

**Climate Change Expert Group**  
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# **Built to Last: Designing a Flexible and Durable 2015 Climate Change Agreement**

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## OECD/IEA CLIMATE CHANGE EXPERT GROUP PAPERS

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## ABSTRACT

### Built to Last: Designing a Flexible and Durable 2015 Climate Change Agreement

The aim of this paper is to explore what a flexible and durable 2015 climate change agreement could look like and propose pragmatic options for the design of such an agreement. A durable 2015 climate change agreement would continue to be ambitious, fair and effective in 2020 and beyond. An agreement that is designed to be durable could also help to encourage widespread participation by governments, as well as improve the credibility of the agreement for investors. To achieve these objectives, a degree of flexibility could be included in the mitigation and other provisions of the 2015 agreement. If so, a balance may need to be struck between (i) providing enough flexibility for countries to feel comfortable participating in the agreement, (ii) providing predictability regarding the provisions of the agreement and the actions that governments intend to take, and (iii) the collective level of ambition of the agreement. Success will be needed on all fronts if the agreement is to be durable. Building some flexibility into the design of the 2015 agreement could make it more durable in the face of new scientific discoveries, external changes and shocks, as well as evolving country circumstances. The focus of this paper is on the mitigation part of the 2015 agreement. The paper outlines possible processes for consultations and updating of mitigation contributions. It also discusses the possible structure of the 2015 agreement and the implications of different mitigation contribution types for the flexibility and durability of the agreement.

**JEL Classification:** F53, O44, Q54, Q56

**Keywords:** climate change, mitigation, greenhouse gas, UNFCCC, 2015 agreement

## RÉSUMÉ

### Construit pour durer : concevoir un accord climatique de 2015 souple et pérenne

Ce rapport a pour objet d'envisager à quoi pourrait ressembler un accord souple et pérenne sur le changement climatique à conclure en 2015 et propose des options pragmatiques pour le concevoir. Un accord climatique pérenne signé en 2015 devrait demeurer ambitieux, juste et efficace en 2020 et au-delà. Conçu pour durer, il pourrait aussi encourager une large participation des gouvernements et bénéficier d'une plus grande crédibilité aux yeux des investisseurs. Pour atteindre ces objectifs, les dispositions de l'accord de 2015 visant l'atténuation et d'autres aspects pourraient ménager une certaine marge de manœuvre, auquel cas il faudrait trouver un équilibre entre : (i) une flexibilité suffisante pour que les pays participant à l'accord se sentent à l'aise, (ii) la prévisibilité des dispositions de l'accord et des actions prévues par les gouvernements, et (iii) le degré d'ambition collective de l'accord. C'est sur tous les fronts qu'il importe d'obtenir de bons résultats pour assurer la pérennité de l'accord. Prévoir une certaine souplesse dans l'accord de 2015 dès sa conception permettrait de prolonger sa validité même si de nouvelles découvertes scientifiques, des changements et des chocs extérieurs ou l'évolution des situations nationales modifient la donne. Ce rapport est axé sur le volet atténuation de l'accord de 2015. Il décrit les processus de consultation et de mise à jour des contributions à l'atténuation qui pourraient y être inscrits. Il examine en outre la structure possible de l'accord de 2015 et les conséquences des différents types de contributions en matière d'atténuation pour sa flexibilité et sa pérennité.

**Classification JEL :** F53, O44, Q54, Q56

**Mots clés :** changement climatique, atténuation, gaz à effet de serre, CCNUCC, accord de 2015

## FOREWORD

This document was prepared by the OECD and IEA Secretariats in 2014 in response to a request from the Climate Change Expert Group (CCXG) on the United Nations Framework Convention on Climate Change (UNFCCC). The CCXG oversees development of analytical papers for the purpose of providing useful and timely input to the climate change negotiations. These papers may also be useful to national policy-makers and other decision-makers. Authors work with the CCXG to develop these papers in a collaborative effort. However, the papers do not necessarily represent the views of the OECD or the IEA, nor are they intended to prejudge the views of countries participating in the CCXG. Rather, they are Secretariat information papers intended to inform Member countries, as well as the UNFCCC audience.

Members of the CCXG are Annex I and OECD countries. The Annex I Parties or countries referred to in this document are those listed in Annex I of the UNFCCC (as amended by the Conference of the Parties in 1997 and 2010): Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, the European Community, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, the Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, the United Kingdom of Great Britain and Northern Ireland, and the United States of America. As OECD member countries, Korea, Mexico, Chile, and Israel are also members of the CCXG. Where this document refers to “countries” or “governments”, it is also intended to include “regional economic organisations”, if appropriate.

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## TABLE OF CONTENTS

ABSTRACT .....	3
RÉSUMÉ.....	3
FOREWORD.....	4
ACKNOWLEDGEMENTS .....	4
EXECUTIVE SUMMARY .....	6
1. INTRODUCTION.....	8
2. WHAT IS A FLEXIBLE AND DURABLE AGREEMENT AND WHY IS IT NECESSARY? .....	9
3. CONSULTATIONS AND UPDATING CONTRIBUTIONS.....	11
3.1 Lessons from the 2020 mitigation pledges process.....	11
3.2 Up-front information on intended mitigation contributions.....	13
3.3 The aim and scope of consultations .....	13
3.4 The timing of consultations.....	14
3.5 The process for consultations and updates.....	17
4. AGREEMENT STRUCTURE AND CONTRIBUTION TYPES .....	20
4.1 The structure of the 2015 agreement.....	20
4.2 Impact of different mitigation contribution types .....	22
5. CONCLUSIONS .....	23
ANNEX: BACKGROUND INFORMATION ON OTHER INTERNATIONAL AGREEMENTS.....	26
REFERENCES .....	28
GLOSSARY .....	31

## LIST OF TABLES

Table 1.	Options for the frequency of periodic consultations after 2020 .....	16
Table 2.	Open questions regarding a possible process for consultations on mitigation contributions .....	18

## LIST OF FIGURES

Figure 1.	Possible process for consultations and updating contributions after 2020 .....	15
Figure 2.	Possible broad outline of the structure of the 2015 agreement.....	21

## Executive summary

Parties to the United Nations Framework Convention on Climate Change (UNFCCC) are currently elaborating elements of a new climate change agreement under the Ad hoc Working Group on the Durban Platform for Enhanced Action (ADP). The agreement is to be “applicable to all” and is due to be adopted at the twenty-first Conference of the Parties to the UNFCCC (COP 21) in 2015 and come into effect from 2020. The agreement will address multiple issues, including mitigation, adaptation, transparency, finance, technology and capacity building. An effective 2015 agreement would catalyse action to reduce global greenhouse (GHG) emissions so as to hold the increase in global average temperature to below 2 °C, while enabling communities to adapt to the unavoidable climatic changes that do occur.

There are various types of structural changes and external shocks that could have an impact on the ability of countries to achieve their mitigation, adaptation and other goals (e.g. for finance, technology and capacity building). These can include economic, political, scientific, technological and demographic developments, as well as the occurrence of natural disasters. Some of these developments could have a negative impact from a climate point of view, others a positive impact. Furthermore, the impact could be short term, long term, or both.

The aim of this paper is to explore what a flexible and durable climate change agreement could look like and propose pragmatic options for the design of such an agreement. Building some flexibility into the design of the 2015 agreement could make it more durable in the face of new scientific discoveries, external changes and shocks, as well as evolving country circumstances. The focus of this paper is on the mitigation part of the 2015 agreement.

A durable agreement would continue to be ambitious, fair and effective in 2020 and beyond. An agreement that is designed to be durable could also help to encourage widespread participation by governments, as well as improve the credibility of the agreement for investors. To achieve these objectives, a degree of flexibility could be included in the mitigation and other provisions of the 2015 agreement. If so, a balance may need to be struck between (i) providing enough flexibility for countries to feel comfortable participating in the agreement, (ii) providing predictability regarding the provisions of the agreement and the actions that governments intend to take, and (iii) the collective level of ambition of the agreement. Success will be needed on all fronts if the agreement is to be durable.

There are two main areas in which flexibility could be included in the 2015 agreement. These are:

- a) Flexibility at the Party-level (e.g. in terms of the types of mitigation contributions that can be put forward by Parties, and the rules for accounting and tracking progress towards contributions).
- b) Flexibility at the structural level (e.g. the use of an agreement structure that can be easily updated, the establishment of periodic consultations on mitigation contributions, provisions for safety valves in the case of unexpected events).

This paper focuses on flexibility at the structural level (since previous CCXG work has focussed on establishing mitigation contributions and emissions accounting). In particular, this paper considers the possibility of establishing a process for consultations and updating of mitigation contributions. It also discusses the possible structure of the 2015 agreement and the implications of different mitigation contribution types for the flexibility and durability of the agreement. It is possible that a combination of ways to introduce flexibility into the 2015 agreement could be employed. For example, a variety of different mitigation types are likely to be put forward, and these contributions could be updated in response to periodic or triggered consultations.

At COP 19 in Warsaw it was agreed that intended mitigation contributions for the 2015 agreement should be communicated by the first quarter of 2015 by Parties ready to do so. For some contribution types, there

could be rules regarding some of the technical aspects of the contributions, such as the time frame and the global warming potentials to be used, as well as the up-front information to be provided.

Up-front information will play an important role in enhancing the transparency of mitigation contributions and facilitating analysis of the contributions put forward. All contribution types have some basic up-front information needs in common, such as the time frame, scope, coverage, base year or baseline against which progress will be measured, and global warming potentials (in the case of GHG goals). However, some contribution types (such as GHG goals relative to business-as-usual baselines) have greater up-front information needs than others. Presenting up-front information consistently using some form of template could improve its user-friendliness and enhance clarity and understanding.

A consultation process could be established before COP 21 in 2015 to further enhance understanding of intended contributions and identify opportunities to raise the level of their ambition before they are included in the 2015 agreement. If so, these consultations could be linked to the 2013-15 review of the long-term global goal. The Climate Summit being convened by UN Secretary-General Ban Ki-Moon in September 2014 could also provide an opportunity to undertake high-level informal consultations on intended mitigation contributions.

Consultations could continue in the period 2015-2020, before the mitigation contributions come into effect, as well as after 2020. The scope of the consultations could include a technical assessment and/or exchange of views on the transparency, ambition and equity of the contributions communicated, as well as progress in implementation and the relevance of contributions in light of evolving national circumstances. In this way, international consultations could aim to provide an environment for increasing the ambition of contributions, without telling individual Parties what level of ambition they need to have.

Regarding the timing of consultations, a process could be established for collective periodic consultations in the post-2020 period, with further consultations triggered under exceptional circumstances. The frequency of the periodic consultations would depend on the time frame that is agreed for mitigation contributions. The circumstances that trigger further consultations could be the occurrence of an extraordinary event beyond the Party's control (e.g. a natural disaster, political upheaval or abrupt economic crisis). Mitigation contributions could be updated by Parties at any time via a communication to the UNFCCC Secretariat. The focus of the process should be on upwards updates and raising ambition. Downwards updates should remain a last resort and could also trigger international consultations.

The way in which mitigation contributions are included in the 2015 agreement could have an impact on its flexibility and durability. Mitigation contributions could be included in information documents that are "updated" at any time of year, or "adjusted" once a year by COP decisions. The contributions could remain legally-binding, but updating or adjusting them could be relatively quick and easy since these processes would not require ratification by Parties. By contrast, mitigation contributions could be included in annexes to the core agreement, the text of which could be subsequently "amended". However, making amendments to the core agreement itself could be a lengthy procedure as it would likely require ratification by Parties. Further work is needed on the legal implications of these different options for including mitigation contributions in the 2015 agreement.

Parties have agreed that mitigation contributions under the 2015 agreement will be nationally-determined and there will be no pre-setting of contribution types. The mitigation contribution types chosen by Parties could affect how flexible and durable the 2015 agreement is. The durability of the agreement could be enhanced if the contribution types used by developing countries evolve over time to reflect their growing capabilities. In the long-term, all Parties may eventually need to consider contribution types that result in net decreases in annual GHG emissions, while recognising that each Party is beginning from a different starting point. The use of a variety of contribution types by Parties, together with a process for consultations and updating contributions, could help to encourage participation in the 2015 agreement while ensuring that contributions remain ambitious and relevant over the long-term.

## 1. Introduction

*“It is difficult to make predictions, especially about the future.”*

Niels Bohr

Climate change is already having an impact on the daily lives of people in every continent, and the possibility of future abrupt and irreversible shifts in the climate system poses a considerable systemic risk to our economies and the organisation of human societies. There is now overwhelming scientific evidence that the climate system is warming and that anthropogenic greenhouse gas (GHG) emissions have become the dominant cause of this warming since the mid-20th century (IPCC, 2013). However, while efforts to date to address climate change have raised awareness of the issue and led to the creation of new institutions, policies and markets, the atmospheric concentration of CO<sub>2</sub> and other GHGs continues to rise.

Enhanced action is clearly needed by governments, the private sector and citizens to rapidly reduce GHG emissions, as well as adapt to the inevitable changes in climate that are occurring. At the multilateral level, the principal instrument for addressing this issue is the United Nations Framework Convention on Climate Change (UNFCCC). The objective of the UNFCCC is to stabilise atmospheric GHG concentrations at a level that would prevent “dangerous interference” with the climate system (UNFCCC, 1992). Parties to the UNFCCC have since agreed that the increase in global average temperature should be limited to below 2 °C above pre-industrial levels, and to consider strengthening this goal to 1.5 °C (UNFCCC, 2011). Due to the long residence time of GHGs such as CO<sub>2</sub> in the atmosphere, this long-term goal effectively means that zero net emissions will need to be achieved globally in the second half of this century (OECD, 2013).

In order to meet the below 2 °C long-term global goal, Parties to the UNFCCC have agreed to adopt a new climate change agreement at COP 21 in France in 2015. The new agreement is to be “applicable to all Parties” and will come into effect from 2020. The new agreement is to cover mitigation and adaptation, as well as enabling activities such as finance, technology, capacity building and transparency. Negotiations on the structure and content of the 2015 agreement are taking place in the Ad hoc Working Group on the Durban Platform for Enhanced Action (ADP). At COP 19 in Warsaw in 2013, Parties clarified the timeline for the ADP process and requested the ADP to elaborate elements for a draft negotiation text in 2014.

Economies are rapidly evolving, national capabilities are changing and unexpected shocks of various kinds (e.g. economic, political, technological) can occur (OECD, 2011). An agreement is therefore needed in 2015 that can evolve in response to external shocks and remains effective (or even becomes more effective) over time. Given the long-term nature of the climate challenge, an agreement with a shelf life of several decades would be preferable to an agreement that requires replacing or re-negotiating soon after it comes into effect. For this reason, previous CCXG work (Briner and Prag, 2013) proposed that the 2015 agreement be flexible and durable (or “future-proof”) in order to prevent it becoming obsolete shortly after it enters into force in 2020.

The aim of this paper is to explore what a flexible and durable climate change agreement could look like and propose pragmatic options for the design of such an agreement. While the focus of this paper is on the mitigation part of the 2015 agreement, the concepts and approaches outlined could be relevant to some other aspects of the agreement (such as adaptation and technology). The paper outlines possible processes for consultations and updating of mitigation contributions. It also discusses the possible structure of the 2015 agreement and the implications of different mitigation contribution types for the flexibility and durability of the agreement.

The paper is structured as follows: Section 2 outlines what the terms “flexible” and “durable” could mean in the context of a climate change agreement; Section 3 outlines options for consultations and updating contributions; Section 4 examines possible structures for the agreement and the implications of different



mitigation contribution types; and Section 4 presents conclusions. A discussion of the legal form of the 2015 agreement is beyond the scope of this paper.

## 2. What is a flexible and durable agreement and why is it necessary?

The aim of the new climate change agreement is to create the conditions for a sustained and effective international response to tackle climate change over the long term. This will require broad participation in the agreement, as well as a high level of environmental ambition and durability. In general, this paper proposes that a “durable” 2015 agreement would be an agreement that is ambitious, fair and effective when it comes into effect from 2020, and continues to be ambitious, fair and effective in response to structural changes and external shocks after 2020. Such an agreement would provide an acceptable probability of meeting the below 2 °C goal and facilitate adaptation to the unavoidable climate impacts that occur. A durable agreement would also send a strong and clear signal to investors that governments remain committed to the transformation to a low-carbon global economy.

The inclusion of flexibility in the way in which mitigation contributions under the 2015 agreement are developed, established and accounted for is an important way to incentivise broad participation. Flexibility could also play an important role in ensuring that the 2015 agreement and the contributions made under it remain effective and relevant over time. There could be flexibility at the Party-level in terms of the types of mitigation contributions that can be put forward by Parties. There could also be flexibility at the structural level (e.g. the use of an agreement structure that can be easily updated, the establishment of a periodic consultations and updating process for mitigation contributions, provisions for safety valves in the case of unexpected events).

There are various changes or shocks that the 2015 agreement may be exposed to during its lifetime. Each change or shock could have an impact on the ability of countries to meet their mitigation contributions, to adapt to climate change or to provide climate finance to other countries. Some of the impacts could be positive, others negative (from a climate action point of view). Further, the impacts could be short-term, long-term, or both. In some cases, an event could decrease GHG emissions in the short-term but end up increasing emissions in the long-term (e.g. an economic recession that reduces energy demand and industrial output in the short term but does not result in major structural changes to the economy). Potential changes and shocks include:

- **Evolving scientific understanding.** Our understanding of the climate system has greatly improved over the last few decades, but is not yet complete. Thus some aspects of the climate issue could turn out to be graver than previously thought, or some risks could be less severe (possibly due to the discovery of new feedbacks or non-linear responses in the climate system). A durable 2015 agreement would therefore have a link of some sort to the latest findings of the climate science community.
- **Natural disasters.** Natural disasters can also affect the capacity and resources available to tackle climate change. For example, the occurrence of hurricanes, earthquakes, tsunamis or volcanic eruptions may prompt the governments of the countries concerned to delay implementation or scale back climate policies. Furthermore, climate change is expected to increase the risk of more frequent and/or intense extreme weather events in many regions, and these could also have an impact on the ability of countries to implement their contributions.
- **Economic developments.** Economies can grow or shrink over various time scales and these economic trends can have an impact on the emissions profiles and adaptation capabilities of countries. In particular, the economic growth rates for rapidly-growing economies represent a significant source of uncertainty for estimates of future GHG emissions levels. Other economic developments such as short-term recessions or long-term structural changes to economies could

also have a significant impact on countries' emissions profiles and patterns of production, consumption and trade. Furthermore, if the IPCC's estimates of the remaining carbon budget prove to be correct, the possibility of a carbon bubble and large quantities of stranded carbon assets could result in significant reallocations of capital in the financial markets (Carbon Tracker Initiative, 2012).

- **Social and demographic developments.** Population is a key driver of emissions trends. Population projections based on birth rates, death rates and migration flows are generally fairly accurate, although unexpected upwards or downwards changes in populations can occur. While total population is an important factor, it does not tell the whole story. Changing income distributions, increasing urbanisation, the rise of the middle classes in emerging economies and shifting patterns of food production and consumption can also have a significant impact on the ease with which countries can meet mitigation contributions.
- **Evolving capabilities.** The capabilities of countries to implement mitigation and adaptation activities are evolving – both financially and in terms of institutional capacity. The economic situations and capacities to implement climate policy of some countries have changed considerably since the 1990s when the Convention was signed. The 2015 agreement could provide countries with opportunities to strengthen their mitigation and adaptation actions over time as their domestic capabilities improve.
- **Political developments.** Political developments such as changes of government or political leadership can lead to significant changes in climate policy objectives and use of policy instruments. Further, the short-term nature of most political cycles can make it challenging for governments to take the difficult decisions necessary to put countries on a long-term decarbonisation pathway. As with many issues, the profile of climate change as a domestic political issue waxes and wanes and is influenced by the shifting concerns of leaders, media and the general public (who may be preoccupied with more immediate and shorter-term crises in other domains).
- **Technological developments.** Innovation is constantly leading to the development of new technologies and the improvement of existing technologies. As a result, the costs of low-carbon technologies such as wind and solar can change rapidly. This can particularly have an impact on the energy sector by resulting in shifts in energy consumption patterns and energy generation mixes. However, not all technological developments are positive from a GHG emissions perspective. For example, the discovery of more cost-effective ways of exploiting unconventional and carbon intensive fossil fuel reserves could have a negative impact on the climate policies of some countries. Some developments, such as the use of carbon capture and storage (CCS) for power generation or the exploitation of shale gas, could alter the marginal costs and potential of GHG reductions in the medium-term, but may not represent long-term solutions.
- **Unknown unknowns.** There will doubtless be other high-impact low-probability events in the coming decades that are impossible to predict in advance. By definition, it is not possible to plan for such events. However, it is possible to design an agreement with characteristics that give it a better chance of coping with, or even benefiting from, unpredictable events.<sup>1</sup> Such characteristics could include flexibility, transparency, provision of open data, and use of feedback loops and processes that allow the agreement to respond to unforeseen shocks.

In terms of finance, the evolving economic situations and capacities of countries mean that the pattern of providers and receivers of climate finance has changed in the past and is likely to continue to change over time. For example, some countries not included in Annex II of the Convention are already now providers

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<sup>1</sup> Taleb (2013) proposes the term “anti-fragile” to describe systems that gain from disorder.

of climate finance to developing countries. Further, while many countries will continue to receive financial resources and other forms of support to implement their mitigation and adaptation actions, some countries are experiencing rapid economic growth and their support needs may decrease over time. A durable 2015 agreement could reflect this shifting landscape of climate finance by, for example, including sunset clauses for the lists of countries that are climate finance providers and receivers.

An agreement could also be durable in the sense that the agreement itself and the contributions within it are not being constantly re-negotiated. Such negotiations can consume significant amounts of time and resources. At the same time, an effective agreement would stay responsive to changing situations and contexts. This paper therefore outlines some options for how a balance between these two factors might be achieved.

The design of the 2015 agreement needs to be based on long-term thinking, since the decisions made in the coming decades will affect the state of the climate for many centuries to come. One approach could be to focus on a desired outcome by the end of the 21<sup>st</sup> century, then work back from there. The negotiation of an agreement at COP 21 in December 2015 is not therefore simply a one-off exercise; it should be the beginning of a new dynamic process that aims to ramp up ambition over time and provides incentives to align short-term actions with long-term transitions to low- or zero-carbon economies. In addition to avoiding the impacts of climate change, these incentives could include revenues from carbon taxes and auctioned permits in emissions trading systems, as well as co-benefits of climate policies (Edenhofer et al., 2013).

Climate change is a cross-cutting issue and touches upon all sectors of the economy. Therefore the structure of the 2015 agreement could have an impact on the behaviour of many different agents in the economy. For example, the inclusion of flexibility might enhance the durability of the agreement, but it also increases the uncertainty associated with climate policy objectives. This constitutes an additional source of risk for potential investors in mitigation and adaptation activities. It could also affect the link between national policies and sub-national or city-scale climate change plans.

### **3. Consultations and updating contributions**

One way in which flexibility could be included at the structural level would be to establish a process for consultations and updating of mitigation contributions. This section outlines possible options for such a process, drawing on experience from previous multilateral agreements (both in climate and other domains). While the precise circumstances of each multilateral agreement are unique, it can be helpful to consider how similar issues have been dealt with in the past – particularly in the case of long-standing multilateral agreements that have stood the test of time.

#### **3.1 Lessons from the 2020 mitigation pledges process**

Lessons can be learned from the process for expressing mitigation pledges for 2020 under the Convention. At COP 16 in Cancun in 2010, the COP took note of the emission reduction targets communicated by developed countries and the nationally-appropriate mitigation actions communicated by developing countries (UNFCCC, 2011). This was significant because it was the first time that non-Annex I countries had formally communicated mitigation actions under the Convention, and targets and actions were put forward by countries representing over 80% of global GHG emissions. However, there were several challenges associated with the process, including:

- The timeline for mitigation pledges was not specified. While many pledges were made for the single year 2020, some pledges were made for other years, or for multiple years.

- There was no mechanism for ensuring that the mitigation pledges put forward were collectively stringent enough to be consistent with the range of below 2 °C global emissions pathways identified by the IPCC.
- The up-front information to be provided alongside mitigation pledges was not specified. Thus in many cases it was not clear how progress towards pledges would be measured or what the expected impact on GHG emissions would be.<sup>2</sup> A series of workshops were organised aiming to enhance the transparency of the pledges made, but the additional information provided remained limited and not all pledges were examined.
- The COP urged Parties to increase the level of ambition of their emissions reduction targets and actions. However, to date few Parties have increased the headline number of their 2020 mitigation pledges under the UNFCCC and at least one Party has reduced the headline number of its pledge due to the occurrence of a natural disaster.<sup>3</sup>
- A process was not established for subsequent rounds of mitigation pledges after 2020.

The post-2020 process could aim to build on the successes of the 2020 pledges system (e.g. its broad level of participation), while addressing some of its short-comings (e.g. its low level of environmental ambition). Expanding on previous CCXG work (Briner and Prag, 2013), the process for establishing and understanding post-2020 mitigation contributions could involve the following phases:

- **Before the first quarter of 2015:** Agreement of any rules or bounded flexibility for the mitigation contributions to be put forward (e.g. agreement to use the same time frame, global warming potentials, etc.), as well as the up-front information needed to understand contributions.
- **During 2015:** Communication of intended mitigation contributions and up-front information by the first quarter of 2015 by Parties ready to do so (and later in 2015 for other Parties). In parallel to the communication of intended contributions, there could be ongoing discussions on other aspects of the accounting framework for post-2020 mitigation contributions (see Hood, Briner and Rocha, 2014, for further details). Once the intended contributions have been communicated, consultations could begin aiming to enhance the transparency of intended contributions and identify opportunities to raise ambition before COP 21.<sup>4</sup>
- **End of 2015:** Inclusion of mitigation contributions in the 2015 agreement at COP 21 in Paris.
- **2015-2020:** Consultations in the pre-2020 period, i.e. before the new agreement comes into effect. Mitigation contributions could be updated during this time by Parties.
- **After 2020:** Consultations continue in the post-2020 period, i.e. after the new agreement has come into effect. Mitigation contributions could continue to be updated subsequently by Parties.

The following sub-sections consider in further detail the up-front information needed to understand intended contributions and possible processes for consultations and updating contributions.

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<sup>2</sup> Previous CCXG work (Prag (a), Hood and Barata, 2013) discusses the information needed to measure progress towards mitigation pledges and related emissions accounting issues.

<sup>3</sup> In the wake of a major earthquake that occurred in eastern part of Japan in 2011, the government decided to reduce its dependency on nuclear power and is currently developing a new Strategy for Energy and Environment. As a result, Japan's tentative new emissions reduction target for 2020 will be -3.8% from 2005 levels.

<sup>4</sup> Morgan et al. (2013) outline options for setting and reviewing GHG emission reduction offers in the context of the 2015 agreement.

### **3.2 Up-front information on intended mitigation contributions**

At COP 19 in Warsaw, Parties agreed to identify the up-front information to be provided with intended mitigation contributions by COP 20 in Lima. The aim of up-front information is to enhance the clarity, transparency and understanding of mitigation contributions. It would also therefore play a key role in facilitating any consultations process on intended contributions. Presenting up-front information consistently using some form of template could improve its user-friendliness and help to facilitate clarity and understanding.

Previous studies (e.g. Briner and Prag, 2013; Levin et al., 2014) have laid out the up-front information needed to understand intended mitigation contributions. In order to understand all intended mitigation contributions, basic up-front information is needed on the time frame (e.g. start date and end date), scope (e.g. economy-wide, sector-wide, project-level), coverage (e.g. in the case of GHG goals, which GHGs the action is expected to reduce) and base year or baseline against which progress in implementation will be measured. For GHG goals covering more than one GHG, information is needed on the global warming potentials (or other metric) that will be used to calculate emissions totals.

In order to estimate the likely future global GHG emissions pathway and expected increase in global average temperature, up-front information is needed on the expected impact of intended contributions on GHG emissions levels (at least for major emitters and rapidly-growing emitters). For goals relative to a baseline, up-front information on the baseline, the assumptions underpinning it and whether the baseline can be revised (and if so, how) is needed in order to understand expected GHG emissions levels. For emissions intensity goals, up-front information on expected GDP levels can enhance understanding of expected GHG emissions levels. In the case of goals with less than economy-wide coverage, the expected impact on GHG emissions from one or more sectors could be estimated. For non-GHG goals such as renewable energy or forest cover targets, expected non-GHG activity data could be converted into expected GHG impacts using emissions conversion factors. All Parties (including those that are neither major emitters nor rapidly-growing emitters) could be encouraged to provide information on expected GHG impacts of their mitigation actions on the basis that it can provide recognition of all individual intended contributions towards the global mitigation effort.

For GHG goals covering the land sector, up-front information is needed on how emissions and removals from this sector will be treated when progress in implementation of the goal is assessed. For Parties intending to use market or non-market mechanisms to meet part of their contributions, up-front information on the expected level of use of these mechanisms would also improve understanding of the intended contributions as well as facilitate estimates of future global GHG emissions levels.<sup>5</sup> Up-front information could also be provided explaining how the intended mitigation contribution is ambitious and equitable. Some Parties may choose to refer to quantitative indicators as part of this explanation.

### **3.3 The aim and scope of consultations**

The aim of consultations could be to (i) enhance understanding between Parties and other stakeholders of the mitigation contributions put forward; and (ii) help Parties seek opportunities for increasing ambition through international co-operation and co-ordination of activities related to their contributions. In this way international consultations could aim to provide an environment for increasing the ambition of contributions, without telling individual Parties what level of ambition they need to have. The process could give Parties an opportunity to make further clarifications regarding their intended contributions, including further information on why the intended contribution is ambitious from climate science and equity perspectives.

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<sup>5</sup> See Hood, Briner and Rocha (2014) for further discussion of accounting for post-2020 mitigation contributions.

The scope of the consultations could be limited to individual mitigation contributions communicated by Parties in the context of the UNFCCC. A process for periodically reviewing the below 2 °C long-term global goal and collective progress being made towards it has already been established, and the first such review is taking place in 2013-15. There would need to be links between any consultations on national-level mitigation contributions and the ongoing review of the collective long-term mitigation goal. For example, if the 2013-15 review concludes that the long-term global goal should indeed be strengthened, this would need to be reflected in the level of ambition of intended mitigation contributions communicated by Parties. It would therefore be useful to publish the findings of the 2013-15 review before COP 21 in 2015 so that they can be taken into account in the 2015 agreement.

The scope of the consultations could include a technical assessment and/or exchange of views on the transparency, ambition and equity of the contributions communicated, as well as progress in implementation and the relevance of contributions in light of evolving national circumstances. The continued relevance of Parties' contributions could also be considered taking into account other trends such as atmospheric GHG concentrations, new scientific findings and economic developments.

### **3.4 The timing of consultations**

There could be three distinct periods of consultations, as outlined above. The first could take place in 2015, beginning once intended mitigation contributions have been communicated by Parties and ending at COP 21 when the intended mitigation contributions are included in the new agreement. Alternatively, it is also possible that this first period of consultations could begin once a "critical mass" of countries (i.e. representing  $x$  % of global emissions) have communicated intended contributions in 2015, so that individual contributions could be considered in light of the global aggregate level of mitigation ambition.

The second period of consultations could be further consultations on contributions in the period 2015-2020, before the new agreement comes into effect. These consultations could take place on a regular basis, like the existing workshops for clarifying mitigation pledges for 2020. As for the first period of consultations before COP 21, these consultations could focus on clarifying the details and assumptions behind the contributions on the table, as well as identifying opportunities to raise their level of ambition before 2020.

The third period could be consultations and updating of contributions after 2020, once the new agreement has come into effect. The time frame of mitigation contributions (or their length) would have important implications for the timing of consultations after 2020. The time frame of contributions has yet to be decided and could range from around four or five years (i.e. the end year could be 2024, 2028, 2032, etc.) to ten or more years (i.e. the end year could be 2030, 2040, 2050, etc.).<sup>6</sup> Further, some Parties might choose to communicate both long-term mitigation objectives (e.g. for 2050 or later) as well as short-term goals that put Parties on a path towards meeting their long-term goals.

If the time frame of contributions is short (e.g. 4 years), there would be limited time for consultations during each one. In this case, consultations could take place before each successive round of contribution-setting. If the time frame is longer (e.g. 10 years), there would be more time available for consultations during each contribution. Undertaking consultations during contributions could help to address the issue that long time frames for contributions risk locking-in low levels of mitigation ambition.

Figure 1 outlines two possibilities for the timing of consultations after 2020: (i) periodic consultations (i.e. every  $x$  years); and/or (ii) triggered consultations in the case of an extraordinary event beyond the control

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<sup>6</sup> Mitigation contributions could either be expressed for single years (e.g. 2030, 2040) or multi-year periods (e.g. 2020-2030, 2030-2040). See Prag, Hood and Barata (2013) for further discussion of the accounting implications of single-year versus multi-year mitigation pledges.



before each round of contribution-setting. If the time frame of contributions is long, consultations could occur during contributions.

The frequency of periodic consultations would be an important issue. The higher the frequency of the consultations, the more responsive the contributions could be to dynamically changing circumstances. If the frequency is too high, however, this could increase uncertainty for investors and entail higher transaction costs. Further, frequent consultations would have significant resource implications for the UNFCCC Secretariat as well as the Parties involved in the process. The frequency of some existing and proposed processes are summarised in Table 1.

**Table 1. Options for the frequency of periodic consultations after 2020**

<b>Frequency</b>	<b>Examples</b>
Every 5-8 years	Length of the second KP commitment period Review of the long-term global goal Publication of IPCC Assessment Reports
Every 4 years	Proposal by Haites et al. (2013) Proposed option by Morgan et al. (2013)
Every 2 years	International assessment and review (IAR) International consultations and analysis (ICA) <sup>7</sup> Proposed option by Morgan et al. (2013)

One option for the frequency is that the timing of consultations could be linked to the publication of IPCC assessment reports (i.e. every five to eight years). This was the approach taken for the review of the long-term global temperature goal, which is to take place “following the adoption of an assessment report of the Intergovernmental Panel on Climate Change or at least every seven years” (UNFCCC, 2011). Linking periodic consultations to the publication of IPCC reports could provide a better response to new scientific findings. However, observed impacts on the climate system generally result from aggregate GHG emissions rather than individual emissions, so it may not be straightforward to determine the implications of new scientific findings for individual mitigation contributions.

Another possibility would be to have a short time frame for mitigation contributions (e.g. every four years, which is proposed by Haites et al., 2013, and Morgan et al., 2013), with consultations before each successive round of contributions. This could encourage Parties to put forward more ambitious goals in response to changes in scientific findings and to take advantage of domestic political opportunities to strengthen climate policies.

A further possibility would be consultations every two years, i.e. a similar frequency to international assessment and review (IAR) for developed countries and international consultations and analysis (ICA) for developing countries under the UNFCCC. This frequency would ensure the greatest responsiveness to changing circumstances, but would also entail the highest resource needs.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, 1979) provides an example of a multilateral agreement featuring a periodic updating process. The Convention includes three appendices listing the plant and animal species to be protected from unsustainable trade. A

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<sup>7</sup> The timing of ICA depends on the timing of submissions of biennial update reports, so could be less frequently than every two years for some developing countries.



“periodic review” of the species listed in these appendices is conducted by an Animals and Plants Committee, in order to ensure that their categorisation remains appropriate and reflects the latest biological and trade information (CITES, 2004). The periodic reviews are typically undertaken at least once every 10 years for each species. The results of the periodic review are submitted to the Conference of the Parties for their consideration. Adjustments to the appendices are common. For example, at the sixteenth meeting of the Conference of the Parties in Thailand in 2013, 55 new listing proposals were adopted, including on sharks, manta rays, turtles and timber (IISD, 2013).

A variation on the periodic consultations approach would be to set one or more dates for consultations during each round of contributions. For example, the Doha Amendment to the Kyoto Protocol stipulates that each Party included in Annex I will revisit its quantified emission limitation and reduction commitment for the second commitment period at the latest by 2014 (UNFCCC, 2012b). Another example is provided by the recently adopted Minamata Convention on Mercury (UNEP, 2013). The mercury-added products covered by the Minamata Convention are listed in Annex A of the Convention, and the phase-out schedules of processes that involve mercury compounds are listed in Annex B. The Convention states that amendments to these annexes are to be considered no later than five years after its entry into force.

#### *Triggered consultations*

In the second set of consultations outlined in Figure 1, consultations could be triggered in the event of (i) the occurrence of an extraordinary event beyond the control of the Party concerned, and/or (ii) a Party communicating its intention to make a downwards update to its contribution. The consultations could be triggered at any time, and the consultations could therefore take place at different times for different Parties. An advantage of the trigger approach is that it could ensure that consultations take place swiftly in the event of a significant change in circumstances. A challenge of the trigger approach would be that Parties are likely to have different views on what constitutes an extraordinary event.

Trigger events could include natural disasters (e.g. fires, floods, earthquakes, hurricanes, tsunamis, volcanic eruptions), political upheaval (e.g. war, conflict, revolution) and abrupt economic crises. By their nature, it would be difficult to set quantitative thresholds for such events (e.g. it would be difficult to agree how large a major hurricane needs to be in order for a Party to justify making an update to its mitigation contribution). Thus such events would probably need to be considered on a case-by-case basis. Further, the communication of a Party’s intention to make a downwards update to its contribution could trigger consultations aimed at clarifying the basis and rationale for this decision, as well as identifying opportunities for enhanced co-operation and co-ordination to strengthen action.

The ASEAN-Australia-New Zealand Free Trade Agreement (AANZFTA) provides an example of an international agreement containing a trigger mechanism. The agreement stipulates that consultations will be triggered if the Association of Southeast Asian Nations (ASEAN) enters into free trade discussions with any other party (AANZFTA, 2009). The agreement also includes a trigger clause for obligatory negotiations on improving services commitments if the ASEAN concludes a future agreement on trade in services with a third country that secures better commitments than the ones in the AANZFTA (New Zealand, n.d.).

It is likely that a combination of multiple approaches would be established. For example, in the case of the second commitment period of the Kyoto Protocol, an ad hoc updating process (i.e. whereby Parties are encouraged to raise the ambition of their commitments at any time) has been combined with a periodic process (i.e. whereby all commitments are to be revisited by 2014 at the latest).

### **3.5 The process for consultations and updates**

Further open questions concerning a possible process for consultations on mitigation contributions are summarised in Table 2. If there are to be consultations on intended mitigation contributions beginning in

2015, answers to some of these questions would be need to be agreed by Parties at COP 20 in 2014 (since intended contributions are to be submitted by the first quarter of 2015, by Parties ready to do so).

**Table 2. Open questions regarding a possible process for consultations on mitigation contributions**

Questions	Options for answers
Which Parties would undergo consultations?	<ul style="list-style-type: none"> <li>• All Parties that have communicated contributions</li> <li>• All Parties that have communicated contributions except least developed countries and small island developing states</li> <li>• Major emitters only</li> </ul>
What would be the timing of consultations?	<ul style="list-style-type: none"> <li>• <b>During 2015:</b> Beginning after the communication of intended mitigation contributions, or once a “critical mass” of countries have communicated intended contributions (e.g. countries representing x % of global emissions)</li> <li>• <b>2015-2020:</b> Consultations on mitigation contributions continue on a regular basis, with contributions updated at any time by Parties</li> <li>• <b>After 2020:</b> Periodic and/or triggered consultations, with contributions updated at any time by Parties</li> <li>• A combination of the above</li> </ul>
Who would participate in the consultations?	<ul style="list-style-type: none"> <li>• Parties only</li> <li>• Parties and wider stakeholders (e.g. NGOs, IGOs, business)</li> <li>• An independent team of experts</li> <li>• A combination of the above</li> </ul>
What would be the format of the consultations?	<ul style="list-style-type: none"> <li>• Expand the mandates of existing MRV processes (e.g. IAR, ICA, clarification workshops for the 2020 pledges)</li> <li>• Question and answer session</li> </ul>
What would be the outputs from the consultations?	<ul style="list-style-type: none"> <li>• Summary report</li> <li>• Written or oral recommendations</li> <li>• Written comments from stakeholders</li> <li>• Written summary of the question and answer session</li> <li>• A combination of the above</li> </ul>
How would the outputs be distributed?	<ul style="list-style-type: none"> <li>• Publically available on the UNFCCC website</li> <li>• Distributed to Parties and relevant stakeholders only</li> <li>• Distributed to the Party concerned only</li> </ul>

Undertaking consultations for all Parties that have communicated intended mitigation contributions would consume significant time and resources. Therefore it could be more efficient to have opt-in consultations for some countries, such as least developed countries and small island developing states. The timeline for the first period of consultations during 2015 will be tight – if intended contributions are communicated by the first quarter of 2015, a window of around 8-9 months will remain until COP 21 in December 2015. Therefore it could be most efficient to focus on a smaller number of Parties including major emitters.

The consultations could be between Parties only, or they could be broadened to involve a wider group of stakeholders including non-governmental organisations (NGOs), inter-governmental organisations (IGOs) and business. Alternatively, an independent team of experts (e.g. comprising experts from different regional groupings) could undertake the consultations with the Party concerned.

There are different ways in which the consultations could be undertaken. One option would be to establish a formal periodic process. In this case, Morgan et al. (2013) identify four options for the procedures that could be used: (i) expand the mandate of international assessment and review (IAR) and international

consultations and analysis (ICA) – see also Dagnet and DeAngelis (forthcoming); (ii) continue the workshops aimed at clarification of 2020 mitigation pledges; (iii) build on the 2013-15 review of the long-term global goal; and (iv) create a new process using criteria for assessment. Alternatively, it is possible that the consultations could consist of question and answer sessions with little formal guidance. It is unlikely that there is enough time to develop new guidance before 2015; therefore a simple Q&A format could be used for the first period of consultations during 2015. There would be time to develop more structured guidance for the consultations after 2020, if necessary.

The outputs from a consultations process could take various forms, including a summary report, set of written recommendations or comments from stakeholders. These outputs could be shared with Parties only. However, transparency would be enhanced by making the outputs publically available on the UNFCCC website.

As outlined above, a consultations process could help to make the 2015 agreement more durable by providing opportunities for Parties to raise ambition by enhancing international co-operation and co-ordination of mitigation activities. However, the extent to which these consultations would directly result in changes to the headline numbers of mitigation contributions (which may have been approved by heads of states after lengthy internal processes) remains unclear. It is likely that large emitters with high capability and historical responsibility for GHG emissions would need to make the first move and demonstrate leadership in order to enable smaller countries to raise the level of ambition of their contributions.

Political will at the highest level to undertake ambitious action on climate change is clearly an important factor. High-level meetings during 2014, such as the Climate Summit to be convened by UN Secretary-General Ban Ki-Moon in September 2014, could help to build political momentum and provide a space for informal consultations between leaders on their intended mitigation contributions.

#### *Process for updating contributions*

Once a Party has decided to update its mitigation contribution, the next step is to determine the direction and magnitude of the update. There are two options for the direction of the update: upwards (i.e. such that greater emissions reductions are expected), or downwards (i.e. such that fewer emissions reductions are expected).

In light of the ultimate goal of the Convention, upward updates should be considered the rule and Parties should be allowed to increase their level of ambition at any time, with downwards revisions remaining a last resort. Allowing Parties the possibility to make downwards updates to mitigation contributions after 2020 could encourage broad participation in the agreement by providing Parties with a “safety valve” in the case of a strong contextual change. It could also provide incentives for Parties to put forward ambitious intended mitigation contributions as well as reduce the risk of Parties subsequently withdrawing from the 2015 agreement if they fail to achieve their stated mitigation contribution. On the other hand, care would be needed to ensure that any downward revisions remain a last resort and that the provisions cannot be exploited by Parties in a way that leads to overall weakening of the mitigation regime.

Another important issue would be the magnitude of the update. While the magnitude would be nationally-determined, the Party concerned could be required to provide an explanation of why their revised goal is an equitable contribution to the global mitigation effort required to meet the below 2 °C goal. This explanation could include reference to quantitative indicators chosen by the Party concerned where appropriate.

While the focus of updates could be on the magnitude of the headline number of contributions (e.g. -20%, -25%, -30%, etc.), there are other ways in which the level of ambition of a mitigation contribution could be changed. For example, the scope of the contribution in terms of sectors or GHGs could be updated, the approach taken to land use emissions or use of units from market mechanisms could be changed, or additional contributions (e.g. a renewable energy target or other non-GHG goal) could be

communicated to complement the initial contribution. There could therefore be multiple ways to increase the level of ambition of mitigation contributions.

#### *MRV challenges*

An effective MRV system would be needed to underpin all of the possible processes outlined above. The design and implementation of the MRV system would therefore also be a factor in the extent to which the 2015 agreement would be durable. Timely exchange of transparent information would be important for ensuring the legitimacy of a consultations process. It could also provide a basis for assessing individual and collective progress towards achieving mitigation contributions, as well as the direction and magnitude of possible updates.

The new MRV system could build on the existing MRV system. For example, while GHG inventories, biennial reports, biennial update reports and national communications would provide information on *inter alia* GHG emissions and sinks as well as progress in implementation of mitigation actions, additional information may be required regarding mitigation contributions for the post-2020 period and explanations of why the proposed contributions are considered equitable, ambitious and in line with the below 2 °C goal. The existing MRV system contains different provisions for Annex I and non-Annex I Parties (see Ellis et al., 2011, for further details). The 2015 agreement presents an opportunity to create a new MRV system that is applicable to all, while containing flexibility to take into account the different capacities of countries.

## **4. Agreement structure and contribution types**

In addition to the processes for consultations and updating mitigation contributions outlined above, the structure of the 2015 agreement and the mitigation contribution types chosen by Parties could influence their durability. This section proposes options for how a durable 2015 agreement could be achieved, focussing on the structure of the agreement and different mitigation contribution types.

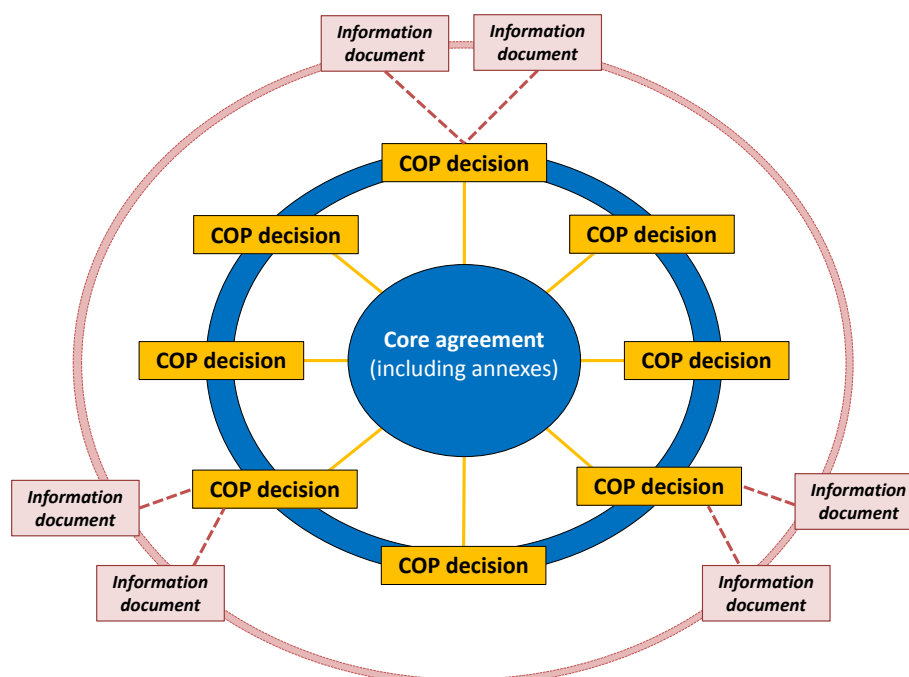
### **4.1 The structure of the 2015 agreement**

The structure of the 2015 agreement itself could have an impact on its durability. If there is to be some process for consultations and possibly modifying mitigation contributions, then hooks will be needed for this in the structure and content of the agreement. Some form of core agreement could be agreed in 2015.<sup>8</sup> The core agreement(s) could be accompanied by a series of COP decisions and/or information documents to form a package (see Figure 2).

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<sup>8</sup> Bodansky (2012) proposes that such a core agreement could include institutional arrangements, a financial mechanism, MRV procedures and provisions relating to international emissions trading, as well as procedures for amending the agreement over time.

Figure 2. Possible broad outline of the structure of the 2015 agreement



The way in which mitigation contributions are included in the agreement could affect the ease with which they can be subsequently updated. One option is for mitigation contributions to be included in information documents that could be “updated” at any time during the year (possibly following triggered consultations in the case of downwards updates). This option would not require ratification by Parties and would enable contributions to be updated quickly and easily, thus providing the maximum level of flexibility and responsiveness for Parties.

A second possibility is for contributions to be included in information documents that can be “adjusted” once a year by COP decisions. These nationally-determined adjustments would also not require ratification by Parties. A third option is for contributions to be included in annexes to the core agreement, with “amendments” subsequently made to these annexes. This could be a lengthy procedure since it is likely that ratification by Parties would be needed to make amendments to the core agreement.

Different approaches have been used previously for establishing mitigation contributions in the UNFCCC context. In the case of the Kyoto Protocol, the commitments are included in an annex to the Protocol. Proposals for amendments to the annex can be made by any Party and adopted by a three-fourths majority vote by the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (CMP). In the case of the amendment for the second commitment of the Kyoto Protocol, reaching agreement proved challenging and the amendment was only adopted after multiple meetings of the CMP. By contrast, the 2020 mitigation pledges were not negotiated in an international setting and are contained in information documents that have been taken note of by the COP. The information documents are compiled from communications sent by Parties to the UNFCCC Secretariat.

The Montreal Protocol (UNEP, 2007) provides another example of a multilateral agreement with commitments included in annexes. In the case of the Montreal Protocol, phase-out schedules for controlled substances are included in articles of the protocol and lists of controlled substances are included in annexes to the protocol. A distinction is made between “adjustments” and “amendments” to the Montreal Protocol and its annexes. Parties may propose adjustments to the existing lists of controlled substances and their phase out schedules in the light of new scientific understanding. Adjustments can be adopted by a two-thirds majority vote at a meeting of the Parties to the Montreal Protocol. Parties may also propose

amendments to the text of the protocol in order to, for example, control new categories of ozone-depleting compounds and establish new financial mechanisms. Amendments require a three-fourths majority vote to be adopted. The Montreal Protocol has been adjusted six times and amended four times to date.

## 4.2 Impact of different mitigation contribution types

Parties have agreed that mitigation contributions under the 2015 agreement will be nationally-determined and there will be no pre-setting of mitigation contribution types. The mitigation contribution types chosen by Parties could affect how flexible and durable the 2015 agreement is. The use of a variety of contribution types by Parties, together with a process for consultations and updating contributions as outlined in Section 3, could help to encourage participation in the 2015 agreement while ensuring that contributions remain ambitious and relevant over the long-term.

A variety of different types of contributions are likely to be communicated by Parties for the post-2020 period. These could include GHG goals (e.g. in terms of annual GHG emissions, cumulative emissions, GHG per unit GDP), non-GHG goals (e.g. targets for renewable energy, energy efficiency, forest cover), and non-GHG goals that do not reduce GHG emissions in the short term but promote long-term transitions to low-carbon economies (e.g. green investment, emissions standards for new infrastructure with slow stock turnover) (Prag (b), Kimmel and Hood, 2013). Further, contributions can be expressed relative to a base year (e.g. -30% from 1990 levels), relative to a baseline (e.g. -30% from BAU) or a fixed level (e.g. 100 Mt CO<sub>2</sub>-eq).

GHG goals expressed in terms of reductions in annual GHG emissions relative to a base year can be viewed as durable in the sense that the expected environmental outcome is fixed and predictable. However, the flexibility of such goals is limited and they risk becoming outdated in the event of changes in conditions or shocks (such as changes in economic conditions), although the establishment of a process for consultations and updating contributions could help to mitigate this risk.

Goals for emissions intensity (GHG emissions per unit GDP) can be viewed as more flexible in the sense that the expected level of GHG emissions in the target year will change over time in response to evolving economic conditions. If GDP growth is higher than expected, the expected level of GHG emissions in the target year will be higher, and *vice versa*. In the case of goals for GHG emissions relative to a baseline, the flexibility of the contribution depends on whether baselines are going to be updated. It could be argued that these contribution types enhance durability by increasing participation in the new agreement. In order to achieve deep cuts in global GHG emissions, however, headline numbers would need to be chosen that result in decreases rather than increases in GHG emissions. Further, the use of these contribution types results in higher uncertainty regarding future GHG emissions levels, which limits the extent to which they can be considered truly durable.

The durability of the agreement could be enhanced if the contribution types used by Parties change over time to reflect evolving national circumstances and capabilities. In the long-term, all Parties could be encouraged to implement contributions that result in net decreases in GHG emissions, while recognising that each Party is beginning from a different starting point. For example, for Parties with limited capability, the initial mitigation contribution could consist of projects, policies or a non-GHG goal. Subsequently these Parties could be encouraged to put forward emissions intensity goals or GHG goals relative to a baseline, and eventually GHG goals for annual GHG emissions. The durability of Parties' contributions could also be increased by increasing the scope and coverage of contributions over time. For example, the scope could be increased from one sector to multiple sectors, and the coverage could be increased from covering CO<sub>2</sub> only to covering multiple GHGs.

Some Parties may choose to put forward multiple mitigation contributions for the post-2020 period. For example, they might communicate packages including both GHG and non-GHG goals, or a combination of short- and long-term goals. It is unclear how the communication of multiple contributions for the same

time frame would affect the durability of the agreement. It can be argued that the establishment of non-GHG goals (e.g. renewable energy and energy efficiency targets) can facilitate achievement of GHG goals (Ricardo-AEA, 2013). If Parties communicate multiple contributions, they could be encouraged to update one or more of their contributions such that the overall level of mitigation ambition is increased over time. The communication of long-term goals in addition to short-term goals would be likely to increase the durability of the agreement since it would improve predictability of the long-term global emissions pathway.

## 5. Conclusions

The world's economies are shaped by a series of trends, events and shocks. Some of these are predictable; others unexpected. Economies are becoming increasingly inter-connected, such that now an earthquake in Japan can trigger a chain of events that leads to, amongst other things, an increase in GHG emissions from coal use in Germany. Some of the most dramatic paradigm shifts in recent times (e.g. the rise of the Internet, the recent financial crisis) have been the product of low-probability, high-impact events (Taleb, 2008). Furthermore, the complex interactions of the climate system are still not fully understood and it is possible that climatic tipping points may yet be discovered that have significant economic and social implications.

It is within this context that Parties to the UNFCCC are currently considering elements of a new climate change agreement for the post-2020 period. A durable 2015 agreement is therefore needed that remains ambitious and fair in the face of new scientific information, external shocks and structural changes in the post-2020 period. Allowing Parties flexibility in terms of the types of mitigation contributions put forward and the way they can be accounted for can help to incentivise participation in the new agreement. Broad participation will help the new agreement to remain effective and relevant over time. A balance may need to be struck between (i) flexibility in responding to future changes and external shocks; (ii) predictability regarding the provisions of the agreement and actions that could be taken by governments; and (iii) the collective level of ambition.

There are two main areas in which flexibility could be included in the 2015 agreement (which could be combined). These are:

- a) Flexibility at the Party-level (e.g. in terms of the types of mitigation contributions that can be put forward by Parties, and the rules for accounting and tracking progress towards contributions).
- b) Flexibility at the structural level (e.g. the use of an agreement structure that can be easily updated, the establishment of periodic consultations on mitigation contributions, provisions for safety valves in the case of unexpected events).

At the structural level, a process of consultations on mitigation contributions could be established. The aim of consultations before and after 2020 could be to help Parties enhance understanding of other Parties' contributions and as well as seek opportunities for increasing ambitions through international co-operation and co-ordination. The process could be split into the following phases; (i) before the first quarter of 2015; (ii) during 2015; (iii) end of 2015; (iv) 2015 to 2020; and (v) after 2020. Up-front information on intended mitigation contributions could enhance the clarity, transparency and understanding of mitigation contributions, and will therefore play a key role in facilitating any consultations process.

There would need to be links between any consultations on national-level mitigation contributions during 2015 and the ongoing review of the collective long-term mitigation goal. For example, if the 2013-15 review concludes that the long-term global goal should be strengthened, this would need to be reflected in the level of ambition of intended mitigation contributions communicated by Parties. It would therefore be useful to publish the findings of the 2013-15 review before COP 21 in 2015 so that they can be taken into account in the 2015 agreement.

Periodic consultations could be established in the post-2020 period (e.g. every  $x$  years). The time frame for mitigation contributions (i.e. their length) would have important implications for the frequency of periodic consultations. For example, periodic consultations could occur during contributions if time frames are long, or between successive rounds of contributions if time frames are short. An example of this approach is provided by the CITES, under which the species listed in the annexes of the convention are periodically reviewed at least once every 10 years.

While the frequency of consultations could be agreed internationally, Parties could communicate updated contributions at any time to the UNFCCC Secretariat. Such an ad hoc updating approach could enable Parties to co-ordinate the updating of their contributions with domestic policy processes. In light of the goal of the Convention, upward updates would need to be considered the rule with downwards updates remaining a last resort. The rationale for including the possibility to make downwards update is that it could facilitate broad participation in the agreement and remove the perverse incentive to make low initial offers by providing Parties with a “safety valve” in the case of a strong contextual change.

In addition to periodic consultations, consultations could also potentially be triggered by exceptional events. These trigger events could include natural disasters, abrupt economic crises, or rare occasions when Parties intend to make a downwards update to their contribution (consultations would not be triggered when Parties make upwards updates, since these would be the rule). An example of a trigger approach is the AANZFTA, under which obligatory negotiations are triggered if the ASEAN enters into free trade discussions with a non-AANZFTA country. If a process for consultations and updating contributions were to be established, Parties would also need to address the tricky political issue of whether the process would be the same for all Parties, and if not, how it would be differentiated.

The design and implementation of an effective MRV system would be considered to underpin the abovementioned consultation and update processes. The new MRV system could build on the existing MRV systems, such as GHG inventories, biennial reports, biennial update reports and national communications. Additional information on mitigation contributions for the post-2020 period would also be required for the new MRV system. The 2015 agreement presents an opportunity to create the new MRV system that is applicable to all, while containing flexibility to take into account the different capacities of countries.

Flexibility could be introduced into the structure of the agreement itself by combining a core agreement with contributions included in COP decisions or information documents. This “cartwheel” structure would enable different elements of the package to be added over time. The way in which contributions are included in the 2015 agreement may influence the ease with which they can be subsequently updated. Some other multilateral agreements, such as the Montreal Protocol, make an explicit distinction between “amendments” and “adjustments”. Amendments have more stringent criteria for adoption than adjustments and require ratification by Parties, while adjustments do not. The Montreal Protocol has been adjusted six times and amended four times to date. Such experience illustrates that “updates” or “adjustments” to information documents could potentially be quicker and easier to implement than “amendments” to the core agreement. However, more in-depth analysis is needed on the legal implications of these different approaches.

It is likely that a variety of different mitigation contribution types will be expressed by Parties for the post-2020 period. The use of different mitigation contribution types can be compatible with a flexible and durable 2015 agreement, especially if combined with a process for consultations and updating contributions as outlined above. GHG goals expressed in terms of reductions in annual GHG emissions relative to a base year could be considered durable in the sense that the expected GHG level is fixed and predictable. However, the flexibility of such goals may be limited, and goals for emission intensity or goals relative to BAU baselines can be more flexible in response to unexpected events or evolving economic conditions. Developing countries could be encouraged to evolve their contribution types over time in line



with their increasing capacity, in light of the fact that global net GHG emissions will eventually need to be reduced to zero by the second half of this century.

In addition to the issues discussed in this paper, there may be other aspects of the 2015 agreement that would affect its durability. For example, technical issues may need to be addressed such as how to ensure up-to-date sets of IPCC emissions factors or guidelines are used. No doubt further issues will emerge once the agreement enters into force. Rather than aiming to design a perfect 2015 agreement straight away, the emphasis should be on establishing a dynamic process that can respond to changing circumstances and be updated and improved in the light of future developments and external shocks.

## **Annex: Background information on other international agreements**

### *Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)*

The CITES was signed in 1973 and entered into force in 1975. There are currently 179 Parties to the Convention. The aim of the convention is to ensure that trade in endangered species is legal and sustainable. There are currently over 35 000 plant and animal species listed in the appendices of the convention. The Parties periodically review the species listed in the appendices as well as the list of resolutions and decisions. The periodic review of the appendices is designed to review the listed species in order to determine whether the listings continue to be appropriate, based on current biological and trade information.

### *Minamata Convention on Mercury*

The Minamata Convention on Mercury was signed in October 2013. It aims to ban production and reduce use of mercury in certain types of industrial products within fixed timelines (e.g. full phase-out of production by 2020, and abolition of chlor-alkali production and acetaldehyde production in 2025 and 2018 respectively). The mercury-added products covered by the Convention are listed in Annex A of the Convention, and the phase-out schedules of processes that involve mercury compounds are listed in Annex B. The convention also has review processes. The Convention states that amendments to these annexes are to be considered no later than five years after the entry into force.

### *ASEAN-Australia-New Zealand Free Trade Agreement (AANZFTA)*

AANZFTA was signed in February 2009 and entered into force in January 2010. The members are Australia, New Zealand and the ASEAN (Brunei Darussalam, Cambodia, Indonesia, Lao, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam). The agreements cover a range of items including trade in goods, various standards, movement of natural/business persons, investment, electronic commerce, competition and intellectual property. The agreement also stipulates that obligatory consultations on improving commitments will be triggered if the ASEAN enters into free trade discussions with any other party.

### *Dispute Settlement System (DSS) of the World Trade Organisation (WTO)*

In 1994, the WTO members agreed on the Understanding on Rules and Procedures Governing the Settlement of Disputes (DSU). Based on the agreement, the Dispute Settlement System (DSS) was established to settle disputes among the member countries. The DSS allows any Party to file a request for establishment of a panel to examine the actions of another Party, if a prior consultation between the countries in dispute fails. The panel subsequently examines the case and prepares a report. If the Party concerned disagrees with the findings of the report, they can appeal to an Appellate Body for further scrutiny. The DSS also imposes a time limit on Parties to complete the settlement process, which is no more than 9 months for a case without appellate review, or 12 months for a case including appellate review.

### *Montreal Protocol*

The Montreal Protocol was signed in 1986 and entered into force in 1989. The protocol achieved universal ratification in 2009 and there are currently 197 Parties to the protocol. The aim of the protocol is to protect the stratospheric ozone layer by phasing out the production and consumption of ozone-depleting substances (ODSs). The protocol sets out phase out schedules for nearly 100 ODSs including chlorofluorocarbons, halons, carbon tetrachloride, hydrochlorofluorocarbons, methyl chloroform and methyl bromide. The protocol recognises the special situations of developing countries whose consumption of ODSs is under 0.3 kg per capita and grants these countries a 10-15 year grace period to comply with its control provisions.

### *Persistent Organic Pollutants (POPs) Protocol*

The Protocol on Persistent Organic Pollutants (“POPs Protocol”) is a protocol to the 1979 Convention on Long-range Transboundary Air Pollution. It was signed in Aarhus in 1998 and came into force in 2003. As of 2013, 32 countries and the European Union had ratified the Protocol. The objective of the POPs Protocol is to control, reduce or eliminate discharges, emissions and losses of POPs. The substances scheduled for elimination or restrictions are listed in annexes to the Protocol. They include pesticides, industrial chemicals and by-products. If a Party wishes to propose an amendment to the annexes, quantitative information is to be provided on the risk profile of the substance concerned. For example, the Party proposing the amendment shall provide evidence that the substance has a vapour pressure below 1 000 Pa and an atmospheric half-life greater than two days (thus demonstrating the potential for long-range transboundary atmospheric transport).

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## Glossary

AANZFTA	ASEAN-Australia-New Zealand Free Trade Agreement
ADP	Ad hoc Working Group on the Durban Platform for Enhanced Action
ASEAN	Association of South East Asian Nations
BAU	Business As Usual
CCS	Carbon Capture and Storage
CCXG	Climate Change Expert Group
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
COP	Conference of the Parties to the UNFCCC
DSS	Dispute Settlement System
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GWP	Global Warming Potential
IAR	International Assessment and Review (developed countries)
ICA	International Consultations and Analysis (developing countries)
IEA	International Energy Agency
IGO	Intergovernmental Organisation
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
LDC	Least Developed Country
LULUCF	Land Use, Land-use Change and Forestry
MEF	Major Economies Forum on Energy and Climate
MRV	Measurement, Reporting and Verification
NGO	Non-governmental Organisation
OECD	Organisation for Economic Co-operation and Development
POPs	Persistent Organic Pollutants
SBI	Subsidiary Body for Implementation
SBSTA	Subsidiary Body for Scientific and Technological Advice
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
WTO	World Trade Organisation

[www.oecd.org/cc/ccxg.htm](http://www.oecd.org/cc/ccxg.htm)

[www.iea.org](http://www.iea.org)