

**Accepted version. Please cite as:**

***Craft, B., and Fisher, S., 2018, Measuring the adaptation goal in the global stocktake of the Paris Agreement, Climate Policy, 18(9), 1203-1209***

Formatted: Font: 12 pt, Italic

Formatted: Font: Italic

Formatted: Font: Italic

## Outlook article

### Measuring the adaptation goal in the global stocktake of the Paris Agreement

#### Introduction

The Paris Agreement represents an important advance in the global ambition around adaptation, building on progress made in previous decisions under the United Nations Framework Convention on Climate Change (UNFCCC), notably those taken in Marrakesh in 2001 and Cancun in 2010 (Kinley, 2016; Lesnikowski, Ford, Biesbroek & Austin, 2016; Khan and Roberts 2013). The 2015 Paris Agreement sets adaptation as an equal pillar of the UN climate regime, alongside mitigation. This parity is far removed from the 1992 Convention's ultimate objective that did not see adaptation as a standalone aim. The Paris Agreement devotes the entirety of its Article 7 to provisions related to adaptation. The first such provision is the establishment of a global goal on adaptation, which has three objectives: to enhance adaptive capacity, strengthen resilience and reduce vulnerability to climate change, while contributing to sustainable development and ensuring an adequate adaptation response in the context of limiting warming to well below 2 degrees Celsius (United Nations 2015).

Progress towards achieving the purpose and goals of the Paris Agreement will be assessed by means of a 'global stocktake' (defined in Article 14). The global stocktake's mandate to measure collective progress on adaptation is a first for the international climate regime. The initial session of the global stocktake will build on the Talanoa Dialogue<sup>1</sup> and be held in 2023 with additional sessions taking place every five years thereafter. The agreed outcome of the global stocktake is to inform Parties in updating and enhancing their national actions and support (Article 14.3). In addition to reviewing overall progress made in achieving the global goal on adaptation, Article 7 outlines that the global stocktake is also set to: recognise adaptation efforts of developing countries; enhance implementation of adaptation action; and review the adequacy and effectiveness of adaptation and support provided for adaptation.

---

<sup>1</sup> In 2015, Parties decided to convene a facilitative dialogue to take stock of collective efforts to limit temperature increase to 1.5 °C above pre-industrial levels. The dialogue will take place in 2018.

How Parties report progress towards the global adaptation goal is not prescribed by the Paris Agreement. The provisions of Article 7 encourage four broad categories of action: cooperative action taking into account the Cancun Adaptation Framework; adaptation planning processes and implementation; the submission and revision of national adaptation communications; and the provision of support to developing countries (Article 7.9-10). However, Parties retain the sovereign right to utilise whichever of these they wish in order to achieve the Agreement's goals.

Parties are currently negotiating the modalities of the global stocktake. They are seeking to define how they will use information available, from various channels of national reporting and other sources, in order to review progress. In this article, we identify the main challenges to designing a meaningful assessment for the global goal on adaptation, and discuss different approaches to address these.

### **Challenges**

We have identified four key challenges through a review of peer-reviewed and grey literature on adaptation measurement and reporting, and by building on the practical experiences of the authors working with national and international stakeholders to assess adaptation over the past five years. The challenges are: designing a system that can aggregate results; managing the dual mandate of reviewing collective progress and informing the enhancement of national level actions; methodological challenges in evaluating adaptation; and political challenges around measurement in the climate regime.

#### ***Designing a system that can aggregate results***

To review overall progress, Parties will need to gather data around the three internationally agreed targets of the adaptation goal: enhancing adaptive capacity; strengthening resilience; and reducing vulnerability. These targets are overlapping - meaning some activities could be classified under multiple targets - and inter-linked in terms of achieving results. For example, strengthening the adaptive capacity of individuals or local institutions may lead to reduced vulnerability and increased resilience. Results will need to be aggregated in some form to assess overall progress. Each of these areas are challenging to measure in themselves, but aggregating metrics from different contexts and scales to give a collective assessment presents further complications such as the comparability and quality of data sources, indicator selection, different objectives for adaptation and the additionality of adaptation actions (Bours, McGinn & Pringle, 2015; Fisher, Dinshaw, McGray, Schaar & Rai 2015; UNEP, 2017; Christiansen,

Martinez and Naswa, 2018). While leaving the three domains of the goal to be operationalised by each Party according to their national context may be politically appealing, this would make understanding collective progress extremely challenging. In considering linking adaptation results across scales, Leiter (2015) notes results can be linked through (i) standardised indicators as used in global climate funds such as the Adaptation Fund, (ii) common themes with different indicators at different levels as planned in the Mexico and South African adaptation monitoring and evaluation (M&E) systems, or (iii) informal links and synthesis of results as used in Norway and Germany. While the theoretical approaches to aggregation may exist, Berrang-Ford, Wang, Lesnikowski, Ford & Biesbroek (2017) review existing adaptation assessment frameworks and conclude that no frameworks currently meet the challenge of aggregation needed for the global adaptation goal. They identify a “clear trade-off between ... frameworks emphasizing context-specificity ... and those that emphasize aggregation at the expense of sensitivity to context and coherent measurement” (p46).

#### ***Managing the dual mandate to review collective progress and enhance national action***

The global stocktake’s objective to review overall and collective progress (Article 7.14(d) and Article 14.1) does not automatically align with its mandate to inform the updating and enhancing of national level actions (Article 14.3). These mandates provoke different incentives (Anderson, Khan, Fikreyesus & Gomes, 2014; Roerher and Koudio, 2015) and measurement needs to be tailored to one or the other objective: either to capture a rigorous picture of collective progress, or to understand how and why progress is being achieved in one context and therefore how it can be improved over time. As Arnott, Moser & Goodrich (2016) argue, any adaptation measurement effort ‘should begin by understanding the evaluation purpose the indicators are designed to serve and whose interests they consider or not’ (p8).

#### ***Methodological challenges around the evaluation of adaptation***

If the global stocktake is to review outcomes (i.e. whether adaptation has actually been ‘achieved’ as opposed to whether activities have been completed or money spent) then the assessment will need to take account of the measurement challenges inherent in climate change adaptation. This is particularly important in a long-term mechanism when uncertainty in climate change and adaptation outcomes will be increasingly important. There is an emerging literature on this topic that identifies the following challenges: long time horizons of adaptation outcomes; the shifting baseline and uncertainty around climate hazards; assessing attribution of any results; and addressing the additional climate risk and counterfactual scenarios (Brooks

et al. 2013; Bours, McGinn & Pringle 2014; Lesnikowski and Ford, 2017). Fisher et al. (2015) in a review of evaluation methods for climate change adaptation argue that it is how the measurement techniques are put together that helps address the challenges, and an approach built on mixed methods, participation and learning helps alleviate some of the uncertainties around interpreting results on adaptation. The objectives of the adaptation goal are not easy to assess even within defined adaptation programmes where the main objective is adapting to climate risks. Adaptation is also occurring through government policies (whether labelled adaptation or not) and autonomous actions, and as part of day-to-day development and economic activity. To get a true assessment of progress, the global stocktake would also need to collect some assessment of this broader activity.

#### ***Political and feasibility challenges around measurement within the climate regime***

Current attempts to measure adaptation action are linked to the politicised history of both adaptation and reporting within the climate regime. In terms of adaptation, Khan and Roberts (2013) detail the political challenges underlying adaptation's incorporation into the international climate regime such as the mistrust between Parties resulting from the lack of mitigation action. The pledges to provide adaptation financing, particularly to the most vulnerable countries, have been mired in ongoing debates around defining climate finance and classifying countries that are 'particularly vulnerable' (Möhner 2018). Leiter and Pringle (2018) for example discuss the highly politicised debate around using vulnerability rankings to determine resource allocation, concluding that these types of assessments inevitably contain 'value judgements that can be contested' (p35).

The Paris Agreement is built on a system of nationally determined contributions (NDCs) that, for adaptation, offers a way forward despite unresolved political issues. While Article 7.6 recognizes the importance of adaptation finance for particularly vulnerable nations, it does not prescribe which countries should provide support or which developing countries are particularly vulnerable. It also states that each Party should report their adaptation actions, but leaves how reporting is done and what reporting contains, up to national interest.<sup>2</sup> An analysis

---

<sup>2</sup> Article 7 of the Paris Agreement references several vehicles that Parties may utilize to report their adaptation actions. These include: adaptation communications, NDCs, national communications and national adaptation plans. Adaptation communications are documents that may contain national priorities, implementation and support needs, plans and actions (Article 7.10). NDCs are climate actions plans that outline countries' contributions towards achieving the purposes of the Paris Agreement, while national communications report on actions toward achieving the objectives of the Convention. National adaptation plans were established under the Cancun Adaptation Framework. They offer a means of identifying medium- and long-term adaptation needs and developing and implementing strategies and programmes to address those needs.

of intended NDCs shows that adaptation components are diverse. Some highlight quantitative indicators for adaptation and vulnerability, while others provide quantified projections for costs associated with projected impacts of climate variability (UNFCCC 2016, Möhner 2018). This wide variety of reporting channels and political commitment to the sovereign right to choose how and what to report presents a challenge to assessing collective progress.

Parties have divergent views about what information is relevant to review the global goal on adaptation. For example, in the view of the Like-Minded Developing Countries<sup>3</sup>, the global stocktake's review of the adaptation goal should include the extent to which developed countries, in accordance with their historical responsibilities, have provided sustained financing to developing countries (LMDCs 2017). The European Union, however, has stated that the global stocktake's review of adaptation efforts should recognize qualitative rather than quantitative information (2017). Given that Parties have the sovereign right to choose how to report, Parties also diverge on whether inputs from expert groups should be accepted into the global stocktake. Many nations have voiced support for the latest reports of the IPCC and other relevant bodies to shape the review of the global adaptation goal (EU 2017, LDCs 2017). However, the Like-Minded Developing Countries have stated that such sources should first have consensus from all Parties (LMDCs 2017). The Paris Agreement does give precedent for this consensus. For example, Parties set the aim of pursuing efforts to limit temperature increase to 1.5 degrees (Article 2.1(a)), and invited the IPCC to provide a special report setting out pathways to achieve this (Decision 1/CP.21, II.21).

### **Potential ways ahead**

The next section highlights four approaches that the global stocktake could use in combination to review progress toward the adaptation goal.

#### ***Using a set of common domains with some core and context-specific metrics***

Defining common domains of activity - identified as contributing to one or multiple objectives of the goal - would offer a clear way to aggregate collective results whether through qualitative assessment or some quantitative indicators. Whilst there are no universal metrics for adaptation (Kato and Ellis, 2016), there are some shared activities undertaken to address adaptation – each relevant to a sub-set of Parties - which have been operationalised in international and national

---

<sup>3</sup> The Like-Minded Developing Countries (LMDCs) is a negotiating bloc which consists of approximately twenty developing countries including China, India and Saudi Arabia. The group emerged within the UNFCCC negotiations in 2012. The LMDCs stress the continued relevance of the Convention's principles, such as common but differentiated responsibilities and equity, in the modalities of the Paris Agreement.

programmes (Pringle, 2011; OECD 2015). Indicators within these programmes have been developed to aggregate results to demonstrate the impact of international funds used for adaptation and to allow national governments to build results management into their national strategies, based on data drawn from different scales (Mohner 2018). Common domains of activities within the goal could be those contributing to: institutional mainstreaming into government institutions; adapting to slow onset changes within the agricultural sector; climate-resilient infrastructure and transport; disaster preparedness and early warning systems; and climate-resilient ecosystems and ecosystem management. The Climate Investment Fund's Pilot Program for Climate Resilience (PPCR)<sup>4</sup> monitoring and reporting system, for example, has been used in various forms in nine pilot countries and two regional programmes. The system uses five core indicators, and six optional indicators (although some are made up of sub-indicators). The core indicators include processes and the enabling environment such as the degree of integration of climate change into national and strengthened government capacity, as well as some intermediary outcomes such as use of improved tools and the number of people supported by the programme. Based on the PPCR experience, Roehrer and Koudio (2015) advocate for a combination of core indicators for aggregation and national-level metrics that are context-specific. An approach like this for reviewing the adaptation goal would support the dual objectives of accountability and enhancing national action as well as being broad enough to bring in national data from other sectors that would be relevant to adaptive capacity, increasing resilience and reducing vulnerability. Using broader domains that Parties select as relevant to their particular adaptation efforts rather than prescriptive standard metrics may also help address some of the political challenges. The selection of core indicators could be contested as against the principle of sovereign reporting, and care would need to be taken to avoid the imposition of indicators by countries contributing to climate finance onto those receiving it. However, the ability to choose domains of activity could mitigate the risk of imposition to some extent, as would processes to develop consensus on core indicators amongst those for whom the domain was relevant.

### ***Covering process and outcomes***

To assess both the enabling environment for the goal and actual progress towards achieving it, both process/institutional and outcome-based indicators are needed. Many national and

---

<sup>4</sup> The Pilot Program for Climate Resilience is part of the Climate Investment Funds – a portfolio of funds managed by multilateral banks to speed up learning and implementation on climate action. Since 2008 \$1.2 billion has been invested through the PPCR supporting developing countries and regions in building resilience and adaptation to climate change (<https://www.climateinvestmentfunds.org/topics/climate-resilience>).

international climate results frameworks use a combination of these types of indicators, and piloted assessment frameworks such as the International Institute for Environment and Development's Tracking Adaptation Measuring Development (TAMD)<sup>5</sup> advocate using indicators on institutional capacities and resilience and wellbeing, as well as including narratives to link activities with intermediary outcomes and the climate challenge in question (Leiter 2015; GIZ 2014; Brooks et al. 2013). Process indicators are often captured using scorecards through participatory methods, stakeholder workshops or expert assessment and in some ways are simpler to measure and aggregate for accountability. However, they only monitor institutional change with no assessment of implementation, and the data needs to be triangulated as results for the same country can vary between frameworks (Lesnikowski and Ford, 2017). The three objectives of the goal could be overarching outcome areas. Intermediary outcomes leading to these objectives would need to be more context-specific and could link to the common domains identified, cutting across Parties with comparable adaptation challenges. Using some outcome-based indicators would bring a long-term perspective, but would require Parties to outline their national pathways to each outcome. This could support learning and the enhancement of national activities.

#### ***Leveraging existing national systems and data***

Leveraging national data to assess progress toward the adaptation goal aligns with the Paris Agreement's principle that adaptation reporting processes should not create additional burden for developing countries (Article 7.10), and supports the aim of enhancing adaptation actions. There is considerable national data on adaptation, not only within results systems for national climate change plans and UNFCCC reporting, but also in indicators within development plans, national statistical surveys, and reporting on other relevant international frameworks and datasets (OECD 2015; GIZ, 2014; Brooks et al. 2013). Whilst data quality and availability are issues in some countries (Vallejo, 2017), the framework provided by the objectives of the global adaptation goal could support countries to embed evaluation in their national climate or development plans and strengthen these systems in the longer term, an important dimension of adaptation (Craft and Fisher, 2015). In the short-term, the variability of national datasets will make it difficult to aggregate results between all Parties. It is likely therefore that complementary input from some external sources would be needed to meet aims of

---

<sup>5</sup> The TAMD framework uses a broad conceptual approach to assess adaptation at different scales. It has been piloted in eight countries and includes a set of nine institutional indicators and guidance on defining resilience and wellbeing measures appropriate for different contexts (Brooks et al, 2013).

accountability and learning. Some of this could be compiled from existing international datasets if Parties chose to incorporate these inputs as part of their reporting, whereas some questions would need new data or analysis.

#### *Using additional expert assessment and/or composite indices*

Expert assessments could meet the objective of assessing collective progress where national compilation would be insufficient, and could also address some of the methodological challenges around evaluating effective adaptation outcomes.

The IPCC and other international agencies, such as UNEP, already assess some progress towards adaptation and changing vulnerability (Vallejo 2017). There are also international frameworks in development around the UN Sustainable Development Goals (SDGs) and the Sendai Framework on Disaster Risk Reduction that might be useful (Kato and Ellis, 2016). Some multi-composite indices have been developed such as the ND-GAIN Index<sup>6</sup>, although using these would require political agreement on the metrics that make up a composite indicator and the relative weighting of the inputs (Vallejo 2017). This could be a resource-heavy and politically contentious exercise, and could be vulnerable to the imposition of certain perspectives of adaptation by powerful Parties. Rather than developing an index, broader third-party expert assessments by accepted international scientific bodies could address elements of collective progress as well as highlighting trends or gaps towards meeting the goal. Expert bodies could also propose core indicators for specific domains for consideration by Parties. The precedent for this has already been established with the request to the IPCC around pathways to 1.5 degrees. Expert input could be more politically palatable if the objectives were specifically around learning on cross-cutting themes and assessing pathways to longer-term outcomes for specific regions or ecosystems, rather than assessing a particular Party's progress and therefore contradicting the principle of sovereign reporting.

#### **Conclusions**

Assessing progress towards the adaptation goal as part of the global stocktake is a challenging but ultimately important task to ensure that finance and energies invested in adapting to the changing climate are being well utilised and the resulting adaptation is effective. There are four main challenges to assessing the goal and any reporting framework needs to work to address

---

<sup>6</sup> The ND-GAIN Country Index developed by the Notre Dame Global Adaptation Initiative summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience (<https://gain.nd.edu/our-work/country-index/>).



these. These are the need to: aggregate results; manage the mandate to review collective progress and enhance national action; address the methodological challenges to evaluating adaptation; and consider the political and feasibility constraints of the climate regime. Given these challenges, a multi-pronged approach will be needed. The use of mixed methods and approaches outlined here would allow a triangulation of data to understand collective progress towards different areas of the goal over time, combining the short-term needs for reporting with longer-term goals of supporting and developing adaptation evaluation at national level and an in-depth technical understanding of priority areas.

## References

Anderson, S., Khan, F., Fikreyesus, D., and Gomes, M., (2014) Forwards and backwards evidence-based learning on climate adaptation, IIED policy briefing, London, UK.

Arnott, Moser, S., Goodrich, K., (2016), Evaluation that counts: A review of climate change adaptation indicators & metrics using lessons from effective evaluation and science-practice interaction, *Environmental Science and Policy*, 66. Pp 383-392.

Berrang-Ford, L, Wang, Lesnikowski, A, Ford, J Boesbroek, R., (2017). Towards the assessment of adaptation at the global level p35-47 in UNEP, *The Adaptation Gap Report 2017*. United Nations Environment Programme (UNEP), Nairobi, Kenya.

Bours, D., McGinn, C., & Pringle, P. (2014). *Monitoring and evaluation for climate change adaptation and resilience: A synthesis of tools, frameworks and approaches*, 2nd edition. Oxford, UK: UKCIP.

Bours, D., McGinn, C., & Pringle, P. (2015), Editor's notes: Monitoring and evaluation of climate change adaptation: a review of the landscape, 147, pp 1 – 11.

Brooks, N., Anderson, S., Burton, I., Fisher, S., Tellam, I., and Rai N., (2013), *Tracking Adaptation Measuring Development: an operational framework*, Climate Change Working Paper, IIED

Christiansen, L., Martinez, G., and Naswa, P., (eds) 2018, *Adaptation Metrics: perspectives on measuring, aggregating and comparing adaptation results*. UNEP DTU Partnership. Copenhagen.

Craft, B., and Fisher, S., (2015), National experiences can inform global goal for adaptation, IIED policy briefing, IIED, UK.

European Union (2017) Submission by the Republic of Malta and the European Commission on behalf of the European Union and its Member States, Submission on the Global Stocktake. Retrieved from the UNFCCC website:

[http://www4.unfccc.int/sites/SubmissionPortal/Documents/39\\_324\\_131382831754106471-MT-03-05%20-%20GST\\_EU%20Submission.pdf](http://www4.unfccc.int/sites/SubmissionPortal/Documents/39_324_131382831754106471-MT-03-05%20-%20GST_EU%20Submission.pdf)

Fisher, S., Dinshaw, A., McGray, H., Schaar, J., and Rai, N., (2015), Using methodologies from international development to address the challenges of monitoring and evaluating climate change adaptation, *New Directions For Evaluation*, Issue 147, p13 – 35.

GIZ (2014), *Monitoring and Evaluating Adaptation at Aggregated Levels: A Comparative Analysis of Ten Systems*, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Bonn, Germany.

Kato, T. and Ellis, J., (2016), Communicating progress in national and global adaptation to climate change. *OECD/IEA Climate Change Expert Group Papers*, No. 2016/01, OECD Publishing, Paris.

Khan, M., and Roberts, J. T., (2013) Adaptation and international climate policy, *WIREs Climate Change* 4(3): 171 – 189.

Kinley, R., (2016) Climate change after Paris: from turning point to transformation, *Climate Policy* 17(1): 9-15.

Leiter, T., (2015) Linking monitoring and evaluation of adaptation across scales: avenues and practical approaches, *New Directions for Evaluation* 147 pp 37-48.

Leiter, T and Pringle, P, (2018) Pitfalls and potential of measuring adaptation through adaptation metrics, pp29-48 in Christiansen, L., Martinez, G., and Naswa, P., 2018, *Adaptation Metrics: perspectives on measuring, aggregating and comparing adaptation results*. UNEP DTU Partnership.

Lesnikowski, A., Ford, J., Biesbroek, R., and Austin, S., (2016) What does the Paris Agreement mean for adaptation? *Climate Policy* 17(7): 825-831.

Lesnikowski, A., and Ford, J., (2017) Assessing adaptation progress at the global level: conceptual and methodological issues in UNEP (2017) *The Adaptation Gap Report 2017*, Nairobi, Kenya.

Least Developed Countries (2017) Submission by the Federal Democratic Republic of Ethiopia on behalf of the Least Developed Countries Group on Agenda item 6, Global Stocktake. Retrieved from the UNFCCC website:

<http://www4.unfccc.int/sites/SubmissionPortal/Pages/Home.aspx>

Like-Minded Developing Countries (2017) LMDC Submission on Matters Relating to the Global Stocktake Referred to in Article 14 of the Paris Agreement. Retrieved from the UNFCCC website: <http://www4.unfccc.int/sites/SubmissionPortal/Pages/Home.aspx>

Möhner, A., (2018) The evolution of adaptation metrics under the UNFCCC and its Paris Agreement, pp14-27 in Christiansen, L., Martinez, G., and Naswa, P., 2018, Adaptation Metrics: perspectives on measuring, aggregating and comparing adaptation results. UNEP DTU Partnership.

OECD (2015), National Climate Change Adaptation: Emerging Practices in Monitoring and Evaluation, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264229679-en>

Pringle, P. (2011). AdaptME toolkit: Adaptation monitoring and evaluation. Oxford, UK: UK Climate Impacts Programme (UKCIP).

Roehrer, C., and Koudio, K., (2015). Monitoring, reporting and evidence-based learning in the Climate Investment Funds Pilot Program for Climate Resilience. *New Directions for Evaluation*, 147, pp129-145

UNEP 2017. The Adaptation Gap Report 2017. United Nations Environment Programme (UNEP), Nairobi, Kenya.

United Nations (1992) United Nations Framework Convention on Climate Change. UNFCCC document FCCC/INFORMAL/84. See <http://unfccc.int/resource/docs/convkp/conveng.pdf>

United Nations (2015) United Nations Framework Convention on Climate Change (2015) Adoption of the Paris Agreement, 21st Conference of the Parties, Paris: United Nations.

UNFCCC (2016) Aggregate effect of the intended nationally determined contributions: an update. Synthesis report by the secretariat. See <https://unfccc.int/process/the-paris-agreement/nationally-determined-contributions/synthesis-report-on-the-aggregate-effect-of-intended-nationally-determined-contributions>

Vallejo, L., (2017) Insights from national adaptation monitoring and evaluation systems, OECD/IEA Climate Change Expert Group Paper 2017(3). OECD, Paris.

