

■ synthesis article

# Transparency of action and support in the Paris Agreement

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The transparency framework under Article 13 of the Paris Agreement further enhances existing arrangements, in which commitments and actions were ‘measurable, reportable, and verifiable’ (MRV). Locating itself in the earlier MRV literature, the article examines the Paris transparency framework comprehensively, while deepening analysis of key aspects: differentiation, common modalities, procedures, and guidelines (MPG), adaptation, support, and technical expert review. The article illustrates the shifts from MRV to the Paris Agreement enhanced transparency framework. The transparency framework is characterized neither as ‘common’ nor ‘differentiated’, but includes common MPG, underpinned by built-in flexibility and continuous capacity building. Informational requirements on action are common, whereas those in relation to support are differentiated. The Paris Agreement established mandatory requirements to report regularly GHG inventories and information to track progress on implementing and achieving nationally determined contributions. Information on both mitigation and support is subject to technical expert review, which operationally may combine the work of expert review teams and technical teams of experts. The article considers implications for further work at the domestic and international levels.

## Policy relevance

- The enhanced transparency framework on action and support is central to the Paris Agreement, adding mandatory components of review.
- The transition from MRV to transparency should bear in mind existing arrangements.
- Expert review teams and technical teams of experts could be combined.
- The scope of transparency includes adaptation, and methodological work needed.
- Domestic institutional arrangements remain key, requiring continuous support for capacity.

*Keywords:* Adaptation; capacity building; differentiation; measurable; Paris Agreement; reportable and verifiable (MRV); transparency

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## 1. Introduction and context

The 2015 Paris Agreement established an enhanced transparency framework for action and support, with built-in common modalities and flexibility related to capacity (United Nations Framework

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Convention on Climate Change [UNFCCC], 2015c, Article 13). Transparency of action and support are central to the overall Agreement, adding important components for the review of contributions. Contributions in the Agreement are nationally determined rather than collectively agreed, so the multilateral rules-based regime (UNFCCC, 2011a) takes on added significance. The transparency framework helps track countries' progress toward the implementation of their mitigation contributions, which is essential for implementation and accountability. It significantly enhances information on adaptation and finance.

With the transparency framework only recently agreed, there is relatively little literature yet on this issue under the Paris Agreement. This article therefore locates itself in the literature on Convention arrangements, and the 'MRV' literature, referring to the commitments and actions in the Bali Action Plan's para 1(b)(i) and 1(b)(ii) being 'measurable, reportable, and verifiable' (MRV) (UNFCCC, 2007).

The early MRV literature identified three elements: (1) mitigation commitments in developed countries, (2) mitigation actions in developing countries, supported by (3) means of implementation (Winkler, 2008); with these elements being further investigated either singly or comprehensively. Researchers at the Organisation for Economic Co-operation and Development (OECD) and related institutions focused on MRV of mitigation commitments and actions (Ellis & Larsen, 2008; Ellis & Moarif, 2009), mitigation support (Guay, Corfee-Morlot, & Larsen, 2008), transparency and tracking of climate finance (Buchner, Brown, & Corfee-Morlot, 2011; Moncel, McMahon, & Stasio, 2009), and mobilization of private finance for adaptation (Buchner et al., 2011). Other institutions emphasized using existing MRV mechanisms under the Convention (South Centre, 2008). The literature identified MRV as core elements of the post-2012 climate regime and key to agreement in Copenhagen (Breidenich & Bodansky, 2009; Winkler, 2008). MRV was reported as being central to discussions between leaders of the US and BASIC countries (Nhamo, 2010), contributing significantly to the political agreement reflected in the 2009 Copenhagen Accord.<sup>1</sup>

Post-Copenhagen, the negotiations continued to translate the broad political agreement on MRV into legal text in decisions. Policy makers contributed to thinking on MRV, including the Indian Environment Minister (Ramesh, 2010). Much of the literature focused on the climate regime under the UNFCCC and its Kyoto Protocol, but also surveyed experience in other multilateral regimes for lessons that might be applied to climate change (Pew Center, 2010). The process of International Assessment and Review (IAR) for developed countries, and International Consultation and Analysis (ICA) for developing countries, established under the 2010 Cancun Agreements, was explored analytically (OECD, 2011), while guidelines for IAR and ICA, and underlying biennial reports (BRs, for developed countries) and biennial update reports (BURs, for developing countries), were also put in place. The literature also includes examples of case studies of MRV in specific countries, for example South Africa (Boyd, Rennkamp, Dane, & Winkler, 2014), China (WRI, 2009), and others pointing to enhanced MRV obligations for developing countries (Gao & Teng, 2014).

More recent literature, intended to inform negotiations in the run-up to the 2015 Paris Climate Conference, included thinking on how transparency could drive ambitious action in the new climate regime (Deprez, Colombier, & Spencer, 2015). Wiener (2015) enumerated six essential functions performed by MRV: (1) assessing the performance of national policies, (2) comparing across national efforts, (3) assessing aggregate international action towards global goals, (4) evaluating alternative policy instrument designs, (5) facilitating cross-national linking, and (6) enabling adaptive learning. Other authors focused on building on MRV towards a transparency framework tailored to capability

and national circumstances (Dagnet, Fei, Elliott, & Qui, 2015). Since Paris, researchers have sought to unpack the provisions on transparency (Briner & Moarif, 2016). In this context, this article presents an in-depth analysis of the transparency framework for action and support as set out in the Paris Agreement, and outlines implications for implementation in both domestic transparency systems and further international negotiations.

Given the shift from the multilateral negotiation of commitments under the 1997 Kyoto Protocol, to *nationally determined* contributions in the Paris Agreement, the review of progress in achieving nationally determined contributions (NDCs) is particularly important: review of progress in achieving NDCs at the individual level, collective review in the 2023 global stocktake (Article 14) and review of compliance (Article 15). It should be noted in this context that several commitments in the new treaty are obligations of conduct, rather than result. Several provisions on transparency are binding, including the core provision on ‘review’ of information on individual contributions. The binding elements of transparency thereby strengthen the overall architecture of the Paris Agreement. Readers less familiar with the Paris Agreement are referred to Section 2 for a summary of Article 13.

The article is organized as follows. Having located transparency in the literature in this Introduction, Section 2 examines the provisions of Article 13 comprehensively. Section 3 deepens analysis by focusing on key aspects: differentiation; adaptation, support, mitigation accounting; technical expert review. Capacity building, which is at the heart of the Paris transparency framework and underpins domestic systems, is considered in Section 4. Section 5 explores implications for further work in international negotiations, before an overview is offered in the Conclusions.

## **2. Transparency in the Paris Agreement**

Article 13 first establishes a transparency framework for action and support, identifies purposes, information to be provided, a technical expert review, development of common modalities, procedures, and guidelines (MPGs) and concludes with support for transparency-related capacity in developing countries. The analysis of Article 13 in this section follows this structure.

The first four paragraphs establish an enhanced transparency framework for action and support, with built-in flexibility, based on capacity need, and building on collective experience. Flexibility is afforded to developing countries that need it, and the common MPG are required to reflect flexibility (note the ‘shall’ in Article 13.2 referring forward to paragraph 13). The third paragraph recognizes special circumstances of Least Developed Countries and Small Island Developing States, who expressed particular concern about undue burdens, while providing that for all countries, transparency will be undertaken in a facilitative, non-intrusive, non-punitive manner. The Agreement is explicit that the framework will build on collective experience.<sup>2</sup> Article 13.4 specifies key elements of the transparency arrangements under the Convention, which were negotiated from Bali (UNFCCC, 2007) with broad agreement in Cancun (UNFCCC, 2010), most guidelines adopted in Durban (UNFCCC, 2011b), adding provisions on technical teams of experts in Warsaw (UNFCCC, 2013a) and revised methodologies for the reporting of financial information by Annex I Parties in Paris (UNFCCC, 2015b). The specific elements of the previous experience to be considered in developing the MPGs are named in 13.4 – essentially national communications under the Convention and the key elements of MRV established between Bali and Warsaw.

Paragraphs 5 and 6 identify the purpose and scope of transparency of action and transparency of support, respectively. The purpose of the framework for transparency of action is to understand climate action in light of the Convention's ultimate objective as set out in its Article 2, with specific focus on clarity and tracking progress towards individual mitigation NDCs (Art 4), adaptation plans, good practices, priorities, needs, and gaps (Art 7). Information on both adaptation and mitigation, including communications by Parties, are specified as inputs to the global stock-take. The scope of transparency of action is thus clearly both mitigation and adaptation. Clarity is again key to the purpose of transparency of support. The scope is both support provided and received; by listing several articles, it includes support relating to mitigation, adaptation (Art 4 and 7, respectively), and in the form of finance, technology and capacity building (Article 9–11). Finance is highlighted by including provision of an overview of aggregate finance for the global stocktake under Article 14.

Paragraphs 7 to 10 specify information to be provided by Parties. The language in Article 13.7 is mandatory and precise ('Each Party shall ...'), establishing an obligation to regularly provide greenhouse gas inventories and information to track progress on nationally determined contributions (NDCs). Note that the scope of NDCs in Art 13.7 is given as mitigation ('under Article 4' which plainly deals with mitigation). Other parts of Article 13 referring to NDCs are not specified as clearly, and capable of the broader interpretation of NDCs set out in Article 3. The provision of information on adaptation is voluntary ('should' in Art 13.8), unlike that on mitigation. On support *provided*, the provision of information is mandatory for developed countries, but voluntary for others. Providing information on support *received* by developing countries is voluntary.

The form and scope of a technical expert review (TER) is the main focus of paragraphs 11 and 12. Article 13.11 makes specific information on mitigation (Article 13.7, inventories, progress tracking) and support provided (Article 13.9) subject to TER. Capacity building needs can be identified through the TER. This paragraph also identifies a facilitative, multilateral consideration of progress on Article 9 (finance) and on implementation and achievement of a Party's NDC – here it is not specific which aspects of the NDC are meant. The relationship of this multilateral assessment (which has some similar language to ICA) to the global stocktake will need to be clarified in further negotiations; some of the literature on IAR and ICA may be useful in this respect (see Section 1). Paragraph 12 has the TER as its subject (unlike the information to be reviewed, which is the focus in 11).

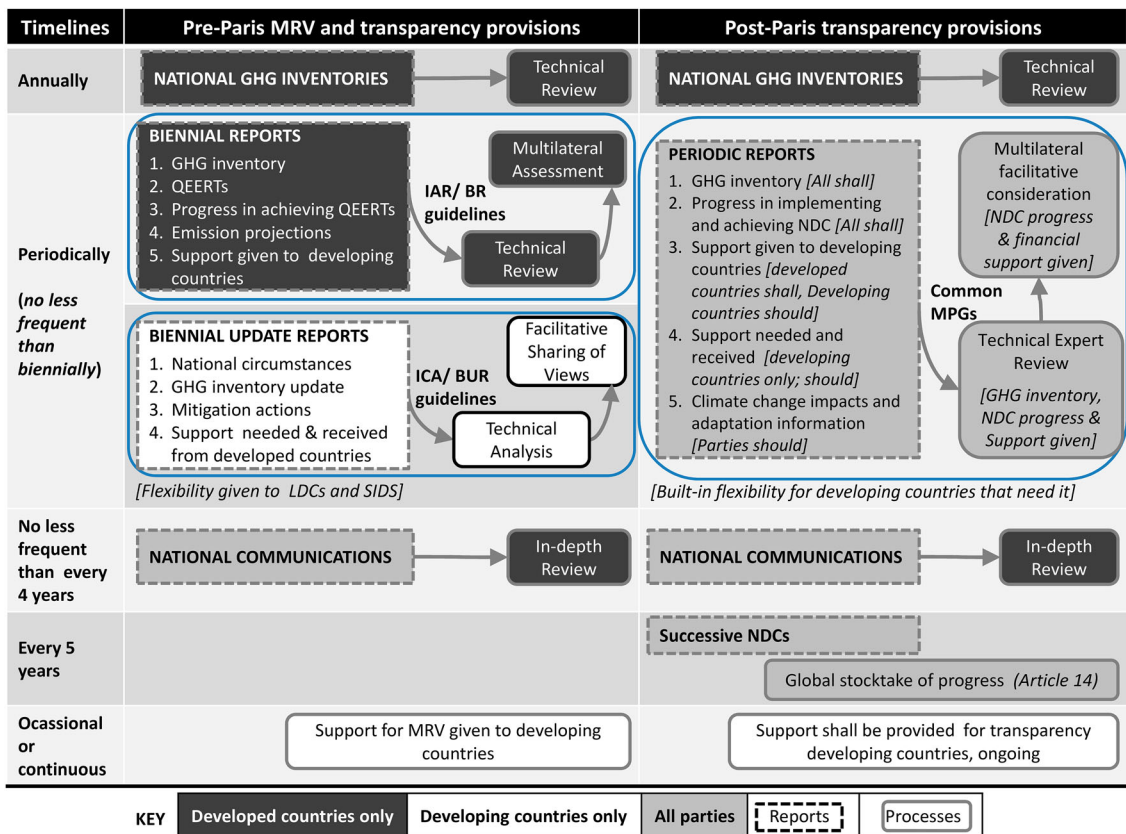
Art 13.13 provides for the development of common MPG for transparency of action and support. The MPG are the only elements in Article 13 explicitly identified as 'common'. This should be read with reference back to both Art 13.2 and 13.4 – that development of common MPG must build on experience and provide flexibility, related to capacity.

The final two paragraphs of Article 13 require support for transparency actions in developing countries. Article 13.14 specifies that support shall be provided to developing countries for implementation of transparency. The paragraph captures two different aspects of the climate negotiations. As with many provisions on finance, the provision is couched in the passive voice, meaning that it is not specified who shall provide finance – reflecting divergence whether the pool of donors should be broadened or not. Secondly, support will be provided for the production of reports by developing countries that comply with the provisions of this Article. Taken together, Article 13.14 provides

assurance that the existing funding model for national communications and BURs, which happens through the Global Environment Facility (GEF), will continue during the post 2020 period; while leaving open the option of additional sources of funding. Article 13.15 requires support for the building of the transparency-related capacity of developing countries on a continuous basis.

### 3. Interpreting key aspects of article 13

The previous section outlined the core content of Article 13 overall. This current section analyses key issues in Article 13. Key issues are those considered by the authors as having received insufficient attention (such as Sections 3.1, 3.2.1, and 3.2.2) or that are particularly important to the implementation of the transparency framework (Sections 3.2.3 and 3.3). An overview of Article 13, together with an illustration of the shift from MRV and transparency arrangements pre-Paris to the enhanced transparency framework under the Paris Agreement, is provided in Figure 1. The following discussion of various elements will refer to this figure.



**FIGURE 1** Provisions for MRV prior to Paris and the enhanced transparency framework under the Paris Agreement

### 3.1. Differentiation

The question of differentiation was one of the most hotly contested in the negotiations on the Paris Agreement, with two extreme views emerging. On the one hand, the first such view supported a strict application of the principle of ‘common but differentiated responsibilities and respective capabilities’ (CBDR&RC) (UNFCCC, 1992, Article 3.1) to the Paris Agreement in the form of two systems, differentiated between Annex I and non-Annex I Parties.<sup>3</sup> On the other hand, the second view insisted that the world had moved on and that a single or common system was required. There was an analysis of options for more nuanced forms of differentiation (Winkler & Rajamani, 2014), and Brazil proposed an approach of concentric differentiation (Brazil, 2014) that opened up the debate. In the negotiation process, what emerged was an agreement to deal with differentiation in general early in the Agreement, and then to apply it, in different and nuanced ways, to various provisions.

The left-hand side of Figure 1 shows more elements specific to developed and developing countries (shaded black and white, respectively), whereas the enhanced transparency framework on the right-hand side has many elements for all Parties.

The treatment of differentiation in relation to transparency is particularly nuanced, with flexibility related to different capacities. Article 13 is neither a bifurcated system, nor a single common framework. The transparency framework is characterized neither as ‘common’ nor ‘differentiated’. The only adjective qualifying ‘transparency framework’ in Article 13 is ‘enhanced’. The word ‘common’ is applied to MPG, but not to the framework as a whole.

Similarly, the word ‘differentiated’ does not occur in Article 13; what is referenced are ‘different capacities’. Note that the differentiation is not in relation to responsibility, which is more relevant to the core obligations to take action. In the context of obligations such as reporting and review under the transparency framework, the normative basis for differentiation is Parties’ capabilities.

Flexibility is also an element of differentiation. Flexibility is referred to four times in Article 13, being part of the framework elaborated in Article 13.2, and also applied in the technical expert review in Article 13.12. The MPGs will be common, but in line with Article 13.2, must also include flexibility. Flexibility is for developing countries ‘that need it’ (Article 13.2) – again a nuance on differentiation. The rider of need suggests that not all developing countries will require the flexibility. It is also possible that, with time, fewer developing countries will require the flexibility as their capacities increase.

It is worth noting that, at the outset in its first paragraph, Article 13 includes the concept of ‘built-in flexibility’. This is an inherent feature of the transparency framework. Collective experience on the development of Land Use and Land-Use Change and Forestry (LULUCF) rules for the second commitment period of the Kyoto Protocol, has illustrated problems that might arise from unconstrained flexibility. The Kyoto LULUCF rules granted largely unconstrained flexibility, allowing countries to choose their accounting method, according to their national circumstances. The only constraint was that adequate information was to be provided to facilitate clarity of the accounting method. In practice, the process made it technically impossible to compare the information from one country to another. Comparability is now one of the key accounting principles, known as the ‘TACCC’ principles of ‘transparency, accuracy, completeness, comparability, and consistency’ included in Article 4.13. In cases where national circumstances might make comparability difficult, ‘built-in’ flexibility would apply and would qualify the extent of comparability. Implementing the flexibility provided for in Article 13 should enable improved transparency over time, and not be used to undermine comparability.

The ‘common’ MPGs are qualified in the sense that they will build on an existing system that is in two parts: IAR and ICA, BR and BUR. This transition is shown in [Figure 1](#). It can be expected that transparency actions will become more common over time, whereas flexibility in relation to capacity is likely to persist. The timing of the transition is discussed in Section 5.3 below.

It is worth noting that, for many developing countries, the MRV requirements were already enhanced, relative to the original reporting and review obligations under the Convention. When it was first agreed under the Cancun Agreements at COP 16, the MRV system referred to ‘enhanced reporting requirements’ (UNFCCC, 2010). One reason that may explain the low number of biennial update reports submitted by developing countries so far (by end of 2016) is that the MRV system, agreed relatively recently, was already ‘enhanced’ beyond previous requirements (see also Gao & Teng, 2014). In particular, the frequency of submissions had increased for developing countries from an average four, to two years.

It is also worth noting that informational requirements on support in Article 13 differ among Parties. Developed countries are required to report on support provided, whereas others may voluntarily report. Developing country reporting on support received is voluntary, and they may also report on needs. There are common information requirements, notably that all Parties submit information on mitigation and support, which is subject to a technical expert review (Article 13.11). However, capacity building is offered here, again to developing countries that need it. As Rajamani (2016) puts it: ‘Differentiation in the transparency provisions is thus a pragmatic tailoring of informational demands to capacities’.

### **3.2. Transparency of adaptation, support and mitigation**

The transparency framework is comprehensive, in five ways. Firstly, the framework agreed in Paris explicitly deals with both action and support. Secondly, action includes both adaptation and mitigation. Thirdly, support refers to finance, technology, and capacity building. Fourthly, support is both provided and received. And finally, Article 13 includes capacity building for transparency actions by developing countries.

In the authors’ view, transparency in the Paris Agreement should be interpreted in a comprehensive manner, rather than privileging some aspects over others. Elements of adaptation, capacity building, and inclusion of support received, distinguish the transparency system from that of MRV. A plain reading of Article 13, as summarized above, indicates the comprehensive nature of transparency.

#### **3.2.1. Transparency of adaptation**

Transparency of adaptation has received much less attention than transparency of mitigation and support, developing more recently both within the UNFCCC process and the literature. Article 13.8 provides that each Party should provide information on impacts and adaptation. Although the language (‘should’) makes this voluntary, this does not reduce its importance. The vast majority (89%)<sup>4</sup> of intended nationally determined contributions (INDCs)/NDCs<sup>5</sup> include both adaptation and mitigation, even though there is no mandatory requirement to do so. This signals the importance of adaptation in climate action to virtually all countries; some who did not include adaptation in their INDCs submitted separate undertakings.



Adaptation was mostly absent from the MRV system, with only funding for adaptation listed among other elements to be included in BRs, and no mention of adaptation in guidelines for preparing BURs. Explicit inclusion of adaptation in transparency, even though voluntary, thus constitutes an enhancement. [Figure 1](#) shows information on impacts and adaptation included under the post-Paris transparency provisions, while there is no reference to adaptation on the left-hand side. The treatment of adaptation in Article 13 thus signals a step-change in the treatment of adaptation under the UNFCCC process.

The authors of this article consider it important that transparency of mitigation is not emphasised to the point of ignoring transparency of adaptation. The very aim of transparency of action, as set out in Article 13.5, is clarity relating to both Article 4 (mitigation) and Article 7 (adaptation) in the Paris Agreement, while informing the global stocktake referred to in Article 14. Article 14.1 is explicitly comprehensive, considering ‘mitigation, adaptation, and the means of implementation and support’. Separating transparency of adaptation from other components of transparency (mitigation and support) can have the effect of diminishing the importance of adaptation, which would be inconsistent with the comprehensive nature of both Articles 13 and 14 of the Paris Agreement.

The scope of work of MPG shall include transparency of both action and support, as set out in Article 13.13. Given the purpose of transparency of action includes adaptation, the MPG must include transparency of adaptation. The adaptation component of the common MPG should deepen and improve the information reported on adaptation. Article 13.8 points to the scope of such information, namely, on impacts and adaptation under Article 7. Core areas that could be reported regularly include, at the international scale, various means of cooperation among Parties, listed in Article 7.7, and for each country, adaptation planning and implementation of actions, as set out in Article 7.9. The common MPG will include adaptation, and as such, must address the technical and methodological complexities of reporting on adaptation.

Adaptation is part of transparency, but this does not mean that adaptation is treated in precisely the same manner as mitigation and support. Adaptation is not subject to technical expert review, as Article 13.11 refers back to Article 13.7 (mitigation) and Article 13.9 (support provided), but not to Article 13.8 (adaptation).

### 3.2.2. Transparency of support

The mandate for the Paris negotiations agreed at COP 17 in Durban in 2011 established, from the outset, the framing of ‘transparency of action and support’ (UNFCCC, [2011a](#)). The Paris Agreement reflects this in establishing a ‘transparency framework for action and support’ in Article 13.1, not a ‘transparency framework’ on any single issue. In relation to support, the Agreement distinguishes between informational requirements of developed and developing countries, related to support provided and received. Article 13.9 is a mandatory requirement that developed countries ‘shall’ report on support provided. It nuances differentiation in opening such reporting to ‘other Parties that provide support, but makes this voluntary (‘should’ rather than ‘shall’). Developing countries will report voluntarily on support needed and received, as specified in Article 13.10.

The negotiations leading up to Paris considered how support provided and received might be reflected. Article 13.11 sets up a facilitative, multilateral consideration of information on support for



developing countries that is ‘provided and mobilized through public interventions’ (Article 9.7). This is an ‘enhanced’ provision for developed countries. The existing transparency arrangements under the Convention do not contain the multilateral assessment of support received.

The balances on differentiation are struck across transparency of action and transparency of support. A recent assessment of ambition and differentiation captures the balances:

These provisions place uniform informational requirements on Parties in relation to mitigation and adaptation, but differentiated requirements in relation to support. Since Parties have differentiated obligations in relation to support the informational requirements are accordingly differentiated. (Rajamani, 2016)

The nuanced differentiation on who reports information on support that is expressed in Articles 13.9 is also found in Article 9.7. However, note that the latter provision includes finance provided and mobilized, whereas transparency only includes finance provided. The balance is that the mandatory requirement on developed countries could be broadened, voluntarily, so the approach is not purely along developed /developing country lines, but neither is there any requirement to broaden the donor pool – or provide information on the support. Multiple aspects of periodic reports, as in [Figure 1](#), illustrate the increased transparency of support. The MPGs may provide guidance to both mandatory and voluntary reporting on support.

There are significant challenges to monitoring and estimating climate finance. Most broadly, the question is what and how to track climate finance (Clapp, Ellis, Benn, & Corfee-Morlot, 2012). Definitions of what is included in climate finance, and the \$100 billion per year target politically agreed in Copenhagen and referenced in the Paris decision, is only a part – probably smaller – of the broader finance and investment needs of climate-change mitigation and adaptation (Peake & Ekins, 2016). Developed countries have reported according to a common tabular format that includes specifications for reporting finance in BRs. For developing countries, reporting on support received is new, and enhanced capacity will be required. Scoping studies have been undertaken on strategic approaches to climate finance, adapted to national circumstances (Naidoo, Amin, Dimsdale, & Marcela, 2014). Particular methodological challenges would arise when seeking to quantify the effect of public interventions aimed at mobilizing private finance for climate activities; options have been analysed, involving choices beyond reporting (Jachnik, Caruso, & Srivastava, 2015). Leveraging raises potential issues of double counting, counter-factuals, replication, and substitution (Brown, Buchner, Wagner, & Sierra, 2011). Taken together, these challenges suggest that reporting requirements alone will not be sufficient to improve the transparency and consistency of information on climate finance. Transparency of *mobilized* finance might focus on definitions and assumptions. Methodological challenges can be overcome, given that guidelines have been explored for several years (Tirpak, Ronquillo-Ballesteros, Stasio, & McGray, 2010).

### **3.2.3. Transparency of mitigation, including accounting, accountability and markets**

Transparency of information on mitigation can be enhanced by clear accounting rules. Article 4.13 already requires countries to account for their mitigation NDCs:

Parties shall account for their nationally determined contributions. In accounting for anthropogenic emissions and removals corresponding to their nationally determined contributions, Parties shall promote environmental integrity, transparency, accuracy, completeness, comparability and consistency, and ensure the avoidance of double counting, in accordance with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to this Agreement.

This mitigation accounting provision includes the ‘TACCC’ principles, which are to be given operational effect through ‘guidance adopted’ by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA). It uses the broader term ‘guidance’, rather than guidelines which are taken to mean written rules, yet the reference to adoption means a CMA decision. Furthermore, decision 1/CP.21 requests the Ad Hoc Working Group on the Paris Agreement to ‘elaborate, drawing from approaches established under the Convention and its related legal instruments as appropriate, guidance for accounting’ for NDCs, referring back explicitly to Article 4.13 (UNFCCC, 2015c, paragraph 31). The authors of this article are of the view that negotiations on this topic might best build on specific elements that were considered in the negotiations leading up to Paris, namely: methodologies and common metrics; methodological consistency between communication and implementation; including all categories over time; and explaining any exclusions. In short, the Paris Agreement provides for accounting for the mitigation component of NDCs and elaboration of specific guidance.

It is clear that the negotiations on accounting will directly inform the development of MPGs under Article 13. Parties may need to consider the sequencing of these pieces of work to ensure timely completion of the development of MPGs. In this regard, two key considerations become important: first, the negotiations on accounting should be sequenced before the finalization of MPG. Secondly, since the MPGs are to be finalized by 2018 (UNFCCC, 2015a, para 96), guidance for mitigation accounting needs to be developed no later than the end of 2017, so that it can inform the MPGs.

‘Accountability’ is sometimes referred to in the MRV and transparency literature, though the term occurs neither in the Paris Agreement, nor in decision 1/CP.21. ‘Hard’ accountability under the Paris Agreement might have required enforcement provisions in relation to compliance, akin to those under the Kyoto Protocol; Paris opted instead for a ‘soft’ version, of facilitative compliance. However, it might be argued that the general requirement of progression of obligations (Article 3) provides some accountability to contribute to the collective advance in achieving the Agreement’s goals. The global stocktake under Article 14 will assess collective progress, including on mitigation, and can be understood as a process of mutual accountability. Progression in mitigation, through successive NDCs (Article 4.3), on the one hand sets the ‘baseline’ to each country’s own past contribution. On the other hand, it also creates an expectation (‘will’) that countries can hold each other accountable to show progression. This expectation is included in a legal agreement, giving this form of accountability some weight. The requirement to ‘account for’ NDCs (Article 4.8) can also be interpreted as a form of accountability. Even clearer is the requirement to provide information on implementing and achieving NDCs, under Article 13.7(b). That information is subject not only to technical expert review but also to facilitative, multilateral consideration, which carries a strong sense of accountability. Read together, accountability in the Paris Agreement can promote collective action to solve a global commons problem – even without the word being mentioned.

Countries may use units from mechanisms under Article 6, including market mechanisms – or ‘cooperative approaches that involve the use of internationally transferred mitigation outcomes’ as they are called in the Paris Agreement – for compliance with their NDCs (Article 6.2). Transparency requires robust accounting of units, and avoiding double counting is explicitly mentioned in the Agreement, with decision 1/CP.21 requesting the Subsidiary Body for Scientific and Technological Advice (SBSTA) to develop guidance ‘to ensure that double counting is avoided on the basis of a corresponding adjustment by Parties for both anthropogenic emissions by sources and removals by sinks’ covered by their NDCs. This guidance will be adopted by the CMA (UNFCCC, 2015a, paras 36–38).

### **3.3. Understanding technical expert review**

Article 13.11 and 13.12 provide for a TER. In the first of these two paragraphs, the subject is information, specifying that information on mitigation and support provided (by developed countries mandatorily, others voluntarily) will be subject to TER. Capacity-building needs of developing countries may be identified in the TER. Mitigation and finance are the focus of a ‘facilitative, multilateral consideration of progress’ on finance, and ‘implementation and achievement’ of a Party’s NDC. Note that the facilitative consideration is shown in Figure 1 as applying to all Parties, while in-depth review of national communications of developed countries continues under the Convention.

It is important to note that review of ‘implementation and achievement’ of NDCs is mandatory, in that ‘each Party shall participate’ in TER; whereas mandatory obligations that Parties ‘shall implement’ or ‘shall achieve’ NDCs were blocked in the negotiations of Article 4. Major players were unwilling to commit to implementation, but mandatory review was acceptable.

Article 13.12 indicates that TER will identify areas of improvement for the Party, and review consistency with the common MPG. The experience with expert review teams (of Annex I national communications and more recently BRs) and technical teams of experts (of BURs by developing countries) suggests that the technical aspects of review are crucial. Facilitative, multilateral consideration under Article 13.11 provides an important political space, with technical rigour deriving from TER. TER also provides opportunities to learn and improve over time. In the existing arrangements under the Convention, there are expert review teams (ERTs) reviewing Annex I annual GHG inventories and full national communications and biennial reports of developed countries; and technical teams of experts (TTE) who analyse biennial update reports by developing countries (UNFCCC, 2012). Designing effective TER is considered further in Section 5.7.

## **4. Implications for domestic systems and transparency-related capacity**

The further requirements of the enhanced transparency framework of the Paris Agreement have implications at the national level. The implications are broadly two-fold, requiring enhanced arrangements and MRV systems, as well as enhanced domestic capacity. The MRV provided guidelines for domestic institutional arrangements, processes and information management systems of developed and developing countries (UNFCCC, 2010, 2013b). There is no equivalent reference to domestic processes in Article 13.

This gap is at odds with the further enhancement of information requirements, as domestic systems for MRV are fundamental for implementation of transparency at the national level. The

Paris Agreement requires preparation of GHG inventories; reporting on NDC progress, climate impacts and adaptation actions; and reporting of financial support provided and received (as elaborated above). Yet the institutional basis of reporting is not explicit. Addressing new informational requirements will pose challenges to some developing countries. The expanded scope of information and increased frequency of reporting required (since the Cancun Agreements in the case of mitigation) demands a more systematic approach. In turn, this will require institutional capacity in many countries, especially developing countries, to be further enhanced, to enable the continuous improvement of information provided for the purposes of clarity, transparency and understanding.

Provisions on building transparency-related capacity is at the heart of Article 13. The Paris Agreement ensures the continued provision of support to developing countries for the implementation of transparency provisions in Article 13.14 and 13.15. This enhances the existing commitments of certain developed countries under the Convention's Article 4.3, to 'meet the agreed full costs incurred by developing country Parties' in relation to its Article 12.1 on communication of information. More recently, support for MRV has been essential in building domestic MRV systems and enhancing the ability to report internationally. The Paris Agreement continues to affirm that support 'shall be provided to developing countries' for implementing the existing transparency arrangements under the Convention.

The GEF has funded MRV and is expected to continue funding the enhanced transparency framework. The extent of funding will increase as more in-country work is needed. Institutions serving the Paris Agreement should ensure 'efficient access to financial resources through simplified approval procedures' (Article 9.9).

Delays in provision of support would be a barrier to biennial communications.

Up to now, developing countries have received funding to produce reports. In many instances, this process involves the hiring of service providers to undertake the work of compiling and documenting the information for reports. This process is reflected in Article 13.14. In addition, Article 13.15 contains a new notion, that of providing support for building transparency-related capacity in developing countries on an on-going basis. This provides an opportunity for developing countries to receive funding that will ensure that they build up their technical, human and institutional capacity to undertake transparency actions, over time. There is no time limit for this type of support.

This is a significant undertaking, as it ensures even 'late starters' in readying themselves for effective participation in the Paris Agreement will still have an opportunity to benefit from this support. The scope of the actions to be supported through this process is not specified. Given that the scope of transparency includes adaptation as well as support, and a nationally determined approach, it can be expected that there will be requests to support the newer elements of reporting adaptation and support received. By contrast, the focus in the literature and emerging transparency networks has been on mitigation transparency issues.

The implementation of Article 13.14 and 13.15 will be key to ensuring that developing countries play an effective role in the implementation of Article 13, and through it of the Paris Agreement as a whole.

## 5. Further work in implementing transparency under the Paris Agreement

As discussed throughout this study, Article 13 contains crucial provisions on transparency. Decision 1/CP.21 sets out some processes to develop the enhanced transparency framework, and more work may need to be launched in order to implement an effective, enhanced transparency framework. In [Figure 1](#), the shift from the existing provisions under the Convention to the enhanced transparency framework would be a shift from the left-hand side to the right-hand side. In negotiations, this will require further consideration, and this section focuses on what needs to be done.

### 5.1. Capacity-building initiative for transparency

Capacity building is a *sine qua non* for the implementation of the transparency framework by developing countries. Recognising this, decision 1/CP.21 launched a Capacity-Building Initiative for Transparency (CBIT) (UNFCCC, [2015a](#), para 86–88), to be funded through the GEF. The 50th meeting of the GEF Council in June 2016 decided to establish a new trust fund for the CBIT (GEF, [2016a](#)) and provided programming directions (GEF, [2016b](#)).

The CBIT was established in the Paris outcome, and hence is expected to play a central role. However, given the extent of the need, the CBIT will need to coordinate several initiatives that seek to meet the capacity related needs of the developing countries. International institutional initiatives include the International Partnership on Mitigation and MRV,<sup>6</sup> the UNFCCC's Consultative Group of Experts, the Initiative for Climate Action Transparency (ICAT),<sup>7</sup> and Climate Transparency.<sup>8</sup> Any network requires coordination to be effective and maximize synergies, and this role would appropriately fall to CBIT. The CBIT and network will need to measure and assess its effectiveness.

### 5.2. Common MPG building on existing MRV

The development of common MPG, building on arrangements under the Convention, will be central to the negotiations on the transparency framework. Section 3.2.1 has outlined the process. At COP-22 in Marrakech, work on transparency of action and support was planned and captured informally (in Co-Chairs notes, not in decisions). The process of developing MPGs should start with the development of reporting guidelines. Consistent with the scope of Article 13, such reporting guidelines would cover mitigation, adaptation, and support. Parties worked to avoid duplication of work across different bodies of the UNFCCC, and sought to strengthen linkages between transparency issues under Article 13 and related aspects of work (e.g. accounting) under the agenda item 5 of the Ad hoc Working Group on the Paris Agreement (APA) will affect the sequencing of work.

### 5.3. Timing of transition

Perhaps in recognition of varying national circumstances and different starting points of countries regarding transparency, the Paris Agreement is silent on the timing of a transition from the existing MRV arrangements to the enhanced transparency framework. Decision 1/CP.21 gives some information on timing of the transition, but in very broad terms: indicating that transparency will supersede MRV 'eventually', but in the same paragraph also mentioning 'immediately following the submission of the final biennial reports and biennial update reports' (UNFCCC, [2015a](#), para 98). Although the absence of any mention of 'MRV' in the Paris Agreement is striking, and represents

a complete shift in language to ‘transparency’, this might be for the period after 2020, as the decision in relation to pre-2020 ambition urges all Parties ‘to participate in the existing measurement, reporting and verification processes under the Cancun Agreements, in a timely manner,’ (UNFCCC, 2015a, para 105). From this one can also draw a clear sense that the existing MRV framework continues to provide information up to 2020.

#### 5.4. Transparency of support

Since there has been less work on transparency of support in the past, work on the common MPGs will need to focus on the novel aspects related to transparency of support. The mandatory informational requirements on developed countries on support provided will require attention. In this respect, the APA will be able to draw on the work of SBSTA on modalities for accounting of public finance for developed countries, improving guidance on the reporting and reviewing of information on technology and capacity building, and existing common tabular formats. New guidance will be needed on voluntary information by developing countries on support received. This should also systematize the currently *ad hoc* reporting on support by developing countries.

#### 5.5. Transparency of adaptation

Adaptation is a novel element in the enhanced transparency framework. Technically, the broad nature of adaptation means that the transparency of adaptation requires considerable attention and focus.

Background research undertaken for the adaptation component of South Africa’s INDC (CSIR, 2015) demonstrates that methodologies exist to assess adaptation and even start to quantify costs. Technical exchanges are needed on transparency of adaptation, developing methods for reporting adaptation needs, costs, gaps, and priorities, in a manner that can be useful for both transparency and the global stocktake. Emerging literature suggests that work on methodologies and metrics is required on minimum information to be included by countries in adaptation NDCs; guidance to the UNFCCC secretariat on aggregating or building a composite global picture on adaptation; and IPCC expert work on methodologies to quantify impacts, adaptation responses and investments required at national and local levels (Ngwadla & El-Bakri, 2016). The methodological work should be an integral part of developing the common MPG under the Paris Agreement.

A specific issue to be negotiated will be the frequency of reporting. To enable a comprehensive global stocktake – including adaptation – reports on adaptation need to be available every five years. Further work is needed to ensure that regular information is provided to this collective assessment. One of the lessons that countries have learned from enhanced reporting on mitigation is that frequent reporting improves the quality of information over time. The same pattern will hopefully apply to adaptation, and hence improved information would be enabled if countries reported adaptation information ‘no less frequently than on a biennial basis’ (para 90 of decision 1/CP.21). Kato and Ellis (2016) provide a useful description of information that can be reported at different frequencies under transparency of adaptation. This includes, for example, elements of adaptation that respond to extreme events and impacts on short time-frames (as distinct from slow-onset impacts), which could be reported more frequently. Increased frequency of impacts of climate change is likely over time, and the design of a durable framework should include modalities that provide for increasing the frequency of reporting as needed. It is agreed that all Parties (except least developed countries (LDCs) and small islands

developing states (SIDS)) shall submit information on mitigation, adaptation, and support (Article 13, paragraphs 7, 8, 9, and 10) ‘no less frequently than on a biennial basis’ (UNFCCC, 2015c, paragraph 91), thereby suggesting the same or similar frequency to different elements is required. In practice, increased frequency of reporting has not yet been seen in all developing countries. Those with capacity might report on adaptation every two years, with all reporting every five years. Over time, more frequent reporting might be appropriate to more frequent impacts. Regardless of the form in which adaptation is communicated – as part of NDCs, separate undertakings or as part of national communications – the MPG should encourage and enable regular reporting and continuous improvement over time.

### **5.6. Mitigation accounting, information, features**

In relation to mitigation, work on accounting for mitigation NDCs (under Art 4.13) is likely to make an important contribution to enhanced transparency. Further guidance on the information submitted with these mitigation NDCs is a mandatory information requirement for all Parties, under Article 4.8. The APA will begin work on this information in 2016, and eventually a CMA decision would help to specify and expand the elements of information.<sup>9</sup> Progress on information during the 2016 Marrakech Climate Conference was limited, with little time for Parties to discuss the issue.

Further features of NDCs will be the subject of work under the APA. Some possible features might enhance transparency, such as methodological consistency in implementing and tracking progress towards the achievement of NDCs; use of IPCC metrics and methods; and movement towards comprehensive inclusion of sources and sinks.

### **5.7. Designing effective and enabling TER**

The importance of TER has been outlined in Section 3.3 above, along with the need to find a way forward in order to operationalize a single, effective TER. Lessons from the (longer) experience with ERTs and TTEs more recently should inform the design of TER. There is currently no process mandated to look at ERTs and TTEs explicitly, although the reviews of IAR and ICA together with the development of common MPGs might include expert reviews and how they could be combined to design an effective integrated TER.

The outcomes of the TER are likely to include an assessment of the consistency of information provided by a Party with the common MPG. Articles 13.11 and 13.12 will also play a crucial role in relation to capacity, by identifying capacity-building needs and paying particular attention to the respective national capabilities and circumstances of developing country Parties. If the experts (similar to ERTs and TTEs) play an enabling role, they can identify areas of improvement in relation to transparency for the country and contribute to continuous improvement.

TER is an essential cog in the transparency process to ensure continuous improvement over time. In our view, the notion of continuous improvement over time is one of the core building blocks of the enhanced transparency framework.

### **5.8. Global stocktake and compliance**

The global stocktake under Article 14 is comprehensive, considering adaptation, mitigation and means of implementation. The work on modalities of the global stocktake relates to transparency in at least



three ways. Firstly, the global stocktake is the collective counterpart of the transparency framework, which is focused on individual NDCs – progress on which is to be monitored by the compliance mechanism (Article 15). Secondly, those individual NDCs should be part of the information considered in the global stocktake; indeed, it is hard to conceive of a comprehensive, global stocktake without consideration of the information produced by enhanced transparency. Thirdly, the global stocktake ‘shall inform Parties’ in setting their successive NDCs. Further work on transparency under Article 13 will therefore need to be aligned with the work on the global stocktake and compliance.

## 6. Conclusions

This article has presented an in-depth analysis of a central element of the Paris Agreement, the enhanced transparency framework for action and support. Section 3 examined elements that are critical or novel, particularly deepening analysis of differentiation, common MPGs, adaptation, support, mitigation accounting, and technical expert review. [Figure 1](#) presented an overview of the provisions prior to and post-Paris, illustrating the shifts required. Section 5 has pointed to the further work required for implementation, including both domestic systems and multilateral negotiations. But how is the enhanced transparency framework to achieve its purpose, to ‘build mutual trust and confidence and to promote effective implementation’ (Article 13.1)?

The authors argue that capacity must be the starting point, as without institutional capacity, no implementation is possible. In this regard, the lack of explicit mention of domestic institutional arrangements for transparency is an omission. On the other hand, Article 13 goes beyond ad hoc support for capacity, instead requiring that such support ‘shall’ be provided, and on a continuous basis. This shift is fundamental to the implementation of all other elements.

A central focus of future work, which began at the Marrakech Climate Conference in 2016, is the development of common MPGs. Building on existing MRV arrangements will mean drawing on two sets of guidelines of IAR/BRs and ICA/BURs to develop a common set of modalities. The precise timing of the transition remains to be defined.

Differentiation in transparency is nuanced: based on capability and need, rather than responsibility; and characterized neither as ‘common’ nor ‘differentiated’. The balances struck in Paris are delicate and should be carefully maintained.

Another important shift was the inclusion of adaptation in the enhanced transparency framework; consistent with the generally greater priority given to adaptation in the Paris Agreement. The article makes the case that effective implementation will require further work on methodologies for adaptation needs and costs. It may be advisable to create a set of options, given the complexity and context-specific nature of information on adaptation.

Transparency of mitigation under Article 13 established mandatory requirements to regularly report GHG inventories and information to track progress on implementing and achieving nationally determined contributions. This information is crucial to mitigation accounting, and will be subject to technical expert review, as well as a political process of facilitative multilateral consideration.

Information on support provided is also subject to technical expert review. The experience of ERTs in the technical review of developed country communications, and TTEs for developing countries, will be combined in TER.

The enhanced transparency framework on action and support is central to the Paris Agreement. Yet transparency needs to be understood as part of the broader regime. Future negotiations would do well to consider Articles 13, 14 and 15 together, in order to implement effective and adequate climate action.

## Notes

1. The Accord among a limited number of world leaders was only formally ‘noted’ by the COP (UNFCCC, 2009).
2. The collective experience also includes Article 5, 7, and 8 of the Kyoto Protocol (UNFCCC, 1997), with detailed rules elaborated in many subsequent decisions, but the focus in the Paris Agreement is on Convention arrangements.
3. The Convention includes a list of 43 developed countries in its Annex I. All other countries, mostly the developing countries, are known as non-Annex I Parties.
4. As of 21 July 2016, 142 of the 160 INDCs/NDCs submitted included adaptation.
5. *Intended* nationally determined contributions (INDCs) become nationally determined contributions (NDCs) when a country becomes a party to the Paris Agreement, usually through ratification. Successive contributions will be NDCs.
6. <http://mitigationpartnership.net>.
7. <http://www.climateactiontransparency.org>.
8. <http://www.climate-transparency.org>.
9. Decision 1/CP.21 repeats the language agreed at COP 20 in Lima, that information ‘may include, as appropriate, inter alia,’ a list of elements. Given that many countries used this voluntary list, it may not be difficult to agree a list or fixed menu. A future CMA decision might ‘each Party shall provide information ...’ and to list elements specifically, without qualification.

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## References

- Boyd, A., Rennkamp, B., Dane, A., & Winkler, H. (2014). Current approaches to MRV in South Africa: A scoping study. *Climate Policy* 14(3): 397–416. doi:10.1080/14693062.2014.845477
- Brazil (Government of Brazil). (2014). *Views of Brazil on the elements of the new agreement under the convention applicable to all parties Brasilia, United Nations framework convention on climate change*. Retrieved from [http://www4.unfccc.int/submissions/Lists/OSPSubmissionUpload/73\\_99\\_130602104651393682-BRAZILADPElements.pdf](http://www4.unfccc.int/submissions/Lists/OSPSubmissionUpload/73_99_130602104651393682-BRAZILADPElements.pdf)
- Breidenich, C., & Bodansky, D. (2009, April). *Measurement, reporting and verification in a post-2012 climate agreement*. Arlington, VA: Pew Center on Global Climate Change. Retrieved September 28, 2011, from <http://www.pewclimate.org/docUploads/mrv-report.pdf>
- Briner, G., & Moarif, S. (2016). *Unpacking provisions related to transparency of mitigation and support in the Paris Agreement* (COM/ENV/EPOC/IEA/SLT(2016)2). Paris: Organisation for Economic Co-operation and Development. Retrieved from <http://www.oecd.org/environment/cc/Unpacking-transparency-provisions-Paris-Agreement-CCXG-May2016.pdf>
- Brown, J., Buchner, B., Wagner, G., & Sierra, K. (2011). Improving the effectiveness of climate finance: A survey of leveraging methodologies. *Climate Policy Initiative*. Retrieved from <http://climatepolicyinitiative.org/wp-content/uploads/2011/11/Effectiveness-of-Climate-Finance-Methodology.pdf>

- Buchner, B., Brown, J., & Corfee-Morlot, J. (2011). *Monitoring and tracking long-term finance to support climate action* (COM/ENV/EPOC/IEA/SLT(2011)3). Paris: Organisation for Economic Co-operation and Development and International Energy Agency. Retrieved from <http://www.oecd.org/env/cc/48073739.pdf>
- Clapp, C., Ellis, J., Benn, J., & Corfee-Morlot, J. (2012). *Tracking climate finance: What and how?* Paris: Organisation for Economic Co-operation and Development. Retrieved from <http://www.oecd.org/env/climatechange/50293494.pdf>
- Council for Scientific and Industrial Research (CSIR). (2015). *Intended nationally determined contribution: Adaptation component*. Final report prepared for the Department of Environmental Affairs, South Africa. CSIR document reference number: GWDMS Pta Gen. Pretoria. Retrieved from [http://www.csir.co.za/nre/docs/INDC\\_Technical\\_Report.pdf](http://www.csir.co.za/nre/docs/INDC_Technical_Report.pdf)
- Dagnet, Y., Fei, T., Elliott, C., & Qui, Y. (2015). *Improving transparency and accountability in the post-2020 climate regime: A fair way forward* (ACT 2015 Working Paper). Washington, DC: World Resources Institute. Retrieved from [http://act2015.org/ACT\\_2015\\_Improving\\_Transparency\\_and\\_Accountability.pdf](http://act2015.org/ACT_2015_Improving_Transparency_and_Accountability.pdf)
- Deprez, A., Colombier, M., & Spencer, T. (2015). *Transparency and the Paris Agreement: Driving ambitious action in the new climate regime*. Paris: IDDRI (Institut du développement durable et des relations internationales) and Sciences Po. Retrieved from <http://www.iddri.org/Publications/Collections/Idees-pour-le-debat/WP0315.pdf>
- Ellis, J., & Larsen, K. M. (2008). *Measurement, reporting and verification of mitigation actions and commitments*. Paris: Organisation for Economic Co-operation and Development and International Energy Agency.
- Ellis, J., & Moarif, S. (2009). *GHG mitigation actions: MRV issues and options*. Paris: Organisation for Economic Co-operation and Development and International Energy Agency.
- Gao, X., & Teng, F. (2014). Provisions on MRV under the UNFCCC and perspectives. *Energy of China (Chinese Language)*, 36(2), 28–31.
- Global Environment Facility. (2016a). *Establishment of a new trust fund for the capacity-building initiative for transparency* (GEF/C.50/05). Washington. Retrieved from [https://www.thegef.org/gef/sites/thegef.org/files/documents/EN\\_GEF.C.50.05\\_CBIT\\_TF\\_Establishment\\_0.pdf](https://www.thegef.org/gef/sites/thegef.org/files/documents/EN_GEF.C.50.05_CBIT_TF_Establishment_0.pdf)
- Global Environment Facility. (2016b). *Programming directions for the capacity-building initiative for transparency* (Document GEF/C.50/06). Washington. [https://www.thegef.org/gef/sites/thegef.org/files/documents/EN\\_GEF.C.50.06\\_CBIT\\_Programming\\_Directions\\_0.pdf](https://www.thegef.org/gef/sites/thegef.org/files/documents/EN_GEF.C.50.06_CBIT_Programming_Directions_0.pdf)
- Guay, B., Corfee-Morlot, J., & Larsen, K. M. (2008). *Measurement, reporting and verification of mitigation support: Finance, technology, and capacity building. Draft for review annex I expert group on the UNFCCC*. Paris: Organisation for Economic Co-operation and Development and International Energy Agency.
- Jachnik, R., Caruso, R., & Srivastava, A. (2015). *Estimating mobilised private climate finance: Methodological approaches, options and trade-offs* (OECD Environment Working Papers, No. 83). Paris: Organisation for Economic Co-operation and Development. Retrieved from [http://www.oecd-ilibrary.org/environment/estimating-mobilised-private-climate-finance\\_5js4x001rqf8-en](http://www.oecd-ilibrary.org/environment/estimating-mobilised-private-climate-finance_5js4x001rqf8-en)
- Kato, T. & Ellis, J. (2016). *Communicating progress in national and global adaptation to climate change* COM/ENV/EPOC/IEA/SLT(2016)1. Paris: Organisation for Economic Co-operation and Development and International Energy Agency. Retrieved from [https://www.oecd.org/environment/cc/Adaptation-Communication-CCXG-paper-2016\(1\).pdf](https://www.oecd.org/environment/cc/Adaptation-Communication-CCXG-paper-2016(1).pdf)
- Moncel, R., McMahon, H., & Stasio, K. (2009). *Counting the cash: Elements of a framework for the measurement, reporting and verification of climate finance* (Working Paper). Washington: World Resources Institute. Retrieved April 9, 2010, from [http://pdf.wri.org/working\\_papers/counting\\_the\\_cash.pdf](http://pdf.wri.org/working_papers/counting_the_cash.pdf)
- Naidoo, C., Amin, A.-L., Dimsdale, T., & Marcela, J. (2014). *Strategic national approaches to climate finance: Report on scoping work in Peru, Chile and Colombia on national climate finance pathways and strategies*. London: E3G Third Generation Environmentalism. Retrieved from [http://www.e3g.org/docs/E3G\\_Strategic\\_national\\_approaches\\_to\\_climate\\_finance\\_FINAL.pdf](http://www.e3g.org/docs/E3G_Strategic_national_approaches_to_climate_finance_FINAL.pdf)
- Ngwadla, X., & El-Bakri, S. (2016). *Operationalisation of the global goal for adaptation under the Paris Agreement* (CDKN working paper). London: Climate Knowledge and Development Network.

- Nhamo, G. (2010). Dawn of a new climate order: Analysis of USA + BASIC collaborative frameworks. *Politikon: South African Journal of Political Studies*, 37(2/3), 353–376. doi:10.1080/02589346.2010.522344. Retrieved October 2, 2011, from <http://www.tandfonline.com/doi/abs/10.1080/02589346.2010.522344>
- Organisation for Economic Co-operation and Development. (2011). *Design options for international assessment and review (IAR) and international consultation and analysis (ICA)*. Paris: Author. Retrieved from <http://www.oecd-ilibrary.org/docserver/download/5k44zc5rx644.pdf>
- Peake, S., & Ekins, P. (2016). Exploring the financial and investment implications of the Paris Agreement. *Climate Policy*. doi:10.1080/14693062.2016.1258633
- Pew Center. (2010). *MRV: A survey of reporting and review in multilateral regimes*. Arlington: Pew Center on Global Climate Change. Retrieved March 31, 2011, from <http://www.pewclimate.org/docUploads/survey-reporting-review-multilateral-regimes.pdf>
- Rajamani, L. (2016). Ambition and differentiation in the 2015 Paris Agreement: Interpretive possibilities and underlying politics. *International & Comparative Law Quarterly*. doi:10.1017/S0020589316000130
- Ramesh, J. (2010). *MRV and equity critical issues in climate change discussion*. New Delhi: Press Information Bureau, Government of India. Retrieved July 1, 2010, from <http://pib.nic.in/release/release.asp?relid=62934>
- South Centre. (2008, May). “Measurable, reportable, and verifiable”: Using the UNFCCC’s existing MRV mechanisms in the context of the ad hoc working group on long term cooperative action under the convention. Geneva: South Centre. Retrieved October 3, 2011, from [http://www.southcentre.org/index.php?option=com\\_content&view=article&id=633%3A-measurable-reportable-and-verifiable-using-the-unfccc-existing-mrv-mechanisms-in-the-context-of-the-ad-hoc-working-group-on-long-term-cooperative-action-under-the-convention&Itemid=258&lang=en](http://www.southcentre.org/index.php?option=com_content&view=article&id=633%3A-measurable-reportable-and-verifiable-using-the-unfccc-existing-mrv-mechanisms-in-the-context-of-the-ad-hoc-working-group-on-long-term-cooperative-action-under-the-convention&Itemid=258&lang=en)
- Tirpak, D., Ronquillo-Ballesteros, A., Stasio, K., & McGray, H. (2010). *Guidelines for reporting information on climate finance* (WRI working paper). Washington: World Resources Institute.
- United Nations Framework Convention on Climate Change. (1992). *United nations framework convention on climate change*. New York: United Nations. Retrieved from <http://unfccc.int/resource/docs/2015/cop21/eng/10a01.pdf>
- United Nations Framework Convention on Climate Change. (1997). *Kyoto protocol to the united nations framework convention on climate change*. Bonn: UNFCCC Secretariat.
- United Nations Framework Convention on Climate Change (UNFCCC). (2007). *Bali action plan* (Decision 1/CP.13). Bali, Indonesia: Author.
- United Nations Framework Convention on Climate Change. (2009). *Decision 2/CP.15: Copenhagen accord* (Noted in COP Report, FCCC/CP/2009/11/Add.1). New York, NY: United Nations. Retrieved October 8, 2011, from [http://unfccc.int/documentation/documents/advanced\\_search/items/3594.php?rec=j&preref=600005735-beg](http://unfccc.int/documentation/documents/advanced_search/items/3594.php?rec=j&preref=600005735-beg)
- United Nations Framework Convention on Climate Change. (2010). *Decision 1/CP.16: The Cancun agreements: Outcome of the work of the ad hoc working group on long-term cooperative action under the convention* (Document FCCC/CP/2010/7/Add.1). New York, NY: United Nations. Retrieved from <http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf>
- United Nations Framework Convention on Climate Change. (2011a). *Decision 1/CP.17: Establishment of an ad hoc working group on the Durban platform for enhanced action* (Document FCCC/CP/2011/9/Add.1 (p2-3)). Durban, South Africa. Retrieved from <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>
- United Nations Framework Convention on Climate Change. (2011b). *Decision 2/CP.7: Outcome of the work of the ad hoc Working Group on Long-term Cooperative Action under the Convention*.
- United Nations Framework Convention on Climate Change. (2012). *Decision 19/CP.18: Common tabular format for “UNFCCC biennial reporting guidelines for developed country parties”* (Document FCCC/CP/2012/8/Add.3, distributed 28 February 2013). Doha, Qatar: Author.
- United Nations Framework Convention on Climate Change. (2013a). *Decision 1/CP.19: Further advancing the Durban platform* (Document FCCC/CP/2013/10/Add.1 (p 3-6)). Warsaw: United Nations. Retrieved from <http://unfccc.int/resource/docs/2013/cop19/eng/10a01.pdf>

- United Nations Framework Convention on Climate Change. (2013b). *Decision 21/CP.19: General guidelines for domestic measurement, reporting and verification of domestically supported nationally appropriate mitigation actions by developing country parties* (Document FCCC/CP/2013/10/Add.2/Rev.1). Warsaw, Poland. Retrieved from <http://unfccc.int/resource/docs/2013/cop19/eng/10a02r01.pdf>-page=16
- United Nations Framework Convention on Climate Change. (2015a). *Decision 1/CP.21, document FCCC/CP/2015/10/Add.1*. Paris: United Nations. Retrieved from <http://unfccc.int/resource/docs/2015/cop21/eng/10a01.pdf>
- United Nations Framework Convention on Climate Change. (2015b). *Decision 9/CP.21, methodologies for the reporting of financial information by parties included in annex I to the convention* (Document FCCC/CP/2015/10/Add.2, 19 January 2016). Paris: United Nations. Retrieved from <http://unfccc.int/resource/docs/2015/cop21/eng/10a02.pdf>
- United Nations Framework Convention on Climate Change. (2015c). *Paris Agreement* (Annex to decision 1/CP.21, document FCCC/CP/2015/10/Add.1, 29 January 2016). Paris: United Nations. Retrieved from <http://unfccc.int/resource/docs/2015/cop21/eng/10a01.pdf> - page=2
- Wiener, J. B. (2015). Towards an effective system of monitoring, reporting and verification. In S. Barrett, C. Carraro, & J. De Melo (Eds.), *Towards a workable and effective climate regime* (pp. 183-200). London: CEPR Press.
- Winkler, H. (2008). Measurable, reportable and verifiable: The keys to mitigation in the Copenhagen deal. *Climate Policy* 8 (6): 534–547.
- Winkler, H., & Rajamani, L. (2014). CBDR&RC in a regime applicable to all. *Climate Policy* 14 (1): 102–121. doi:10.1080/14693062.2013.791184
- WRI (World Resources Institute). (2009). *Mitigation actions in China: Measurement, reporting and verification*. Washington, DC. Retrieved from <http://www.wri.org/>