



Options for assessing ambition of mitigation commitments beyond Paris

by

Frauke Röser, Hanna Fekete, Niklas Höhne, Takeshi Kuramochi
NewClimate Institute, Cologne

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NewClimate Institute, Am Hof 20-26, 50667 Cologne, www.newclimate.org

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Content

Acronyms	3
1 Introduction	4
2 Description of current efforts to assess ambition of individual countries.....	5
2.1 Activities of Parties to assess INDCs	5
2.2 Recommendations of the Intergovernmental Panel on Climate Change.....	5
2.3 UNEP Emissions Gap Report	7
2.4 Independent activities	7
3 Aims and requirements related to assessing ambition	8
4 On basis of what?	9
5 Process options for connecting assessment of INDCs to the negotiations.....	11
Option A – Civil society & research	11
Option B – Neutral body.....	12
Option C – Technical committee	13
Option D – Peer Review.....	13
6 Conclusions	14
7 References.....	15

Acronyms

UNFCCC	United Nations Framework Convention on Climate Change
INDCs	Intended nationally determined contributions
IPCC	Intergovernmental Panel on Climate Change
EIT	Economies in Transition
MAF	Middle East and Africa
LAM	Latin America
OECD	Organisation for Economic Co-operation and Development
UNEP	United Nations Environment Programme
GDR	Greenhouse Development Rights
CAT	Climate Action Tracker
BAU	Business as usual

1 Introduction

The Lima Call for Climate Action invites all Parties to the United Nations Framework Convention on Climate Change (UNFCCC) to submit their intended nationally determined contributions (INDC) “well in advance of the twenty-first session of the Conference of the Parties in a manner that facilitates the clarification, transparency and understanding of the intended nationally determined contributions” (UNFCCC, 2014). Parties “ready to do so” were asked to submit their INDCs in the first quarter of 2015, others until the 1st of October 2015. The INDCs are expected to be anchored in the new international agreement to be adopted at the 21st session of the Conference of the Parties (COP21) in Paris later this year. As of 13 November 2015, 161 countries (including the European Union member states) have submitted their INDCs (NewClimate Institute, 2015).

As yet, the future legal status of the contributions is unclear. It is also yet to be decided whether the INDCs are the starting point of a continuous cycle of contributions. This would foresee agreement on a process or so-called ratchet up mechanism which would require Parties to review and increase the level of ambition of their contribution in order to close the pre-2020 emission gap as well as achieve the longer term climate goals. It would also mitigate the risk of locking in low ambition into a new agreement.

The Lima decision mandated the Secretariat to publish the INDCs on the UNFCCC website and to prepare a synthesis report by 1 November 2015. The published report (UNFCCC, 2015) assessed the aggregate level of effort of those INDCs submitted by the October cut-off date. A process to assess individual INDCs at the international level was not agreed to as several Parties were opposed to a formal international assessment, especially *ex ante*. The report also did not indicate the possible temperature increase resulting from the submitted INDCs.

At the same time, INDC submissions are also being scrutinised by governments, think-tanks, campaigners and other observers to the process to assess their sufficiency with regard to the 2°C climate goal (see for example: Boyd, Turner, & Ward, 2015; Climate Action Tracker, 2015a; Reilly et al., 2015; UNEP, 2015).

The assessment of the aggregate as well as individual level of ambition of INDCs is important for several reasons. In the run up to Paris it is relevant to understand whether the bottom-up INDC process actually produces the results needed to close the emissions gap. In the likely event that this is not the case it will provide insights into the level of corrective action required by the international community. The assessment of individual INDCs allows for transparency in the process. It enables a better understanding of whether individual contributions are fair considering the common climate goal and individual country circumstances and whether countries have potential for further emissions reductions. Both help to build much needed trust to enable a constructive, open and fruitful negotiation process and outcome.

This paper provides an overview of options to assess mitigation commitments before Paris and beyond. This includes a review of current activities to assess individual INDCs as well as a discussion of some of the attributes and requirements such assessment needs to fulfil. The paper goes on to explore options of how the assessment could be carried out and linked to the UNFCCC process, followed by a discussion of methodological approaches to assess the ambition of mitigation contributions. In conclusion, it provides some recommendations on a feasible and realistic way forward drawing out potential opportunities and challenges in the process.

2 Description of current efforts to assess ambition of individual countries

As described in the introduction of this paper, the UNFCCC has the mandate to assess the overall emission level resulting from the INDCs. There is however no official process that follows up on the outputs of this assessment if it turns out that proposed emission reductions are insufficient to limit global temperature increase to below 2°C.

Several activities where stakeholders assess INDCs already take place. As part of the UNFCCC negotiations, Parties assess the ambition of their own INDCs in the process of their development. Further, Parties also evaluate submissions of other countries to be able to react to them in the negotiations.

Outside the UNFCCC, a number of activities are taking place which analyse and evaluate individual countries' INDCs, and their overall impact. The following paragraphs describe the activities in further detail.

2.1 Activities of Parties to assess INDCs

During the development of their INDCs, some Parties developed approaches to put their INDC in the context of a fair distribution of emission reductions between countries. The upfront information which the Lima Call for Climate Action requires specifically asks for information on “how the Party considers that its intended nationally determined contribution is fair and ambitious” (UNFCCC, 2014). The countries which have submitted INDCs so far¹ mostly use arguments based on their development status, their share of global emissions, and their per capita emissions. Some mention improvements against past developments or current trends (e.g. Australia, United States of America) to justify their commitments. Others refer to past action (e.g. Japan) or their mitigation potential (e.g. South Korea). A few countries also indicate that their INDC is in line with efforts required as indicated by the Intergovernmental Panel on Climate Change (IPCC).

Some countries, for example South Africa (Government of South Africa, 2015), have developed their own frameworks to calculate their fair share of emission reductions per country. These activities mostly happen outside the public domain. It remains to be seen if Parties publish their assessments during the negotiations in Paris, in order to justify their position and increase the pressure for higher ambition.

It is quite clear that the criteria countries use for assessing level of ambition differ widely, reflecting the subjective nature of the concepts of fairness and ambition. Given the diversity of approaches it seems unlikely that Parties will agree on a specific common framework in Paris or thereafter, or if so it will be relatively broad.

2.2 Recommendations of the Intergovernmental Panel on Climate Change

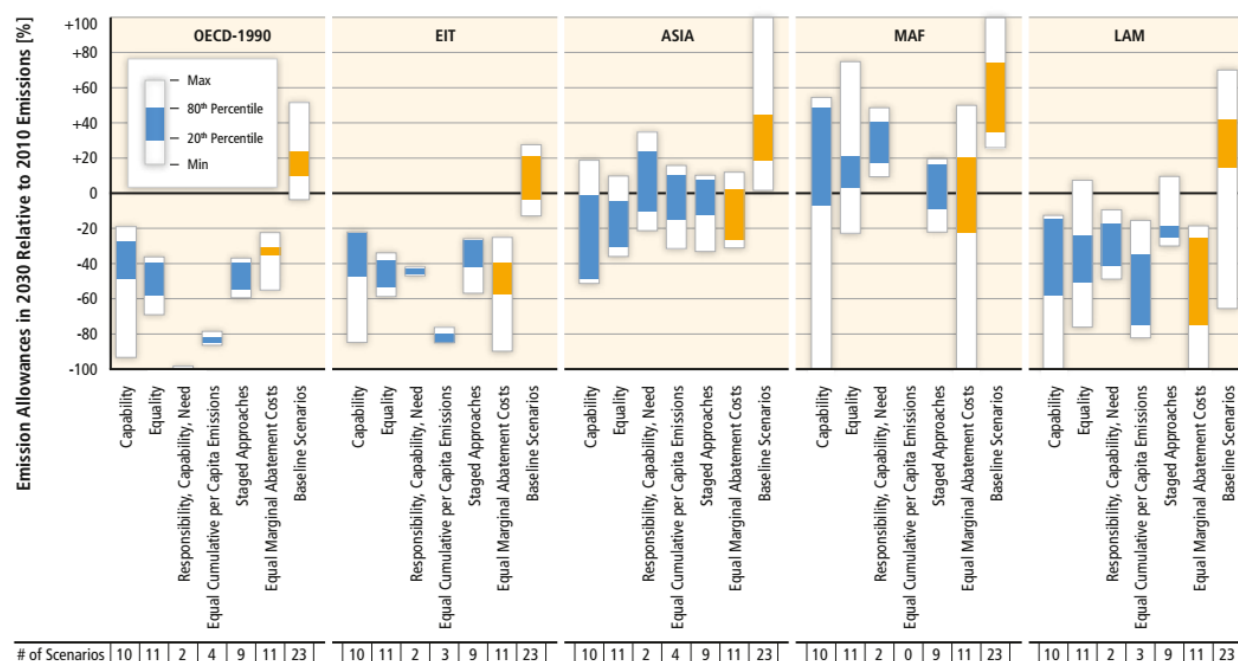
The IPCC report provided suggestions on how to share the mitigation efforts amongst countries in the Fourth Assessment Report (AR4) in 2007. The report suggests emission allowances for the years 2020 and 2050 for Annex I and non-Annex I countries, required to keep concentration levels of CO₂ in the atmosphere to 450ppm: Annex I countries should reduce emissions by 25 to 40% below 1990 by 2020, and by 80 to 95% by 2050, while emissions from non-Annex I countries should show substantial deviation from baseline in the regions Latin America, Middle East, East Asia, and Centrally

¹ See [http://www4.unfccc.int/submissions/indc/Submission Pages/submissions.aspx](http://www4.unfccc.int/submissions/indc/Submission%20Pages/submissions.aspx), accessed on 24 August 2015

Planned Asia in 2020. In 2050, all non-Annex I countries should show substantial deviations from baseline (den Elzen & Höhne, 2008, 2010; Gupta et al., 2007).

The Working Group III Contribution to the Fifth Assessment Report (AR5) published in 2014 includes a synthesis of more than 40 studies on effort sharing, indicating potential “fair” emission levels in 2030 for five regions (**Error! Reference source not found.**) (Clarke et al., 2014).

Figure 1: Emission allowances in 2030 relative to 2010 emissions by effort sharing category for 2°C compatible mitigation scenarios (reaching 430 – 480 ppm CO₂eq. in 2100). Source: IPCC AR5 WGIII, Figure 6.28, Chapter 6 (Clarke et al., 2014), adapted from (Höhne, den Elzen, & Escalante, 2014).



Notes: EIT: Economies in Transition, MAF: Middle East and Africa, LAM: Latin America. For the OECD90 list, please refer to the IPCC definition². The different effort sharing categories are described in detail in (Höhne, den Elzen, et al., 2014).

The results illustrated in the graphic indicate that for scenarios reaching concentration levels between 430 ppm and 480 ppm CO₂e in 2100, required reductions of roughly 50% below 2010 for OECD countries with a large range and a third below 2010 for Economies in Transition (EIT). Further, Asia should be at 2010 levels in 2030, and Latin America well below 2010 levels (Clarke et al., 2014; Höhne, den Elzen, et al., 2014). Only the region “Middle East and Africa” has some space to increase emissions still, given their very low responsibility and capability.

Analyses like these make it possible to assess countries’ mitigation offers under the consideration of different equity definitions. The choice of effort sharing category makes a large difference for some regions, but in most cases the overall results still give an indication of the direction of where emissions in 2030 should be headed on average for the region.

The IPCC also shows global least cost pathways (“Equal Marginal Abatement Costs” in Figure 1), which illustrate how emission reductions (not allowances) could be distributed to the five different

² <http://www.ipcc.ch/ipccreports/sres/emission/index.php?idp=149>

regions applying only techno-economic considerations. This is not necessarily in line with the results from effort sharing calculations, as those refer to emission allowances, not physical emissions. The difference between the results from the global least cost scenarios and the effort sharing could be interpreted as an indication of which countries should provide and which should receive means of implementation, and at which levels. This concept might guide countries in the formulation of their conditional targets or their contribution to international climate finance.

IPCC only provides numbers for five regions, of which the average does not necessarily reflect circumstances of each country in this region. The underlying article provides results for 10 regions. Depending on whether the country has higher or lower responsibility and capability (for effort sharing) and potential (for global least cost scenarios) than the average of its region, it should orient itself towards the more or less stringent end of the indicated reductions, respectively.

2.3 UNEP Emissions Gap Report

In previous years, the United Nations Environment Programme (UNEP) Emissions Gap Report assessed the “emissions gap” – the difference between countries’ 2020 emission reduction pledges, and what is required for holding global warming below 2°C. The UNEP report synthesises publicly available information (compare next section). Since 2013, it has also analysed the emission levels resulting from trajectories including current policies of individual countries, compared to their emission reduction pledges for the year 2020.

In 2015, UNEP is tracking the aggregate effect of INDCs on global emission levels. Similar to the UNFCCC synthesis report, this will indicate whether submitted INDCs are sufficient to hold global warming below 2°C or whether a gap remains. The executive summary of the upcoming 2015 Emissions Gap Report (UNEP, 2015) indicated that INDCs still fell short of up to 12 GtCO_{2e}/a (range 10 – 15 GtCO_{2e}) in 2030 even when both unconditional and conditional INDCs were implemented.

The authors and the steering committee are based in different regions around the world, reflecting a relatively wide range of geographical backgrounds.

2.4 Independent activities

There are several non-governmental initiatives which evaluate the overall effect of the INDCs on the global level. Some also indicate what a fair share of emission reductions could be. Initiatives include the following:

- **Climate Action Tracker:** The Climate Action Tracker (CAT)³ is an independent, science-based assessment of climate change mitigation targets and policies of individual countries. It provides estimates of absolute emission levels resulting from the INDCs, as well as an indication of whether the contribution is in line with what effort sharing studies recommend for the individual countries. The CAT also aggregates the actions of all countries to the global level, and determines the expected temperature increase resulting from those emission levels.
- **Greenhouse Development Rights Equity Calculator:** The Greenhouse Development Rights (GDR) Equity Calculator⁴ uses one effort sharing approach to indicate a potential fair emission level for all countries. The GDR approach relies on the idea that only individuals above a certain threshold of per capita GDP should participate in the regime. This means, that for some countries very little action is required for many years. As a result, the reductions are very stringent for the remaining (richer) countries, often leading to negative emissions allowances

³ www.climateactiontracker.org

⁴ calculator.climateequityreference.org

already in the next decade. The Civil Society Equity Review of INDCs⁵ is based on calculations from this platform.

A number of other modelling groups analyse the ambition of the overall level of emissions, but not the ambition of individual countries. Among those are the Netherlands Environment Assessment Agency's INDC assessment⁶, University of Melbourne⁷, London School of Economics (Boyd et al., 2015), Massachusetts Institute of Technology (Reilly et al., 2015) and the Danish Energy Agency⁸.

3 Aims and requirements related to assessing ambition

The assessment of the ambition of individual contributions is an important exercise to understand the sufficiency of contributions with regard to the objective of the UNFCCC (Article 2). It will also provide transparency on whether the contributions are in line with the general principles of the convention on fairness and common but differentiated responsibilities (Article 3.1). The lack of agreement on a formal process to allow for the assessment of INDCs ex ante as well as, so far, on future review cycles, underlines the importance of assessments of ambition outside the UNFCCC domain.

Parties' views on the need for individual assessments of INDCs diverged significantly. Some Parties including the European Union (EU), the Independent Association of Latin America and the Caribbean (AILAC), Marshall Islands and Norway highlighted the value of assessing contributions both at the aggregate as well as individual level, whereas several countries including both developed and developing countries opposed an official assessment of individual ambition, for example facilitated by the UNFCCC Secretariat (van Asselt, Sælen, & Pauw, 2015).

The synthesis report prepared by the UNFCCC Secretariat and several informal assessments of INDCs introduced above can directly inform the forthcoming negotiations on the new agreement. In case of a shortfall of ambition, Parties will have the opportunity to revise their ambition upward before anchoring the contributions in the agreement. However, given the short timeframes and the formal, political sign-off processes of INDCs, the assessments are likely to be most relevant in the context of future contribution cycles if agreed and formalised in Paris.

Observers regret the failure to agree on a process or space for countries to more formally share and exchange on their contributions as a "missed opportunity for a constructive discussion to build understanding and confidence" (WRI, 2014). Beyond the analytical value of providing insights into the likely future emissions gap and scope for further action, an open and comprehensive review of individual contributions has many softer benefits. This includes the mentioned increase in trust and appreciation of national differences as well as the benefit of learning and advancing towards a common understanding of what fairness means in a global context.

An assessment of the ambition of individual contributions – whether done formally within the UNFCCC process or outside – should follow a number of principles in order to attain the necessary credibility and best serve its purpose.

First, all assessments need to be **transparent**. This includes transparency both on the objectives and drivers of the assessment body or institution as well as the methodology applied. Clear information and details on the approach, references and methods should be provided.

⁵ http://civilsocietyreview.org/wp-content/uploads/2015/10/CSO_summary.pdf

⁶ <http://infographics.pbl.nl/indc/>

⁷ <http://www.climate-energy-college.net/indc-factsheets>

⁸ <http://www.ens.dk/en/node/6332>

The methodology and approach used to assess contributions also needs to ensure that the results are **comparable**. This is a particular challenge as there is no formal agreement on the upfront information to be provided as part of the INDCs. Although there is high level guidance on the type of information that should be included, the level of detail, scope and types of INDCs are very diverse (UNFCCC, 2015). The assessment of the ambition of these different INDCs therefore needs to be particularly mindful and transparent on the methods used to compare individual contributions.

In order to ensure that the outputs are credible and broadly accepted by policymakers it is important that the assessment takes a **neutral** position and best it be undertaken by an independent organisation which is perceived as neutral by the policy community. The approach and outcomes could also be transparently validated and peer reviewed.

A **robust and science based** approach will add to the credibility of the results.

In order for the assessment to drive ambition and encourage Parties to reflect on further action it is important to frame the assessment in a **positive, constructive and country-specific** way. Beyond creating a shared understanding of countries' contributions the assessment of ambition can itself help to increase the ambition of future contributions and drive further action. Sharing information and analysis on other countries' approaches facilitates learning, provides an opportunity for feedback and exchange of ideas which in turn may encourage reciprocal action (van Asselt et al., 2015). One way to raise ambition is by illustrating the benefits of increased ambition as part of the assessment. This may include highlighting specific aspects such as impact of mitigation activities on improving adaptation and resilience as well as the impact of INDCs on broader development objectives, including social, economic and other environmental benefits (see for example (Day, Höhne, & Gonzales, 2015)).

The results from the analysis of the ambition of INDCs are useful to inform policy makers at the country level in order to advance national policy processes. In this context, it is important to involve those national stakeholders in the process who actually take the decision on whether and how to increase ambition. These are typically line ministries, the national cabinet but may ultimately also include the head of government. At the international level the assessment, on aggregate, will of course provide a clear understanding of where we stand in view of our common climate goal. In addition, the assessment of different country contributions and country contexts provides useful insights to advance the debate on climate equity and fairness. Guidance is needed on what a fair contribution means and how efforts under the UNFCCC can be shared in a way that they are perceived as equitable by countries and other stakeholders.

4 On basis of what?

Reviewing and assessing the ambition of INDCs should, independently of who conducts this analysis, rely on a fixed method, ensuring consistency and comparability among the results for countries.

There are several methodologies and approaches to assess the ambition of individual INDCs which are outlined in this section. No single approach is per se "better" than the other. Ideally, all five approaches will be considered to best reflect the diversity of countries in terms of, for example, different development status, industrial structure, capabilities and responsibilities. In some cases, the approaches may come to similar results in others they may highlight important differences. Applying the different approaches not only allows for the comparison of proposed country efforts but can also help to support domestic processes to develop INDCs or future contributions. The authors of this report have proposed the following five approaches (Höhne, Ellermann, & Fekete, 2014):

- **Comparison to business as usual (BAU):** the ambition level can be demonstrated with a comparison to a historic trend or a projection to the future - the business as usual scenario.

For a country without climate policies, the emission trend can be significantly altered through the introduction of new policies. Stronger deviation from the BAU scenario means higher ambition. The downside of this approach is that it can be difficult to define a BAU scenario as they are an interpretation of what will happen in future and are therefore uncertain and strongly dependent on the assumptions used.⁹ Many unforeseeable factors and events can influence future emission trends. Furthermore, many countries have already, and over time all countries should implement climate policies that will need to be considered, adding to the complexity of defining plausible BAU scenarios.

- **A comparison to effort sharing:** the extent to which a particular ambition level is “fair” can be illustrated through the comparison to effort sharing approaches as already explained in Section 2. A wide range of literature allocates global emissions and emission reductions to individual countries based on effort sharing principles. The principles include equality (e.g. that per capita emissions should converge for all countries), responsibility (e.g. those who emitted more in the past now have to reduce more) or capability (e.g. those with more economic powers should do more). Depending on the effort sharing approach chosen, results may differ significantly. Still the full range of results can be an indication of the compatibility of a country’s contribution with the 2°C limit. For example, the CAT gives the rating of “inadequate” when an INDC is less ambitious than the most lenient effort-sharing approach for that particular country.¹⁰
- **Comparison to mitigation potential:** Many countries and research institutions have undertaken studies to assess options to mitigate greenhouse gas emissions and the associated costs. These may be grouped into three categories: options at negative or zero costs; options with some moderate costs but also some co-benefits; and options with ambitious reductions. If a country’s contribution is in the range of the co-benefits or the ambitious reductions, it can be considered ambitious. The disadvantage of this approach is that costs are always displayed against a business as usual scenario, which is difficult to define (see above). The calculations require many assumptions and as a result are often in-transparent and associated with high uncertainties.
- **Comparison to decarbonisation indicators or benchmarks:** A number of indicators can be used to compare countries’ circumstances and development pathways. At the national level one can for example compare the status and trend of emissions per capita, energy use per capita or emission intensity of the energy mix. These indicators say something about the starting point of a country and the level of action planned for the future. Moreover, these indicators are useful to assess how much progress has been made up to now so that the countries that made significant efforts in the previous years would not be punished for setting comparatively less ambitious targets for the INDC period. In addition, sector specific indicators can be used such as emissions per kilometre travelled or per tonne of cement or steel produced. A contribution would be seen as ambitious if the trend in one of the indicators is significantly changed and/or if the trend of the indicators is in line with what would be necessary for a 2°C compatible pathway. The advantage of this method, on the one hand, is that it is close to real action on a sectoral level and therefore more accessible to a broader audience.
- **Comparison to a good practice policy package or a policy menu:** Finally, one can assess a country’s effort on the level of policies by comparing the implementation of policies against

⁹ For example, Chapter 6 of the IPCC AR5 WGIII (Clarke et al., 2014) show very wide ranges of baseline projections for various indicators.

¹⁰ <http://climateactiontracker.org/methodology/85/Comparability-of-effort.html>

its peers or best in class. A contribution would be considered ambitious if it included many policies that are considered best practice. Or conversely, a contribution would be unambitious if a country failed to implement the policies that all of its peers have already successfully implemented. Examples are support policies for renewables or energy efficiency standards for buildings which are already implemented by a majority of countries today. One of the critical issues with this approach is the number of policies that need to be evaluated. The UNFCCC secretariat has started to prepare policy menus which are useful in this regard.

Besides the aforementioned five approaches, there are other approaches proposed in the literature. For example, Aldy and Pizer (2014) propose also energy prices as indicators for comparability of mitigation effort, arguing that the industry and those concerned with the economic implications focus on fossil energy and electricity prices.

5 Process options for connecting assessment of INDCs to the negotiations

There are several options of how the assessment of INDCs could be performed and how these could be linked to the international negotiations process (e.g., Morgan, Dagnet, Höhne, & Oberthür, 2014; Tamura, Kuramochi, & Asuka, 2013). The question of who will carry out the assessment has implications on the credibility of the outcome as well as on its legitimacy and potential impact in the negotiations process. There is also the question of how to undertake the assessments in the more practical sense. This includes timing of the assessment, resource needs as well as forms of communicating the results to the international process. Lastly and perhaps most importantly, it needs to be clarified what exactly is to be assessed and the approach used.

For the assessment of INDCs, there are two levels to be considered; the first one is on the transparency and correctness of the information provided and the second one is the assessment of the level of ambition. The former is largely a technical exercise whereas the assessment of ambition has both a technical as well as political dimension. This needs to be taken into account when considering different process options.

This section mainly focuses on options for the assessment of the level of ambition. Beyond the aggregate perspective of the sufficiency of all INDCs to achieve the 2°C goal, the assessment of individual INDCs may focus on the level of ambition in relation to the global goal only or include other aspects such as, for example, deep dive assessments of individual elements of the INDC and options for increased ambition based on country circumstance and potentials. The scope and content of the assessment in turn relates back to different process options, in particular on who carries out the assessment and how formally it can be linked to the UNFCCC process.

For all options, the INDC assessment bodies may need to limit their assessments to a number of countries, e.g. G20 member states, top x% of emitters. This would enable the assessments to be efficient and timely (Tamura et al., 2013) while ensuring a certain degree of political acceptability.

Option A – Civil society & research

As described in Section 2.4, several civil society and research organisations are already assessing or planning to assess the ambition of INDCs and their implications in the global context. These assessments currently inform the negotiations process in an informal way. Results are disseminated widely and typically used by negotiators, facilitators and observers to the negotiations to inform their posi-

tions and activities. Given that several different organisations undertake INDC assessments, the results provide for diverse perspectives. Assessment may vary as to the methodology applied, scope and focus of the assessment as well as target audience, which may be more technical/scientific or more political in nature.

The assessments could be linked to the UNFCCC process in a way that they are used as informal or formal inputs to the negotiations. Timing wise this would logically happen at the different points in time when Parties are asked to communicate their contributions, in the first instance prior to the Paris COP, i.e. after submission of the INDCs by all Parties. Later on the external assessments could be linked to a potential ratchet up mechanism and future review cycles (if agreed) depending on the frequency of such reviews.

Concretely, it could be envisaged for the UNFCCC Secretariat to publish the INDCs (as already done) and future contributions, if agreed, on the UNFCCC website. A public platform or electronic bulletin board (Morgan et al., 2014) could then be set up which would allow Parties and other observers to post comments on the INDCs. A more restrictive version could also be foreseen where contents would not be fully public (for example only to the Parties involved) or in the form of a moderated platform where contents are subject to prior authorisation. Access to the platform to provide comments may also be limited to a preselected number of organisations.

Alternatively, a commenting round could be facilitated by the UNFCCC Secretariat where assessments and views on the INDCs are synthesised by the Secretariat and then channelled back to Parties and the international community. The advantage of this option is that it provides for more synchronised and condensed information to Parties. On the other hand, it requires significant resources on the side of the Secretariat to facilitate such consultation and analysis process depending on the extent of comments received. Timing here is particularly critical.

Ultimately, if not facilitated by the Secretariat, the inputs of experts, think tanks and researchers outside the UNFCCC could continue to find their way into the negotiations through the different communication and dissemination channels including publications, research outputs, in session workshops and meetings. These activities could be directly encouraged by Parties to increase the level of impact and recognition (Morgan et al., 2014).

In order for the results and/or recommendations of the assessments to be accepted by the Parties in question, participation and inputs of local research organizations and experts to the assessment team would be crucial so that the full spectrum of circumstances underlying the INDC are covered in the assessments.

Option B – Neutral body

A second option would be to agree on a neutral body or organisation to undertake the assessment of individual INDCs in a more centralised way. This organisation would have to combine the relevant expertise to perform such assessments as well as enjoy a high level of credibility and broad support of Parties.

The United Nations Environment Programme (UNEP) has been undertaking assessments of the sufficiency of country mitigation activities to stay below 2°C as already discussed in section 2 of this paper. This annual gap report has provided useful inputs to the negotiations process. In a similar way UNEP, or a similar organisation, could perform an analysis of individual INDCs. This analysis could be done as a neutral summary of the assessments undertaken by other (reputable) research organisations and individual experts. A key difference of the neutral body compared to the UNEP Emissions Gap Report team would be that it would focus more on comparative assessment and that it may have to be even more sensitive to the regional representation of research organizations.

The organisation to perform the assessment could be selected by the Parties themselves to ensure broad level support. Alternatively, results would then be fed into the negotiations process in the form of a formal report or informal guidance and information to countries in synchronisation with the publication of INDCs and updated contributions.

The challenge here will be to produce relevant assessments of individual INDCs whilst maintaining a credible position of neutrality and ensuring acceptance of the majority of Parties. Transparency on the methodology and approach as well as scientific robustness of the methods are critical here. At the same time, the position of neutrality of such organisation may impede more detailed assessments of certain aspects of specific INDCs and options for increased ambition. This may best be reserved to the wider research community to complement this more official, centralised assessment.

Option C – Technical committee

The most formal option would be for the COP to set up a technical committee within the UNFCCC process. The actual process to set up such committee and define procedures and work modalities is also likely to be complex considering the need to take into account the diverse views of Parties on the issue. This option may be unlikely as several Parties have voiced their concerns regarding the assessment of individual contributions as mentioned earlier.

The advantage of a technical committee would be to have a very formal and consensus based assessment of the ambition of INDCs which could be formally integrated into future commitment cycles. This formal assessment would be the basis and starting point for future processes to define individual contributions. In this way it would serve the dual purpose of providing a clear and formal marker to avoid back sliding of ambition. The work of the technical committee could also potentially be linked to individual assessment and reviews similar to the International Consultation and Analysis (ICA) and International Assessment and Review (IAR) under the UNFCCC. Here the differentiation of approaches by country type or development status could be considered. Differentiation of assessments in the context of the discussions of *ex ante* reviews of INDCs has been proposed by several developing country Parties.

Lastly, in terms of content an assessment of the ambition of INDCs by a UNFCCC governed technical committee is likely to be restricted regarding its scope and depths. Specific deep dives into particular aspects of individual INDCs or options for increased ambition are likely to be difficult to facilitate under a formal technical committee process. On the other hand, results of the assessment of the committee will have high relevance and legitimacy to inform the future international process.

Option D – Peer Review

An alternative option to a review by some form of body or committee could be involving Parties directly in a mutual peer review process. Here Parties could be given a pre-defined time to submit clarification questions to their peers as well as suggestions on how to improve the level of ambition of the INDC. Each Party would then respond to the questions and suggestions mutually. Ideally, this process would involve all relevant line ministries, potentially also high level decision makers within government. The advantage of such process is the directly involvement of Parties themselves in a mutually beneficial and constructive way. On the other hand, such process may be difficult to structure and organise in a timeline fashion in particular considering potential capacity gaps at country level.

6 Conclusions

The negotiations in the run up to Paris have made clear that a review of individual countries' ambition is a sensitive issue. With the decision for *nationally determined* contributions that will likely be the basis for the new climate agreement, Parties have subscribed to a bottom-up process - at least for the first set of mitigation offers for the post-2020 period.

On the one hand, the bottom-up process has proven successful, particularly regarding the involvement of Parties: By mid November 2015, over 150 countries have submitted their mitigation offers to the international community. This involves submissions from all major emitters, but also many least developed countries have put forward their future contributions to mitigate climate change.

On the other hand, first estimates of the overall effect of the INDCs on the global average temperature indicate that the offers are not sufficient. It will now be crucial to find a process which allows for an increase in ambition of the contributions. It seems unlikely that the negotiations in Paris will substantially change the ambition level of the INDCs or lead to a formal review process under the UNFCCC. The most important outcome for Paris will be that the new agreement includes a clear reference to a review process. The exact character and details of such process can still be defined later on. However, it is essential that this happens immediately after Parties in order to keep the momentum and be able to address the remaining emissions gap effectively and timely.

Nevertheless, it will still be essential for the effectiveness and the credibility of the new agreement to include a mechanism to increase ambition over time. The success of such mechanism depends on several elements:

First of all, it needs to be ensured that a process is put in place and that countries are encouraged and able to participate in it. Here, the negotiations under the UNFCCC play a central role. The more concrete the design of the mechanism, the more likely can we expect concrete outputs from this process. Also, in the time period after Paris, the UNFCCC can play a role to encourage Parties to continue their involvement in the process. The outcome of Paris could potentially already fix concrete timelines for review. In any case continuous communication on the topic with and between Parties is essential.

Secondly, a technical assessment regarding the potential increase of ambition can guide individual countries on the revision of their ambition level. In the ideal case, it would result in country-specific recommendations. Such proposals have to be optional as it is very unlikely at this point in time that the UNFCCC or another official committee would take a view on or prescribe the ambition level for individual countries. Such country specific recommendations may also come from independent, non-official estimates or sources, or indeed from the countries' own estimates.

In any case, it is important that the information is publicly available, transparent and that countries clarify how the ambition levels are derived. Here the UNFCCC could play the role of an information agency, making sure that the technical information is available and understood by all. Tools and processes to support this may include online platforms to share information, or the organisation of technical workshops, where analysts and policy makers meet.

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