



**International Partnership
on Mitigation and MRV**

Knowledge product

How to advance Intended Nationally Determined Contributions Technical aspects for development and review



Knowledge product

How to advance Intended Nationally Determined Contributions

Technical aspects for development and review

By: Sebastian Wienges, Inga Zachow, Heiner von Lüpke, Alexandra Neubert / GIZ,
Ralph Harthan, Anne Siemons / Öko-Institut e.V.

Responsibility: Anja Wucke, Heiner von Lüpke
Graphics: Ann-Kathrin Supiran (p. 4)

Date: 06 November 2015

By order of: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

This publication has received financial support by the International Climate Initiative (IKI) based on a decision of the German Bundestag. The concepts expressed in this publication do not necessarily represent the views of the German government, or the endorsement of any approach described herein.

On behalf of

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH



Federal Ministry for the
Environment, Nature Conservation,
Building and Nuclear Safety

of the Federal Republic of Germany



International Partnership on Mitigation and MRV

This report was prepared by the project “Support of selected partner countries for the elaboration of their Intended Nationally Determined Contributions (INDCs)”, which is implemented by GIZ and forms part of the International Climate Initiative (IKI). The project supports 26 selected partner countries in developing their INDCs via support measures such as analyses and studies, technical support for inter-ministerial working groups, and procedural advice for political decision making processes and stakeholder involvement. See more information at: www.mitigationpartnership.net.

Since 2008, the International Climate Initiative (IKI) of the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) has been financing climate and biodiversity projects in developing and newly industrialising countries, as well as in countries in transition. Based on a decision taken by the German parliament (Bundestag), a sum of at least 120 million euros is available for use by the initiative annually. For the first few years the IKI was financed through the auctioning of emission allowances, but it is now funded from the budget of the BMUB. The IKI is a key element of Germany’s climate financing and the funding commitments in the framework of the Convention on Biological Diversity. The Initiative places clear emphasis on climate change mitigation, adaption to the impacts of climate change and the protection of biological diversity. These efforts provide various co-benefits, particularly the improvement of living conditions in partner countries.

The IKI focuses on four areas: mitigating greenhouse gas emissions, adapting to the impacts of climate change, conserving natural carbon sinks with a focus on reducing emissions from deforestation and forest degradation (REDD+), as well as conserving biological diversity. New projects are primarily selected through a two-stage procedure that takes place once a year. Priority is given to activities that support creating an international climate protection architecture, to transparency, and to innovative and transferable solutions that have an impact beyond the individual project.

The IKI cooperates closely with partner countries and supports consensus building for a comprehensive international climate agreement and the implementation of the Convention on Biological Diversity. Moreover, it is the goal of the IKI to create as many synergies as possible between climate protection and biodiversity conservation.

www.international-climate-initiative.com



Purpose and use of these guiding questions

The principal aim of these guiding questions is to support practitioners in their work to develop, define and review their country's INDCs. The questions and exemplar answers provided are suggested approaches for defining and designing INDCs and, as such, include best practice examples. Note that they are not intended to serve as exhaustive instructions: it is, of course, possible to answer the questions in other ways. The guiding questions are also available as a webtool: <http://mitigationpartnership.net/indc-webtool>.

The guiding questions are not only intended to support the preparation of INDCs; they can also draw out useful content for inclusion in the presentation of INDCs to the UNFCCC process. They help to identify information that is useful for defining an INDC and guide the detailed design of each type of commitment selected as an INDC. Furthermore, in cases where countries wish to refine their INDCs or increase or adjust their ambition levels, the questions can also be used to guide the revision processes involved.

While some of the required information will already be available nationally, other kinds of data may need to be developed or sourced before they can be included in the INDC. Information is categorised in two ways: 'minimum requirement information', which is advisable to include, and 'additional/best practice information', which is helpful to include but not essential. Depending on the data available, INDCs can be drawn up using precisely defined quantitative data or qualitative explanations, target range indications, and example-based information that differentiates between countries with different capabilities.

Transparency is the keystone of the INDC process. As such, all activity data, emission sources, emission factors and accounting methodologies relevant for defining and tracking an INDC should be documented and disclosed in order to enable verification.

About Intended Nationally Determined Contributions (INDCs)

For the first time Parties to the UNFCCC agreed at COP 19 in Warsaw that all countries may prepare their intended nationally determined contribution (INDC) for a climate regime post-2020. This decision was reiterated at COP 20, held in Lima 2014 (1/CP.20, 'Lima Call for Climate Action'). In Lima parties also agreed that INDCs towards achieving the objective of the Convention should represent a progression beyond current mitigation efforts. A common understanding has emerged that INDCs shall comprise a national mitigation goal which contributes to the 'stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system' (UNFCCC Article 2).

Paragraph 14 of the "Lima call for climate action", adopted at UNFCCC COP 20 in 2014 (Decision 1/CP.20), provides information elements that may be submitted with the INDC to facilitate clarity, transparency and understanding of the INDC on the national and international level, and thus help to estimate the global level of ambition of all commitments as well as to track progress towards achieving such commitments. These information elements form the basis for the guiding questions of this template.



Abbreviations

AFOLU	Agriculture, forestry and other land use
BAU	Business as usual
CDM	Clean Development Mechanism
CH ₄	Methane
CO ₂	Carbon dioxide
COP	Conference of Parties (to the UNFCCC)
EU	European Union
GDP	Gross domestic product
GHG	Greenhouse gases
GW	Gigawatt
GWh	Gigawatt hour
INDC	Intended Nationally Determined Contributions
IPCC	Intergovernmental Panel on Climate Change
IPPU	Industrial processes and product use
kWh	Kilowatt hour
LEAP	Long-range Energy Alternatives Planning
LEDS	Low-emission development strategy
LULUCF	Land use, land use change, and forestry
MACC	Marginal abatement cost curve
NAMA	Nationally Appropriate Mitigation Actions
MRV	Measuring, reporting, verifying
UNFCCC	United Nations Framework Convention on Climate Change
WRI	World Resources Institute



Structure of the guiding questions

The guiding questions address each of the steps in the INDC process helix, which describes the two processes – one technically driven and one politically driven – that underpin the INDC preparation (Figure 1). The guiding questions are structured according to the sequencing of the INDC process:

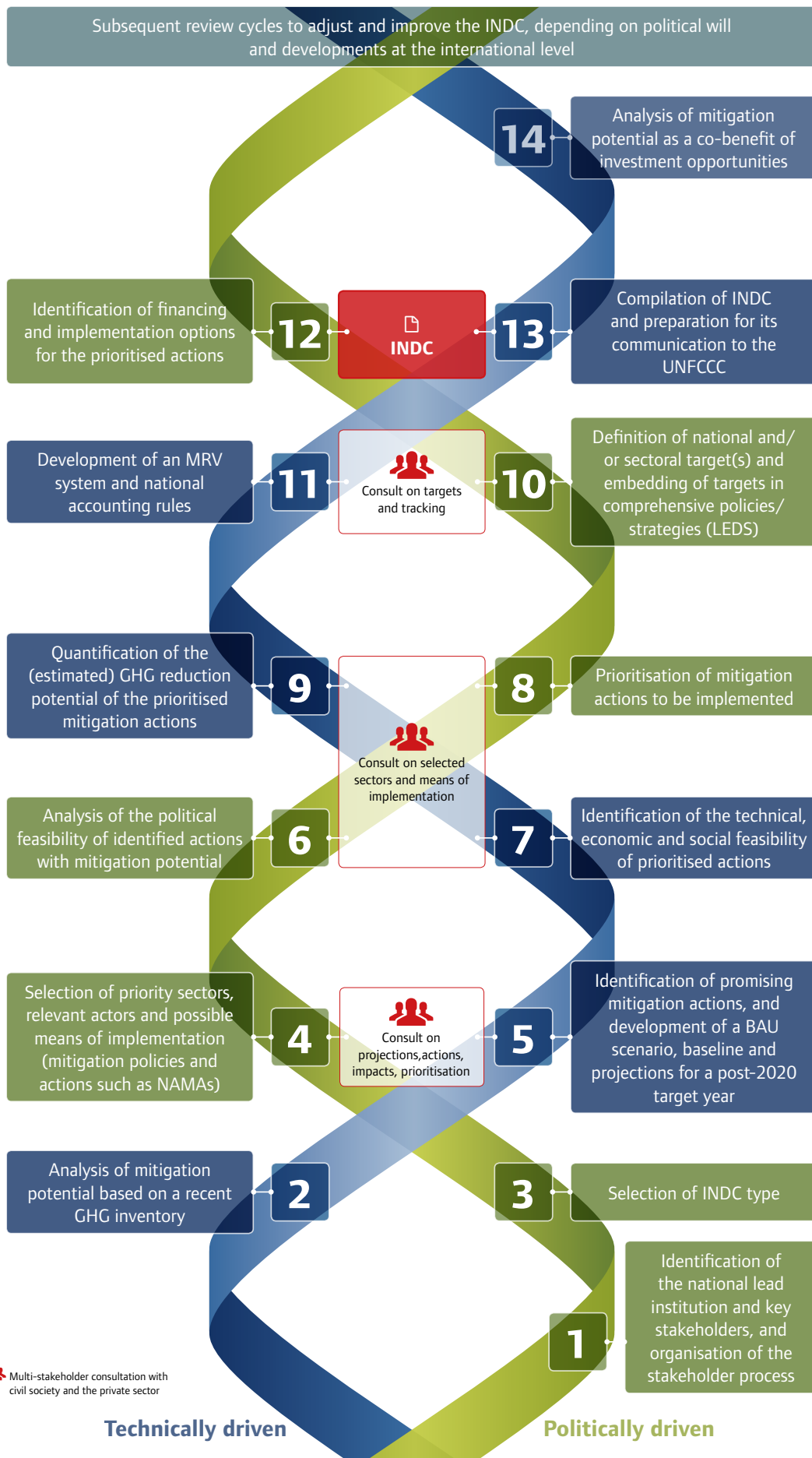
1. Initiating and scoping the development of INDCs	6
2. Data and analysis	8
3. Specific additional questions for individual commitment types	10
4. Designing INDCs	13
5. Transparency and accounting	15
6. Evaluating costs and financial support needs	16
7. Compiling/drafting INDCs	18

A recurrent and important activity in these processes is stakeholder consultation, which ideally should be held at regular intervals so that stakeholders' viewpoints are incorporated. Adopting this kind of inclusive approach is useful as it helps to validate and strengthen ownership of the INDCs.

The guiding questions are also available as a webtool: <http://mitigationpartnership.net/indc-webtool>.

Cycle 1

Elaboration and ongoing development with key political decision-makers of a roadmap for the implementation and consolidation of the INDCs, which includes MRV arrangements for tracking implementation progress.



Multi-stakeholder consultation with civil society and the private sector

Technically driven

Politically driven

Taking stock of the existing climate policy framework

- Does your country have in place: a national climate change legislation that includes a long-term target ?
- A national climate change strategy or low-emission development strategy (or equivalent) ?
- What are the country's existing international commitments (e.g. Copenhagen Pledges) ?

Figure 1. INDC Helix: Overview of the essential factors for defining an INDC. Source: GIZ 2015

Four types of INDC

The guiding questions focus solely on mitigation and assume that countries can basically adopt four types of INDC, described in the table below. These are the most commonly adopted targets and represent good practice for countries operating under the UNFCCC. That said, they are not prescribed in any UNFCCC decision text and are not intended to limit countries' options regarding the definition and selection of their own INDC.

Type	Description	Example from current NAMAs or INDCs
Quantified absolute target	This sets a target year by which or period during which a country reduces or limits its greenhouse gas (GHG) emissions to a specified level compared to a pre-defined baseline year. Absolute targets may relate to the country as a whole or to individual sectors. The definition of this kind of target requires exactly delineating the scope involved (geographical scope, sectors, etc.).	Norway set a target of a minimum 40% reduction in GHG emissions by 2030, compared to the 1990 level. The coverage of the INDC is economy-wide, including the following sectors: energy; industrial processes and product use; agriculture; land use, land use change and forestry; and waste.
Intensity target	This sets a target year by which or period during which a country reduces or limits its GHG emissions relative to a certain indicator, such as GDP or population figures, compared to a pre-defined baseline year. The absolute quantity of GHG emissions in the target year or period therefore depends on drivers like economic or population growth.	China communicated in its INDC that it will lower its CO ₂ emissions per unit of GDP by 40–45% by 2020, compared to the 2005 level.
Deviation from the business-as-usual (BAU) scenario	This specifies by how much and by when a country will reduce its emissions in relation to a baseline scenario. A baseline scenario is a reference case that posits the future events or conditions most likely to occur in the absence of activities taken to meet the mitigation target. A deviation from a BAU scenario may refer to absolute differences in emissions or differences in intensity (emissions per unit). The approach for establishing a BAU scenario based on emission projections must be transparent and include explanations of basic assumptions and the definition of parameters (including key drivers like GDP or population growth).	Mexico has set two possible targets: a 25% GHG emissions reduction by 2030, which is unconditional, and a 40% reduction by 2030, which is a conditional target (i.e. meeting it is subject to international agreements, technical cooperation and access to low-cost financial resources). Both targets are based on emissions reductions relative to a BAU baseline.
Policies and measures	This involves putting policies and measures in place that contain specific and quantified emission reduction impacts. For this type of target a transparent approach (which details any assumptions made and defines the parameters involved) to quantifying the emission reductions attributable to the policies and actions is required.	When Botswana communicated its NAMAs to the UNFCCC in 2011, it included sustainable development policies and measures such as: <ul style="list-style-type: none"> (a) energy efficiency programmes, (b) transport sector policies, (c) building sector standards, (d) minimum energy-performance standards for household appliances.

Given that INDCs should be designed to reflect domestic priorities and national capabilities, it is up to individual countries to define which types of target are most appropriate to their circumstances. Least-developed countries in particular may wish to opt for non-quantified actions as, this way, they do not need to provide clear indications of the emission reductions implied by the target.

Initiating and scoping the development of INDCs

Starting point	Questions	Guidance and good practice examples
1. Identification of the national lead institutions and key stakeholders	Which key stakeholders and institutions have you identified as having what roles in the INDC process?	<p>At the outset national lead institutions and key stakeholders are identified and the stakeholder process is set up, which involves:</p> <ul style="list-style-type: none"> » identifying the key policy/sectoral and technical experts; » producing a work plan for the INDC that includes a clear timeline and milestones; » coordinating roles and responsibilities; » establishing institutional arrangements using existing or new structures (e.g. inter-ministerial roundtables). <p>Throughout the process, several multi-stakeholder consultations with civil society and the private sector will take place. Note that any stakeholder consultation on a certain topic (e.g. on targets and tracking) will ideally occur a number of times (once for each review cycle).</p>
2. Analysis of mitigation potential based on a recent GHG inventory	What information have you provided on past GHG emission and removal trends, and what are your projections for GHG emissions with and without additional mitigation actions? (Describe the approaches, methods, models and key assumptions employed.)	<p>This information is most relevant for targets based around BAU scenarios. However, if this data is available, you can also make use of it when drawing up other public documents involving other types of target.</p> <p>Example</p> <p>According to the GHG inventories in the first and second national communications to the UNFCCC, GHG emissions in the transport sector experienced an average yearly increase of 5% between 2000 and 2010. According to the national transport commission, CO₂ emissions from road transport may double between 2010 and 2030 if current trends persist. A mitigation study carried out by the national research centre has concluded that the introduction of more efficient vehicles and the promotion of public transport could halve increases in CO₂ emissions by 2030.</p>
3. Selection of the INDC type	Which type of INDC have you chosen for your country?	<ul style="list-style-type: none"> <input type="checkbox"/> Quantified absolute target <input type="checkbox"/> Intensity target <input type="checkbox"/> Deviation from the BAU scenario <input type="checkbox"/> Policies and measures
	<p>a. What commitment type or set of types did you use?</p> <p>b. What is your quantified target value?</p>	<p>a. Identify the type of commitments that your INDC includes. For a description of commitment types, see section A.</p> <p>b. Indicate the quantified target value (i.e. the 'headline number') of your commitment(s), such as the 40% set out in example 1 below. If the value is not precisely defined, please provide a range for the mitigation ambition that you aim to achieve. For policies and measures, please describe the expected (quantified) impacts, where possible.</p> <p>Examples of commitment types</p> <ol style="list-style-type: none"> 1. Quantified absolute target: 40% reduction in emissions compared to 1990 by 2030. 2. Intensity target: 20% reduction in emissions intensity per unit of GDP by 2030. 3. Deviation from the BAU scenario: 20% reduction in emissions compared to the BAU scenario by 2030. 4. Policies and measures: 30% of electricity generated using renewable energy resources in 2030; NAMA in place for the building sector.

4. Selection of priority sectors, relevant actors and possible means of implementation (mitigation policies and actions such as NAMAs)	What kinds of activities does/ will your INDC include?	<input type="checkbox"/> Mitigation <input type="checkbox"/> Adaptation ¹
	What national strategies need to be considered when developing the INDC?	Take into account any existing overarching national strategies that might be conducive to or a hindrance when progressing your INDC – for example, low-carbon development strategies, energy concepts, rural electrification, reduction of import dependency, etc.
	What national emission reduction targets and mitigation policies/actions/NAMAs already exist? How could they be incorporated into the INDC?	<p>Describe any long-term emissions goals or short-term targets that are already in place. If possible, describe potential emission reduction targets for specific sectors. Also, consider how information on national mitigation actions and policies that are being planned or implemented could feed into the INDC development process.</p> <p>Examples</p> <ul style="list-style-type: none"> » Long-term target: carbon neutrality by 2050 or long-term peak and decline pathway. » Short-term target: emission reduction of -40% by 2030 compared to a baseline year. » Sectoral target: emission reduction of -20% in the energy sector by 2030. » 20% of electricity supplies generated by renewable sources by 2020. » NAMA for installing landfill gas capture equipment in the country's five biggest landfills.
	<p>Sectors covered by the INDC</p> <p>a. What sectors/subsectors are covered in your INDC?</p> <p>b. Which sector definition does your country use for the sectors covered?</p> <p>c. What emissions sources are included in each sector?</p>	<p>a. Economy-wide scope</p> <ul style="list-style-type: none"> <input type="checkbox"/> Energy <input type="checkbox"/> Industrial processes <input type="checkbox"/> Solvents <input type="checkbox"/> Agriculture <input type="checkbox"/> Land use, land use change and forestry (LULUCF) <input type="checkbox"/> Waste <input type="checkbox"/> Other: <p>b. Indicate whether you use sector definitions in line with the 2006 Intergovernmental Panel on Climate Change (IPCC) GHG inventory guidelines or whether you use different definitions. The sectors defined in the IPCC guidelines are: energy; industrial processes and product use (IPPU); agriculture, forestry and other land use (AFOLU); waste; and other.</p> <p>c. Elaborate on whether all or only some of the sources of the sector's emissions are included. For instance, 'energy' includes all emissions related to fuel combustion, but the INDC may choose to address only the emissions produced by the energy sector or only those resulting from electricity generation.</p>

¹ For further information on developing INDCs that involve adaptation, please see the material produced by the World Resources Institute (WRI) to that regard, available at www.wri.org/publication/designing-and-preparing-indcs.

Data and analysis

5. Identification of promising mitigation actions, and development of a business-as-usual (BAU) scenario and baseline	Have you carried out a mitigation potential assessment? If so, what findings are relevant for defining your INDC?	After having identified potential mitigation actions that could contribute to your INDC, you can prioritise them based on criteria like transformational impacts, barriers, alignment with national economic and development priorities and objectives, costs, etc. Describe how the results of your mitigation potential assessment are relevant for the definition of your INDC.
	What baseline period or reference scenario should your INDC be compared against?	<input type="checkbox"/> Base year <input type="checkbox"/> Base period <input type="checkbox"/> BAU scenario <input type="checkbox"/> Other:
	What is the geographical coverage of your country's INDC?	Please identify the geographical area covered by your INDC. Example The United Kingdom includes different geographical boundaries and territories in its various commitments. The UK's domestic goal includes the UK and its Crown dependencies of the Isle of Man, Guernsey and Jersey. Its Kyoto Protocol commitment, on the other hand, includes the above-mentioned Crown dependencies and also the overseas territories of Bermuda, the Cayman Islands, the Falkland Islands, Gibraltar and Montserrat.
	What base year, base period or reference scenario did you adopt?	Examples GHG emissions are to be reduced by 20% by 2020 compared to the base year of 1990. Per-capita emissions are to be reduced by 30% by 2020 compared to the average of the years 2005–2010. The BAU scenario is considered to be the GHG emissions resulting from an annual growth in electricity consumption of 5% with no changes to the current fuel mix (i.e. no investment in renewables).
	What parameters does your country use for estimating emissions related to the INDC?	Describe the data and methodologies used to estimate emissions. To recap: emission factor x activity = amount of emissions. Examples <ul style="list-style-type: none"> » If the INDC is based on a GHG inventory, the 2006 IPCC Guidelines may be used as methodological guidance and activity data may be derived from national statistics (e.g. energy balance and production statistics). » If the INDC relates to CO₂ emissions from electricity, then electricity generation and fuel consumption data can be sourced from the national utility. CO₂ emission factors may be provided by the utility or can be taken from the 2006 IPCC Guidelines. » Global warming potentials can be taken from the IPCC Fifth Assessment report.
6. Analysis of the political feasibility of identified actions with mitigation potential	What domestic policy decisions are important to consider when selecting the INDC types?	Please describe any national policy decisions that are relevant for your INDC decision, as they might be conducive to or a hindrance when progressing your INDC. Examples A policy for promoting renewable electricity generation through the adoption of feed-in tariffs, a landfill gas collection programme or a support programme for public transport.

	What other strategies, other political priorities, and policy decisions are important to consider when developing your INDC?	When collecting information on existing strategies and policies relevant for the INDC, think about other political issues that are important to your country and how they link up. Will the INDC generate co-benefits to address these issues? Examples Poverty reduction targets and strategies, access to water, information on population and GDP trends and projections, reductions in air pollution, reductions in respiratory disease caused by household smoke, etc.
7. Identification of the technical, economic and social feasibility of prioritised actions	What information have you secured on mitigation potentials and mitigation costs?	This information can be provided if it is available and if it has been prepared for the determination of the national contribution. Many countries have undertaken an analysis based on their GHG inventory or with economic assessment methods such as marginal abatement cost curves (MACCs).
8. Prioritisation of the mitigation actions to be implemented	What methods did you use to prioritise the mitigation actions?	A range of methods and criteria can be applied when prioritising mitigation actions: » abatement costs, » alignment with the country's sustainable development priorities, » technical and political feasibility, » adherence to social and environmental safeguards.
	What information can you provide on co-benefits associated with the target?	This information can be provided if it is available and if it has been prepared for the determination of the national contribution. Identifying co-benefits often proves highly useful when prioritising mitigation actions, because co-benefits help to enhance stakeholder buy-in and mobilise support for implementing the actions. Example The promotion of efficient cookstoves halves households' consumption of fuel wood. This results in increasing households' disposable income, which, in turn, contributes to the national strategy on poverty alleviation.
9. Quantification of the (estimated) GHG reduction potential of the prioritised mitigation actions	What percentage of your total national anthropogenic emissions does your INDC cover?	Please indicate the extent to which your INDC covers the total anthropogenic emissions of your country. Example A per-capita intensity target may cover all of a country's GHG emissions, whereas a policy targeting the transport sector may only relate to a certain portion (e.g. 15%) of that country's overall GHG emissions.
	a. Which GHGs are covered in your INDC mitigation goal/activity? Additional information b. To monitor and track the GHGs included in the INDC, what kinds and quality of data are required, and what access and capacities are needed to manage the data available?	a. Specify exactly which GHGs are included in your INDC. For example, China's national goal to reduce emissions intensity only covers CO ₂ . In 2005, CO ₂ constituted approximately 80% of China's overall GHG emissions. b. For instance, if all GHG emissions in a certain sector are covered, a GHG inventory in the respective sector can be used to track the corresponding emissions. If it is only landfill emissions of CH ₄ that are covered by a certain policy (a NAMA, for example), the collection of data on landfill gas recovery may be sufficient to track emission reductions.

Specific additional questions for individual commitment types

<p>A. Quantified absolute target</p>	<p>Do you intend to fix your base year emissions or to be flexible and recalculate them on the basis of inventory recalculations?</p>	<p>Please explain whether you intend to fix the base year emissions that your target is compared against or whether base year emissions might be recalculated over the course of the target period – for example, in order to achieve consistency over time.</p>
<p>B. Intensity target</p>	<p>a. Which index are you using to calculate intensity? b. What past trends have you identified for this index from the base year to the current year? c. What projected future trends have you identified for this index up to the target year? d. What methodologies and underlying assumptions are required to generate projections for this index?</p>	<p>Please explain which index you are using as the reference for emissions (e.g. GDP, population growth, energy intensity, etc.), how you define it and what data sources you are using. Please also indicate how the index developed over time, by providing past trends as well as projected future trends.</p> <p>Examples</p> <p>» An indicator for GHG emissions per capita GHG emissions comprise the overall GHG emissions from the national GHG inventory according to the 2006 IPCC Guidelines. Data are described in the first and second national communications as well as in the first bi-annual update report. Population data is drawn from the national census. In 2000, per-capita GHG emissions amounted to 1 tCO₂e/capita* and increased to 4 tCO₂e/capita by the year of inventory. If economic growth continues as it has over the past five years, per-capita emissions are expected to increase to 6 tCO₂e/capita in 2020. The aim of this INDC is to limit per-capita emissions to 5 tCO₂/capita in 2020.</p> <p>» An indicator for average CO₂ emissions per kWh of electricity produced Corresponding data for fuel consumption and electricity generation are drawn from the national energy balance and national utility. CO₂ emission factors are taken from the 2006 IPCC Guidelines. Average CO₂ emissions per kWh amounted to 500 gCO₂/kWh* in 2000 (due to the predominant use of natural gas and light fuel oil) and increased to 650 gCO₂/kWh (due to an increase in the number of coal-fired power plants coming on line in the intervening period). The aim of the INDC is to reduce specific CO₂ emissions to 400 gCO₂/kWh in 2020 through the increased use of renewable energy sources. This is based on the assumption that no new fossil-fuel power plants come on line and that solar and wind power schemes are installed that generate a combined output of 10 GW. Further methodological information is included in the national mitigation study.</p>
<p>C. Deviation from the BAU scenario</p>	<p>Methodology for establishing a baseline scenario</p> <p>a. Which starting year have you chosen for your BAU/baseline development? b. What past trends in emissions (and removals) corresponding to the BAU scenario have you identified? c. What are the projected trends in emissions (and removals) for the BAU scenario running up to the target year?</p>	<p>a. Present and discuss the time frame for your scenario: On what basis will the baseline scenario time frame be chosen? Did you choose a single year or a historical emissions period as a starting point? If a single-year projection is chosen, how might this choice impact on emission projections? For instance, the BAU emissions may be drawn from the last available GHG inventory (e.g. for 2010).</p> <p>b. Describe the trend for the selected indicator (e.g. absolute emissions or per-capita emissions) over a previous period (e.g. during the last five years) in order to explain and justify your assumptions regarding the development of the indicator over the baseline period. For instance, GHG emissions in 2005 amounted to 50 million tCO₂e (first national communication) and increased to 80 million tCO₂e (second national communication).</p> <p>c. Describe the projected emission trends for a scenario where policies and measures/mitigation actions (mitigation scenario) have been adopted. For instance, if emission growth continues as it did between 2005 and 2010, GHG emissions may increase to 140 million tCO₂e in 2020. If the mitigation actions laid down in the NAMA proposals are realised, 2020 emissions could be limited to 120 million tCO₂e.</p>

*Where 't' is tonne, 'e' is emissions and 'g' is gram.

<p>d. Does your country use static or dynamic goals? In the latter case, when would it be necessary to recalculate the baseline emissions?</p> <p>e. What assumptions have you made when developing your projections?</p> <p>f. What methodology and models are you using to calculate your BAU scenario?</p> <p>g. What methodology and models are you using to perform sensitivity analyses for key parameters such as GDP and fuel prices?</p> <p>a.</p> <p>b.</p> <p>c.</p>	<p>d. Describe whether you consider your BAU projection to be fixed or whether it will be adapted to changing circumstances under specific conditions over the target period. For instance, BAU emissions projections may be developed assuming a 5% GDP growth rate per year. In a dynamic baseline, corresponding emissions may need to be recalculated based on actual GDP growth rates.</p> <p>e. Ascertain and consider: the important emissions drivers for your country (e.g. economic activity in terms of GDP); structural changes in economic sectors (e.g. a shift from manufacturing to service sector jobs); energy prices/supply/demand by fuel type and emissions intensity by fuel type; population and the degree of urbanisation; technological development; land use practices; fuel prices; carbon prices; and energy demand. Communicate your assumptions regarding how these drivers will develop over the period covered by the INDC and what data you will use.</p> <p>f. Which tools for modelling baseline scenarios have been/will be used and best suit your national circumstances? Are you using a top-down or bottom-up model? Top-down models project overall economic output and the emissions intensity of that output using forecasts of simulated economic interactions between sectors, taking into account their effect on GDP, consumption and investment. The main focus is on the energy supply sectors and their interaction with economic sectors. They include extrapolations of historical trends. Bottom-up models use disaggregated data on specific technologies to generate projections on energy use by type and sector. Typically, they do not capture economic linkages across sectors. For instance, when modelling the energy sector, many countries use the Long-range Energy Alternatives Planning (LEAP) model. For further details see the World Resources Institute's Greenhouse Gas Protocol, Mitigation Goal Standard, An accounting and reporting standard for national and subnational greenhouse gas reduction goals, available at http://ghgprotocol.org/files/ghgp/Mitigation%20Goal%20Standard_1.16.15.pdf.</p> <p>g. What are the key parameters for your country? What variations of these key parameters have you worked with? What are the ensuing changes in the emission mitigation results?</p> <ul style="list-style-type: none"> » Examples for BAU methodologies can be found in the pre-2020 targets of Brazil, Chile, Indonesia, Israel, Korea, Kyrgyzstan, Mexico, Papua New Guinea, Singapore and South Africa. » In Ethiopia the process to develop the baseline is part of their Climate Resilient Green Economy Strategy, a high-profile initiative implemented by the national environmental and development authorities. » South Africa has developed two separate scenarios: one in which no climate policies have been implemented (growth without constraints scenario), and another in which policies have already been implemented (current development plans scenario). » Indonesia, Thailand and Viet Nam all use the LEAP model to develop their emissions scenarios, because it is easy to use and has manageable data requirements. » Ethiopia relies on a combination of simplified top-down and simplified bottom-up modelling. The top-down model projects broad emissions trends, while the bottom-up model is used to produce additional detail at the sectoral level. » In terms of sensitivity analysis, South Africa has assessed the sensitivity of its emissions to future structural changes in the economy to assess the impacts of faster than expected growth in sectors such as services, transport and manufacturing. » Brazil, China, Ethiopia, India, Mexico and South Africa all state that GDP is their most important driver of emissions, with demographic developments commonly cited as the second most important driver. » Information on GHG projections (including BAU and mitigation scenarios) are available in the national communications of Annex I countries (available at http://unfccc.int/national_reports/annex_i_natcom/submitted_natcom/items/7742.php) and in a report on trends and projections in the EU (available at www.eea.europa.eu/publications/trends-and-projections-in-europe-2014/at_download/file).
---	--

<p>D. Policies and measures</p>	<ul style="list-style-type: none"> a. Have you produced a detailed description of the policies and measures you intend to implement as part of your INDC? If so, what is it? b. What is the legal status of these policies and measures? Which of these policies and measures have you factored into the baseline and which are part of your INDC and why? c. Which primary sectors and sub-sectors are targeted in the planned policies and measures? d. What geographical parameters have been set? e. What are the estimated quantified GHG emission reductions achieved through the policies and measures? f. What methodologies are you using to estimate the GHG effects of the policies/measures? g. What reference case are you using to estimate the GHG emission reduction effect? h. Are you using any other quantified targets or indicators for the policies and measures? If so, what are they? i. What are the main implementing agencies? j. What potential interactions with other policies and measures have you identified? 	<p>Examples</p> <ul style="list-style-type: none"> a. Yes. As part of this INDC it is intended to build 10 GW of solar capacity and 5 GW of wind capacity by 2020. b. A national strategy on the expansion of renewable energy is in place to meet the objectives set for 2020. However, the government has only provided funds for pilot plants with an overall capacity of 2 GW of solar and 1 GW of wind. This is therefore adopted as the baseline. Additional capacity, for which no funding is available, is included as part of the INDC. Additional support is required for this purpose. c. The energy generation sector. d. The whole country. e. We estimate that GHG emissions in the mitigation scenario (i.e. with 10 GW of solar and 5 GW of wind) can be reduced against the baseline scenario by 8 million tCO₂ in 2020. f. It is assumed that the policy will result in the construction of power plants harvesting 8 GW of solar power and 4 GW of wind power over and above the levels set for the baseline. It is estimated that the new plants will produce 16,000 GWh of electricity. Based on the country's current levels of electricity-based CO₂ emissions (500 tCO₂/GWh), a reduction of 8 million tCO₂ can be expected. g. See point b. above for the definition of the baseline and the mitigation scenario. h. Yes. Additional funds acquired (through a renewables NAMA) are recorded and published annually. i. The Ministry of Energy. j. Interactions with the support programme already in place for pilot renewable power plants have been identified (see point b. above).
---------------------------------	--	---

Designing INDCs

<p>10. Definition of the national and/or sectoral targets and embed them in comprehensive policies/strategies (LEDS)</p>	<p>a. Is your INDC goal a single- or multi-year goal?</p> <p>b. What target year or target period has your country opted for?</p> <p>c. When defining your target period, did you include short-, medium- and long-term goals, or a combination of all of these? Explain your approach.</p> <p>d. If you have set a multi-year goal, is it an average, annual or cumulative multi-year goal?</p>	<p>Examples</p> <p>a. State whether you want to achieve your commitments by a specific target year or over several years. Single-year goals aim to limit emissions in one future year while multi-year goals aim to limit cumulative emissions over multiple years (target period).</p> <p>b. State the target year or period in which you are aiming to meet your commitment.</p> <p>c. It is helpful to determine a GHG emissions trajectory, including short-term goals and milestones, that will enable you to meet the commitment. Such a trajectory could also specify which regions are to be targeted first, how the implementation is distributed over time and which sectors are to be prioritised (if relevant).</p> <p>d. Average multi-year goals aim to reduce emissions by an average amount over a given time period and do not include specific targets for each year. Annual multi-year goals set specific emission reduction goals for each year of the time period (e.g. a 20% reduction below base year emissions by 2020, 22% by 2021, 24% by 2022, etc.). Cumulative multi-year goals aim to reduce total emissions over a target period to a fixed absolute quantity (also known as carbon budgets).</p>
	<p>What is your goal in terms of emission reduction levels?</p>	<p>Please quantify the expected overall emission reductions corresponding to the target type chosen – for example, absolute reductions (e.g. 20 million tCO₂e against the base year/base period/BAU scenario) or relative reductions (e.g. a 20% reduction in per-capita emissions or a 20% reduction in comparison to BAU emissions).</p>
	<p>Have any milestones been set at regular intervals and what are they? How will progress be tracked and evaluated throughout the target periods?</p>	<p>Describe the steps for implementing your INDC. How do you monitor progress towards reaching your target or interim milestones? What mitigation policies are being implemented or planned that will meet the commitment?</p> <p>Examples</p> <ul style="list-style-type: none"> » Emissions intensity per capita is calculated biannually. » Installed renewable capacity is recorded on an ongoing basis.
	<p>Is there a national long-term climate change strategy/LEDS?</p>	<ul style="list-style-type: none"> » If your country has formulated a top-down vision of a pathway or range for the long-term peak and decline of GHGs, detail what this entails. » If your country has officially announced long-term mitigation commitments (i.e. submitted them to the UNFCCC) or submitted information on long-term mitigation pathways (i.e. submitted it to the UNFCCC in a national communication or biennial update report), be sure to include these actions.
	<p>Is there an institution and/or committee responsible for the coordination and implementation of the national climate policy?</p>	<p>Synchronising all your country's political processes on climate change mitigation is essential to successfully embed an INDC target into an existing long-term climate change strategy. As such, it is essential to identify (a) the relevant institutions or committees responsible for the coordination and implementation of national long-term climate policies and (b) those responsible for the development of INDCs.</p>

Optional: Decide on how emissions and removals from the land use sector are to be treated

Minimum information*

- a. Does your country include the land use sector in its INDC?
- b. If so, which land use sector accounting approach does your country use?
- c. Which forest and land-use categories or activities are you covering in your INDC (and how do they differ from your inventory for the LU-LUCF sector)?
- d. What reference case are emissions and removals from forests and land use being accounted against? What assumptions and methodologies were used to establish the reference case (where applicable)?

*Not mandatory, but recommended to ensure transparency and clarity.

Additional information

What additional accounting rules are assumed for forest or land use (e.g. related to the effects of natural disturbances, or human-induced vs natural impacts) or for the accounting of harvested wood products?

When it comes to defining INDCs, the forest and land-use sector presents specific challenges, because it can be a source of emissions as well as a carbon sink. Moreover, the accounting method adopted can significantly impact on the assessment of the progress towards and meeting of the target. For this reason, it is important to ensure that the role this sector plays in an INDC and the accounting methods used for assessment are precisely defined.

- a. Explain whether emissions and removals from the land use sector will be included in or excluded from your INDC and what contribution this sector is supposed to make towards reaching the target.
- b. Explain whether you are using an activity-based or land-based accounting approach for assessing emissions from and removals by the land use sector. A land-based accounting approach determines the scope of accounting based on six land use categories: forestland, cropland, grassland, wetland, settlement, and other land. The managed land proxy approach helps to identify areas of land that are 'unmanaged', or excludes them from the target boundary based on the assumption that any fluxes occurring on those lands are not directly attributable to human influence. If a managed land proxy approach is used, parties should ensure that they include all lands subject to direct human intervention in the scope of the land covered by the INDC, as well as lands on which any identifiable portion of emissions or removals result from anthropogenic activity. The activity-based accounting approach bases the accounting on a predetermined set of land use practices. For example, the activity 'grazing land management' includes those emissions produced or captured by livestock ranching, fire prevention, and activities related to savannah restoration. Activity definitions are jurisdiction specific. In order to uphold the environmental integrity of land use accounting, if activity-based accounting is chosen, parties should include all anthropogenic activities that result in changes in carbon pools or fluxes and emissions resulting from land use change activities within the selected land use category or categories included in the INDC.
- c. Explain which of the six forest and land-use categories defined by the IPCC (i.e. forestland, cropland, grassland, wetland, settlement, and other land) are covered in your INDC.
- d. State whether you are using an accounting method relative to base year/period emissions (net-net accounting method), to a reference case of zero emissions without reference to a base year/period, to baseline scenario emissions (gross-net accounting method), or to land sector emissions in a baseline scenario (forward-looking baseline accounting method). For guidance on additional accounting rules for the land use sector, please refer to the relevant IPCC guidance for LULUCF.

Transparency and accounting

11. Development of a monitoring, reporting and verification (MRV) system and national accounting rules

Minimum information

- a. Do you intend to use market mechanisms to meet your commitment?
- b. Can you quantify the expected use of international market-based mechanisms to meet your commitment? What limits are to be applied to this expected use?
- c. What types of international market-based mechanisms do you intend to use?

Additional information

- d. Are the market mechanisms you intend to use based inside or outside your country?
- e. What rules or standards will be used to carry out the MRV of how market mechanisms are used? Are there any requirements for participating in the market mechanism? Which entities are entitled to participate? Is there any tracking mechanism in place for the use of units originating from market mechanisms? Do you have any provisions in place to avoid any double counting of units?

- a. Describe the extent to which you are planning to use market mechanisms to meet your commitment.
- b. Indicate how much of your INDC will be delivered through market mechanisms – e.g. up to 10% of emissions reductions will be achieved by acquiring transferable emissions units.
- c. Explain whether you intend to use emission allowances from emission trading programmes or credits from offsetting mechanisms for realising your INDC – e.g. the Clean Development Mechanism (CDM), Verified Carbon Standard, etc.
- d. / e. To answer this question you can describe how the credits used will be real, additional, permanent, transparent, verified, unambiguously owned and/or addressing leakage. Double counting could, for example, be avoided by: tracking units in the domestic registry (reference to national laws could be provided), participating in the International Transaction Log, or writing up agreements between the buyer and seller (to be provided upon request). Also, methodologies from established schemes like the CDM can be used for MRV.

For further guidance on the use of market mechanisms, please see the Climate Change Expert Group's 2014 paper GHG or not GHG: Accounting for diverse mitigation contributions in the post-2020 climate framework, available at www.oecd.org/env/cc/GHG_or_not_GHG_CCXGsentout_May2014_REV.pdf.

Evaluating costs and financial support needs

<p>12. Identification of financing and implementation options for the prioritised actions</p>	<p>What are the total costs and benefits of your INDC?</p>	<p>As a basis for an economic impact assessment and a funding strategy, it is recommended to perform an overall cost-benefit analysis of your INDC. You should consider the various categories of costs and benefits and assess these throughout the preparation and implementation of the INDC.</p> <ul style="list-style-type: none"> » Costs for the preparation of the INDC will be pre-2020 and will, for example, include the costs involved in performing a feasibility study to assess the potential of carrying out projects as part of the INDC. » Implementation costs include, among others, capital costs, operating and maintenance costs, administration costs, and the costs involved in 'enabling' the mitigation actions in question (capacity building, technical support, awareness raising, and marketing). » Benefits include the GHG mitigation outcomes as well as the various co-benefits that are largely context and sector dependent. <p>Suitable methods for cost assessment include marginal abatement cost curves (MACCs), which relate costs to the GHG mitigation effect. For more comprehensive economic assessments, modelling exercises, such as Computable General Equilibrium (CGE) models and others, can be employed.</p>
	<p>What domestic financial resources can be used to fund the delivery of your INDC?</p>	<p>It is recommended to, first, estimate the budgetary costs of unilateral mitigation actions in the INDC and, once this is done, work out what additional (international) support will be needed. Related activities can include:</p> <ol style="list-style-type: none"> a. analysing national budgets and determining available government resources for your INDC; b. identifying suitable instruments to mobilise the private sector, such as: <ul style="list-style-type: none"> » low-carbon bonds, » concessional loans, » public equity, » guarantees, » public-private partnerships, » special purpose investment vehicles (for certain technologies). <p>All these instruments can be supported through public grant components and combined in asset packages that mobilise different dimensions of investments from different classes of investors and cascade those investments down to the level of technical implementation.</p>
	<p>What kind of international financial support for existing mitigation and adaptation activities have you identified?</p>	<p>To build trust and accountability with regard to climate finance commitments and to monitor trends and progress in climate-related investment, track and report on the financial flows that support current climate change mitigation and adaptation.</p>
	<p>What kinds of support have you identified as being necessary for the achievement of your INDC?</p>	<ul style="list-style-type: none"> » Calculate the financial gap between the total cost of the INDC and the domestic finance available. » Describe the potential kinds of support that you have identified as necessary for delivering your INDC. As a minimum, this should include information on the scale of support required.

<p>What sources and methods of external financing have you identified, if any?</p>	<p>A wide range of options for accessing climate finance exists, such as:</p> <ul style="list-style-type: none"> » multilateral funds dedicated to climate finance, » multilateral development banks, » private finance, » bilateral funding mechanisms. <p>For a detailed overview of international climate finance sources, please see GIZ's 2012 paper The Climate Finance Cascade. A NAMA financing mechanism in a nutshell, available at http://mitigationpartnership.net/sites/default/files/giz2013-en-climate-finance-cascade.pdf.</p> <p>Identify possible methods of financing – for example, loans (and loan guarantees), grants from government budgets and international institutions, domestic banks, international banks, and credit agencies.</p>
<p>What case are you making to justify your request for international support (where applicable)?</p>	<ul style="list-style-type: none"> » Explain why the planned mitigation actions are needed, referring, for instance, to their part in delivering the INDC or its co-benefits. » Document the barriers and challenges that are preventing the mitigation actions from being implemented. » Identify and document the baseline conditions in the case that the mitigation actions are not carried out. » Describe what actions need to be taken to tackle and overcome the barriers and challenges. » State why, realistically, the actions may be wholly or largely insufficient if they are undertaken without the additional funding requested in the short or long term. » Describe how the funding will leverage cofinancing and how the combined effect of these two funding streams will help to realise the desired mitigation effects. » To develop and support the justification for funding the action, clearly document all information and assumptions.
<p>What is your financing plan?</p>	<p>To develop a financing plan that convinces investors, the following four steps are proposed:</p> <ul style="list-style-type: none"> » Plan how to pay for the costs of implementation. » Present your investment financing plan to potential financiers and request them to provide support/direct finance. » Complete a terms sheet (i.e. a document outlining the non-binding terms and conditions of an agreement) in which financiers should set out the criteria they will use for refusing credit applications. <p>Finalise the terms sheet with the technical deliverer and ascertain whether it is possible to secure financing from the financial markets.</p>



Compiling/drafting INDCs

13. Compilation of the INDC and get it ready for communication to the UNFCCC	What other specific conditions or circumstances are relevant for your INDC, if any?	For example, the joint fulfilment of commitments by EU member states.
	In what ways is your contribution fair and ambitious? How have you factored fairness and ambitiousness into your INDC?	<p>Describe how any underlying equity/fairness considerations have been treated in your INDC. Detail the approaches and concepts you have used to operationalise these equity and fairness considerations.</p> <p>You also need to describe how your contribution is ambitious by, for example, relating it to the results of regional GHG reduction modelling that meets the 2°C objective, or by describing how it relates to mitigation efforts that you have previously undertaken.</p> <p>Approaches and concepts to operationalise equity and fairness can include such things as responsibility, capability, equity, and cost effectiveness (such as equal marginal abatement costs). You can also refer to any studies and reports produced on the underlying situation.</p>



Resources and further information

The following documents were referred to when writing this paper. They contain useful further information on specific actions and factors involved in defining and tracking progress towards delivering an INDC.

- World Resources Institute (2014), *Greenhouse Gas Protocol, Mitigation Goal Standard, An accounting and reporting standard for national and subnational greenhouse gas reduction goals*, Washington DC – available at http://ghgprotocol.org/files/ghgp/Mitigation%20Goal%20Standard_1.16.15.pdf
- Hood, C. et al. (2014), *GHG or not GHG: Accounting for diverse mitigation contributions in the post-2020 climate framework*, Paper No. 2014(2), Climate Change Expert Group – available at http://www.oecd.org/env/cc/GHG%20or%20not%20GHG_CCXGsentout_May2014_REV.pdf
- Levin, K. et al. (2014), *Ex-ante clarification, transparency and understanding of intended nationally determined contributions*, World Resources Institute, Washington DC – available at http://www.wri.org/sites/default/files/wri-wp-national_contributions-v5.pdf
- Herold, A. et al. (2014), *Up-Front Information for Emission Reduction Contributions in the 2015 Agreement under the UNFCCC*, Öko-Institut e.V., Berlin – available at <http://www.oeko.de/oekodoc/2022/2014-607-en.pdf>
- World Resources Institute (2014), *Greenhouse Gas Protocol, Policy and Action Standard, An accounting and reporting standard for estimating the greenhouse gas effects of policies and actions*, Washington DC – available at <http://ghgprotocol.org/sites/default/files/ghgp/Policy%20and%20Action%20Standard%203.11.15.pdf>
- Höhne, N., C. Ellermann and H. Fekete (2014), *Process Guidance for Intended Nationally Determined Contributions (INDCs)*, Ecofys Germany GmbH on behalf of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH – available at <http://mitigationpartnership.net/international-partnership-mitigation-and-mrv-2014-process-guidance-intended-nationally-determined--0>
- UNFCCC (2011), *Compilation of information on nationally appropriate mitigation actions to be implemented by Parties not included in Annex I to the Convention* – available at <http://unfccc.int/resource/docs/2011/awglca14/eng/inf01.pdf>
- Levin, K. et al. (2015), *Designing and Preparing Intended Nationally Determined Contributions (INDCs)*, World Resources Institute and UNDP – available at http://www.wri.org/sites/default/files/uploads/Designing_and_preparing_INDCs_Advance_Unedited_Version_April_9.pdf
- Lacy, S. et al. (2015), *Nationally Appropriate Mitigation Actions (NAMAs) – Steps for Moving a NAMA from Idea towards Implementation*, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Eschborn, Germany – available at http://mitigationpartnership.net/sites/default/files/u1585/nama_tool_9.0.pdf
- de Wit, C. et al. (2012), *Building blocks for Nationally Appropriate Mitigation Actions*, Ecofys Germany GmbH by order of the African Development Bank – available at <http://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Building%20Blocks%20for%20Nationally%20Appropriate%20Mitigation%20Actions.pdf>