be made explicit.

It is possible that a country makes a contribution covering all or many of the elements listed above, and these elements may also reinforce each other. The sum of renewable energy, energy efficiency or policy contributions in an INDC could possibly add up to a higher level of ambition than the proposed country-wide emission limitation or reduction target. However, depending on the circumstances, this could potentially help to better understand the overall contribution, in



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particular when an emissions goal is formulated as an intensity target or reductions are related to a BAU trajectory.

Countries may provide information on these elements to varying degrees based on their national circumstances. The drafting of the elements comprising an INDC necessarily relies on in-country analysis like the development of GHG inventories, an understanding of mitigation potentials, GHG projections (e.g. baseline and policy scenarios), as well as an assessment of support needs. It is unlikely that any of these processes can be started and completed in time solely for the purpose of preparing an INDC. As the maturity of the necessary processes is different by countries, it is however reasonable to expect that Parties put forward contributions that are commensurate with their respective level of preparation, i.e., parties could be expected to table INDCs at least making use of the latest level of information and planning available to the country.

Three illustrative examples are provided in Table 2 for countries at different stages of development, as well as different degrees of completion of the necessary research and planning processes.



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Table 2. Illustrative examples of the level of detail that could be provided by three possible types of countries (cells shaded in light blue are the focus areas of the contribution).

Element	Advanced country²	Other country	Country with low capability
Inspirational national long term emissions goal	Year of intended phase out of GHG emissions	Long-term peak and decline pathway or range	-
National short term emissions target	Precisely defined, economy wide, multi-year target until 2025 and/or 2030	Indication of mitigation ambition until 2025 and/or 2030 (below BAU, intensity, range)	-
Energy targets	National energy efficiency or renewable targets Targets related to land-use and forestry	National energy efficiency or renewable targets Targets related to land-use and forestry	National energy efficiency or renewable targets, if existing
Highlight policies and projects	Governance structures Highlight policies / projects with intended impacts	Governance structures Highlight policies / projects with intended impacts	Selection of a few, yet ambitious policies and/or projects
International support needs for mitigation and adaptation	-	Precise purpose and value of support needed	Order of magnitude of support needed
Intended provision of support for mitigation and adaptation	Source, use and value of intended support	Intended south-south provision of support	-
Explanations	Detailed explanation why this contribution is an ambitious and equitable contribution to the global goal	Explanation why this contribution is an ambitious and equitable contribution to the global goal	-

² All current Annex I Parties plus other advanced countries.



5 Conclusions and outlook

UNFCCC Parties agreed to submit their Intended Nationally Determined Contributions by March 2015 – well in advance of the Paris Meeting of Parties in late 2015, if they are ready to do so (UNFCCC 2013). INDCs put forward by countries can likely be the starting point of a mechanism or process to increase ambition over time, further underlining the importance of their timely and well-informed preparation.

While a discussion of the exact detail of up-front information by countries is beyond the scope of this paper, it is reasonable to expect that Parties put forward contributions that are commensurate with their respective level of preparation and development, and support these by sufficient information. Advanced countries, including all current Annex I countries, can be expected to focus their INDCs on precisely defined, economy wide, multi-year targets until 2025 and/or 2030, as well as the source, use and value of intended support. Other countries could concentrate on national energy efficiency or renewable targets, climate related governance structures and highlight policies and projects with their intended impacts. Countries with low capabilities could provide a selection of a few, yet ambitious policies and/or projects in their INDCs.

Flexible guidance may need to be developed that not only considers the technical elements of INDC preparation, but also helps countries in managing the related in-country processes.

Under the UNFCCC, the submission of INDCs by Parties will be the starting point of a new iterative process, which is still undefined, since no specification was given by the Warsaw Decision. It will lead to a negotiated outcome at the Meeting of Parties in Paris at the end of 2015. In this iterative process INDCs will need to be considered at least with regards to feasibility of their contributions (technical and political, based on country circumstances), individual level of ambition, aggregated level of ambition in line with the 2°C target and existing commitments for support and equity. Subsequently they would have to be implemented. Further independent research can provide important input that supports the development and implementation of this new process.



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