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REVIEW ARTICLE

The international climate finance accounting muddle: is there hope on the horizon?

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The sources and governance of climate finance have been widely debated since the 2009 climate change summit in Copenhagen, when rich countries promised to provide US$ 30 billion in additional climate finance by 2012 and to mobilize US$ 100 billion a year by 2020 to address the mitigation and adaptation needs of developing countries. Have developed countries respected their financial commitments? Which countries have been the main beneficiaries of international climate money? As simple as these questions may seem, answers to them have proved to be highly controversial and have contributed to a continuous erosion of trust between Parties in international climate negotiations. This article explores the controversies around international climate finance figures. It examines how the lack of internationally agreed modalities to account for climate finance has given rise to a plethora of accounting and reporting practices that leads to widely contrasting statements on climate finance. We show that, despite some gaps, the Paris Agreement's "enhanced transparency framework" could lead to marked improvements in the way climate finance is accounted and reported.

Keywords: international climate finance; climate negotiations; climate policy; foreign aid; transparency of support; UNFCCC

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1. Introduction

Copenhagen, December 2009. The contentious 15th Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) eventually led to an unprecedented commitment by developed countries[1] to provide funds to help developing countries mitigate their greenhouse gas emissions and adapt to the adverse effects of climate change. After difficult and prolonged negotiations, developed countries collectively promised to provide "new and additional" financial resources approaching US$ 30 billion during 2010–2012 with balanced allocation between mitigation and adaptation (a short-term commitment known as "Fast-Start Finance") and to jointly "mobilize" US$ 100 billion per year by 2020 to address the needs of developing countries (UNFCCC, 2009, para. 8). Those financial commitments were reiterated in various COP Decisions including in the Cancun Agreements (UNFCCC, 2010, para. 95–99) and during the Paris Climate Conference in December 2015 when the US$ 100 billion mobilization goal was extended to 2025 (UNFCCC, 2015, para. 53).

Have developed countries respected their financial commitments? Which countries have been the highest contributors of international climate finance[2] so far? Which ones have been the main beneficiaries of international climate money? As simple as these questions may seem, answers to them have proved to be highly controversial in the debates around climate finance and have contributed to a continuous erosion of trust between Parties in international climate negotiations. While wealthy nations claim they have delivered on promises of Fast-Start Finance (see UNFCCC, 2011a, 2012a, 2013) and that they are "confident they will meet the US$100 billion goal" (see Roadmap to US$ 100 billion, 2016, p. 4), activists (e.g. Oxfam, 2012, 2016), researchers (e.g. Ciplet, Fields, Madden, Khan, & Roberts, 2012; Nakhooda et al., 2013; WRI, 2013, 2015), other observers (e.g. European Court of Auditors, 2014) and developing countries' negotiators (e.g. Indian Ministry of Finance, 2015) all dispute the amounts developed countries say they have given in climate finance.

This article examines how the lack of internationally agreed modalities to account for climate finance has given rise to a plethora of accounting and reporting practices that leads to widely contrasting statements on climate finance. As this article argues, the absence of

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accounting rules hampers any meaningful comparisons between developed countries' financial effort towards climate action in developing countries. It also profoundly complicates the tracking of any potential sectorial or geographical gaps in the allocation of international climate finance.

Based on our observation of multiple UNFCCC negotiating sessions and on interviews with negotiators and observers, the first part of this article (Section 2) examines the most recent contestations between – and within – developed and developing countries around international climate finance figures. As these controversies partly illustrate, developed countries' governments are judged both internally and externally on the basis of the climate finance figures that they report to the UNFCCC Secretariat. Individual efforts are discussed between developed countries; they are contrasted with each other and measured against parameters such as population, gross domestic product or greenhouse gas emissions (see e.g. Nakhooda et al., 2013; Nakhooda & Fransen, 2013; Green Climate Fund, 2017).

Climate finance figures are also frequently presented as "make-or-break" issues within international climate change negotiations. The publication of climate finance statistics has become an occasion for discussing national aid and climate policies in many developed countries. Non-governmental organizations (NGOs) and the media comment on the performance of governments; members of developed countries' Parliaments may question the Ministers in charge of development co-operation, finance or the environment if the result is deemed to fall short of promises or expectations.

Given the prominence accorded to climate finance statistics, the definitions and methodologies underlying them are of more than academic interest and deserve careful scrutiny. The second part of this article (Section 3) therefore explores the variety of accounting methodologies and reporting practices of developed and developing countries. This article concludes by assessing the opportunities brought by the Paris Agreement regarding the creation of a robust accounting and reporting framework for climate finance (Section 4).

2. Contestations around climate finance figures

Tensions on climate finance figures have been going on since the signature of the UNFCCC in 1992 (see e.g. Hicks, Parks, Roberts, & Tierney, 2008; Keohane & Levy, 1996; Pallemaerts & Armstrong, 2009) but they reached a peak shortly before the 2015 United Nations climate negotiations in Paris when the Organisation for Economic Co-operation and Development (OECD) and the research and policy organization Climate Policy Initiative (CPI) released a major report on how much funding developed countries were delivering to the developing world as part of their US$ 100 billion goal formulated under the UNFCCC.

The report (OECD-CPI, 2015) was requested – in urgency, only five months before the COP 21 – by the Peruvian and French presidencies of the COP (Peru hosted the COP 20 in Lima in December 2014) in order to provide "clear and reassuring information" regarding the respect of this commitment and "to improve trust" between developed and developing countries (OECD-CPI, 2015, p. 9). Building on a "common understanding of mobilized climate finance",[3] the OECD-CPI report put forward figures (respectively US$ 52 and 62 billion in 2013 and 2014) claimed as relevant for the US$ 100 billion goal. While acknowledging and documenting many problems with the available data sources, the report was timed to provide a credible resource for negotiators ahead of the December 2015 Conference in Paris.

But it did not have the desired effect. Instead, representatives from developing nations bristled at both the report's conclusions and the methods by which it was commissioned and prepared. A report by the Indian Ministry of Finance noted that the only credible number is "(…) US$ 2.2 billion in gross climate fund disbursements from 17 special climate change (…) funds created for the specific purpose – and not US$ 57 billion average for 2013–14 as exaggeratedly reported by the OECD" (Indian Ministry of Finance, 2015, p. 11).

Speaking on behalf of the G77 + China, South Africa's chief negotiator at the United Nations climate talks in Bonn, Nozipho Joyce Mxakato-Diseko said:

> I am not able to comment on or judge the report because we don't know the veracity, credibility and the methodology of the report or who was consulted. Developing countries were not. It has no status in the UN negotiations. It was not commissioned under the mandate of the UNFCCC. (Quoted in Sethi, 2015)

The legitimacy of the OECD – a club of rich countries – in defining for the world what should count as "climate finance" has been widely questioned by observers (see e.g. ActionAid, 2015; Boreinstein & Ritter, 2015; 100 billion promise? Berlin: German Climate Finance, by Oxfam Deutschland, Brot für die Welt, Germanwatch, Heinrich Böll Stiftung. Retrieved fro Kowalzig, 2015; Roberts & Weikmans, 2015). For them, it seems unacceptable that more than 150 Parties to the UNFCCC were excluded from these definitional discussions. In addition, efforts of this kind by the OECD risk competing with similar efforts currently carried out under the UNFCCC. In this context, who could expect the OECD-CPI report to reinforce trust between developed and developing countries?

After the release of the report, senior advisor to the Indian Ministry of Finance and climate finance negotiator Rajasree Ray said:

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> The most fundamental assessment should have been that the total flows (of climate finance) provided by the developed countries should be matched to the total flows received by the developing countries. The report is silent on this. (Quoted in Sethi, 2015)

It is not the only element the report was silent on. The OECD-CPI (2015) report eluded key elements in international climate finance discussions. For example, the issue of "additionality" (whether funds are "new and additional") is not even mentioned in the OECD-CPI report. Yet, many commentators (e.g. Nakhooda et al., 2013; Stadelmann, Roberts, & Michaelowa, 2011) have highlighted the fact that a significant part of climate finance reported by developed countries cannot be considered as "new and additional", raising concerns that financial means devoted to the fight against climate change are simply diverted from other development objectives, precisely as feared by developing nations when the UNFCCC was signed 25 years ago (see Hicks et al., 2008).

While putting forward aggregate figures for climate finance in 2013–2014, the OECD-CPI report also provided figures for the split between adaptation and mitigation, as well as for the funding sources that were used (bilateral public finance, multilateral public finance, export credits and mobilized private finance). However, it did not provide any figures on individual developed countries' contributions to international climate finance efforts or on the allocation of climate finance to individual recipient countries. In addition, all financial instruments are accounted for at cash face value in the figures of the report and the OECD-CPI did not provide any details on the split between grants, concessional loans and non-concessional loans in its estimates.

Importantly, the tensions revolving around climate finance accounting go beyond the North–South divide. For example, Artur Runge-Metzger, lead climate negotiator for the European Commission, declared in 2012: "We certainly have fully delivered on Fast-Start Finance and honoured our commitments" (Quoted in Morales, 2012). His claim was however disowned a few months later by the European Court of Auditors when it wrote that "The extent to which the Fast-Start Finance commitment was fulfilled by the European Union and its member states is unclear" (European Court of Auditors, 2014, p. 26). The official reply of the European Commission added to the confusion: "The Fast-Start Finance commitment was met within the parameters given in the relevant UNFCCC documents" (European Court of Auditors, 2014, p. 47). There were also tensions between and within the European Commission and some member states on the figures of climate finance provided during the Fast-Start Finance period. Some countries were pointed as laggards in the provision of climate finance but defended themselves by stating that their accounting methodologies were far more conservative than the ones used by the European Commission and by other member states (Confidential interviews, 2014).

The preparation of the OECD-CPI report also gave rise to strong tensions between developed countries. In particular, strong disagreements appeared when Japan and Australia wanted to include the financial support they provide for so-called high-efficiency coal plants in developing countries towards the aggregate climate finance figures put forward in the report (Confidential interviews, 2015). While the total climate finance figures that appears in the OECD-CPI report do not include finance related to coal projects (except if related to carbon capture and storage), Japan reported as climate finance US$ 3.2 billion for such projects in 2013–2014 in its Second Biennial Report submitted to the UNFCCC Secretariat (Japan, 2015; OECD-CPI, 2015, p. 10).

In addition, Germany made the case for providing information on public budgetary sources and/or grant equivalent in addition to figures of public climate finance provided at cash face value. The OECD-CPI (2015, p. 51) report noted that "(…) the group intends to provide information on public budgetary sources and/or grant equivalent in future reporting" but did not provide any information in this regard. Germany was the only Annex II countries that reported its climate finance to the UNFCCC in terms of public budgetary finance in its Second Biennial Report published in December 2015 (Germany, 2015). In confidential interviews, staff in other foreign ministries of nations who took more conservative approaches to claiming what counts as climate finance expressed frustration at what was being counted in the looser nations.

The next section explores how these contestations around climate finance figures can be linked to the absence of robust accounting framework under the UNFCCC.

3. Review of current accounting and reporting practices

3.1. *Climate finance provided and mobilized*

Current guidelines agreed under the UNFCCC (2011b, Decision 2/CP.17) require Annex II Parties to report on climate finance both in their National Communications and in their Biennial Reports, to be respectively submitted every four and every two years to the Convention Secretariat.[4] Since 2012 Annex II Parties are required to report to the UNFCCC using a standard format known as the "common tabular format" (CTF) (UNFCCC, 2012b, Decision 19/CP.18).[5] However, there is no required project-level reporting, so users of this information are largely unable to understand what is included in the

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summary information reported in the CTF tables (van Asselt, Weikmans, & Roberts, 2017).

UNFCCC guidelines still fall far short of what would constitute a robust accounting framework for climate finance. Eight years after Copenhagen, the question of "what counts" as climate finance is still not internationally agreed, even between OECD Development Assistance Committee (DAC) countries or European Union (EU) member states. At an even more fundamental level, to assess the "newness and additionality" of financial contributions, negotiators should have determined a baseline against which any claim of additionality could be stated (Stadelmann et al., 2011). Such a baseline still does not exist. This is particularly problematic: If we compare this with mitigation policy, for example, this would be like the European Union or the United States committing to reduce its emissions by 30% by 2020, without indicating if this percentage was below 1990 or 2005 levels. A climate finance pledge is almost meaningless without such clarifications.

Overall then, the UNFCCC guidelines leave extreme discretion to developed countries regarding climate finance accounting. Each developed country can decide what it counts as climate finance and why its climate finance can be considered as "new and additional". As the next section will explore in more detail, contributing countries have consequently adopted a large variety of accounting practices on climate finance. Such a variety of accounting practices is not a problem *per se* – though it makes both the comparison of developed country's performance in the provision of climate finance and the assessment of the fulfilment of climate finance promises more complex. The most severe problem rather lies in the fact that many developed countries have so far failed to be transparent and complete in their reporting to the UNFCCC on the methodologies that they used to account for climate finance (UNFCCC, 2017a; Weikmans et al., 2016).

Indeed, while developed countries are required to submit documentation that describes in a "rigorous, robust and transparent manner, the underlying assumptions and methodologies used to produce information on finance" – including on how this finance can be considered "new and additional" (UNFCCC, 2011b, annex I, para. 13–15), the level of compliance towards those UNFCCC climate finance transparency provisions greatly varies from one contributing country to another (UNFCCC, 2017a; Weikmans et al., 2016). In addition, accounting methodologies used by some countries have changed over time, rendering very difficult any assessment of trends in the provision of climate finance. Similarly, climate finance figures contained in a given developed country's National Communications are sometimes inconsistent with the figures provided in its Biennial Reports (UNFCCC, 2017a; Weikmans et al., 2016). Non-transparent and/or incomplete reporting to the UNFCCC means that it is impossible to accurately compare developed countries' financial effort towards adaptation and mitigation in developing countries. It leads to contrasting statements on the fulfilment of developed countries' financial promises and to the erosion of trust between Parties in international climate negotiations. It also profoundly complicates the tracking of potential gaps in the financial means that are needed for mitigation and adaptation in developing countries.

3.1.1. *Bilateral public flows*

So far, most developed countries have relied heavily – though not exclusively – on data collected using the OECD DAC Rio marker methodology to report to the UNFCCC Secretariat on their financial commitments towards developing countries. However, as highlighted by the OECD (2012, p. 62; 2016, p. 55), this methodology was designed to produce descriptive data to track the mainstreaming of Rio Conventions considerations into development co-operation practices; it was not originally intended to monitor financial pledges. This section first explores the limits of the Rio marker methodology to accurately monitor the fulfilment of climate finance pledges. Some of these limits have been partly recognized by a number of developed countries which have consequently modified the methodology for their own financial reporting to the climate Convention. As this section then demonstrates, the result of this is a variety of poorly harmonized accounting and reporting practices of climate finance to the UNFCCC.

3.1.1.1. *The Rio marker methodology*. The Rio marker methodology is a scoring system of three values used by OECD DAC countries since 1998, in which all bilateral official development assistance (ODA) projects[6] are "marked" as targeting climate change mitigation as its "principal" objective, as a "significant" objective, or as not targeting the objective. Each aid project is also screened against the Rio markers "biological diversity" and "desertification". The climate change adaptation marker – which uses the same three-value system – was only introduced in 2009 and the first data on this marker became available in March 2012 for 2010 ODA flows. Projects marked as having a "principal" mitigation, adaptation, biodiversity or desertification objective would theoretically not have been funded but for that objective; projects marked "significant" have other primary objectives but have been formulated or adjusted to help meet mitigation, adaptation, biodiversity or/and desertification concerns. The Rio marker system exclusively relies on developed countries' self-reporting; The data are then collected and made available online by the DAC Secretariat.[7]

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Several studies (e.g. Junghans & Harmeling, 2012; Michaelowa & Michaelowa, 2011; Oxfam, 2012; Weikmans, Roberts, Baum, Bustos, & Durand, 2017) have called into question the quality of the "mitigation" and "adaptation" Rio markers data. All of them highlight the fact that the current reporting system – which exclusively depends on developed countries' self-reporting – is prone to huge overestimations. Far fewer projects than the developed countries reported were found to be relevant to what can be considered climate change mitigation and adaptation. For example, Weikmans et al. (2017) re-evaluated 5200 projects that countries reported as "adaptation related" to the OECD for 2012. Developed countries claimed that US$ 10.1 billion of bilateral development aid that year was "adaptation related", with US$ 2.7 billion "explicitly targeting adaptation as a principal objective". However, Weikmans et al. (2017) found that only US$ 2.4 billion appeared to be genuinely adaptation related, and only US$ 1.2 billion targeted adaptation as a "principal objective". Human errors, the OECD DAC's broad definitions of adaptation, political incentives to miscategorize, and lack of clarity about what activities constitute "adaptation" are probably all to blame (Junghans & Harmeling, 2012).

Many critiques levelled by those studies against the quality of the Rio marker data have also been acknowledged by the DAC Secretariat (e.g. OECD, 2013a for the "adaptation marker") and by several DAC members (e.g. for Sweden, see Wingqvist et al., 2011; for Finland and Switzerland, see OECD, 2012, p. 66; for Belgium, see ADE, 2013, pp. 23–24; for Austria, see Ledant, Schuh, Tordy, Gruev, & Beck, 2016, pp. 66–69). The Rio marker system has always had problems with different DAC member countries using different staff, in different positions and disparate methods to categorize projects (Confidential interviews, 2015). For its part, the UNFCCC Standing Committee on Finance recently observed that, "There is scope for interpretation in how the markers are applied. This provides flexibility, but can lead to non-comparable data submissions from donors" (UNFCCC SCF, 2014, p. 82).

Importantly, governments are under pressure to show they are taking action on climate change, and the Rio marker self-reporting system allowed pressures to result in "over-reporting" of projects. Some researchers (e.g. Michaelowa & Michaelowa, 2011) found a relationship between levels of over-coding and the political pressure on governments to show they were doing something about climate change (varying, for example, by the level of environmental or Left party representation in parliament).

The Rio marker methodology lacks several features that would make it a relevant indicator for climate finance pledges-monitoring uses (see Weikmans & Roberts, 2016). Most importantly, the Rio marker system lacks granularity: when an aid project is marked as "principally" or "significantly" targeting mitigation or adaptation, the whole cost of the project is considered to be mitigation or adaptation related in the Rio marker statistics – though only a component of the project may target a mitigation or adaptation objective. In addition, the Rio marker methodology allows for an aid project to be marked as targeting several Rio markers. While it is useful to recognize potential overlaps between the objectives of different Rio Conventions, the situation is more problematic when the same aid project is marked as "principally" targeting more than one of the four Rio markers. In those cases – which are common for many DAC countries –, the use of the Rio marker methodology for financial accounting may result in double-, triple- or even quadruple-counting towards different financial pledges made under the three Rio Conventions, which "seems inappropriate", even according to the OECD DAC Secretariat (OECD, 2012, p. 62).

In addition, the Rio markers are applicable to bilateral ODA commitments; data on climate-related disbursements are currently not available in DAC statistics. Consequently, there is no way to know whether or not an intended aid project has been carried out: It could have been modified or even cancelled but would still appears unchanged in DAC commitments statistics. Finally, the Rio marker methodology does not allow the identification of "new and additional" climate finance. What is more, a change in the Rio marker methodology to take into account the "newness and additionality" of financial contributions seems to be explicitly rejected by the DAC (see OECD, 2013b, p. 10).

Efforts to modify the Rio marker methodology towards a quantitative rather than a descriptive approach have been underway for several years (for a synthesis, see OECD, 2015), but with limited tangible results to date. These efforts are, among others, informed by those of several multilateral development banks, which have elaborated their own methodology to track climate finance. In particular, the DAC has recently (14 April 2016) updated its guidance for applying the Rio marker "adaptation" by recommending as a "best practice" that DAC members use the so-called "three-step approach" elaborated and used by a group of multilateral development banks (see section 3.1.2. below) to justify for a "principal score" (OECD, 2016, p. 58). Notably, however, the DAC members left out an important part of this "three-step approach", which was the part that indicates: "when applying the methodology, the reporting of adaptation finance is limited solely to those project activities (i.e. projects, project components or elements/proportions of projects) that are clearly linked to the climate vulnerability context" (MDB, 2016, p. 31). This means that the whole cost of a project can still be considered to be adaptation related in the Rio marker statistics under this "best practice" even if only a component of the project may target an adaptation objective.

3.1.1.2. *Reporting to the UNFCCC on bilateral flows by annex II countries*. All developed countries – with some notable exceptions, including those of the United Kingdom and of the United States, which use their own accounting approaches – base their financial reporting to the UNFCCC on the data that they collect with the Rio marker methodology (OECD-CPI, 2015, p. 49). While constituting the basis of most developed countries' reporting to the UNFCCC, Rio marker figures do not necessarily equal the climate finance figures that those countries actually report to the UNFCCC (OECD, 2016, p. 55). Most developed countries have indeed modified the Rio marker methodology in different ways in an attempt to overcome the many problems associated with the use of this methodology for their financial reporting to the UNFCCC. The result of this is a variety of poorly harmonized monitoring and reporting practices. Most notably, the volume of finance associated with the Rio markers is often scaled down by using "coefficients" to differentiate between funding marked as targeting climate change as a "significant objective" – reflecting that these projects have other "principal objectives". These coefficients differ across DAC members and range from 0 to 100% (see Table 1). As the OECD acknowledges "there has been limited transparency regarding these practices to date" (OECD-CPI, 2015, p. 32).

More broadly, current accounting practices impede meaningful comparisons to be made between the financial effort of each developed country (Roberts & Weikmans, 2017). In particular, Annex II Parties – with the exception of Germany, which provides budgetary effort figures – account for all their financial instruments at cash face value. This inflates reported climate finance figures of those contributors with a predominance of loans in their portfolio in comparison with countries that mainly provide their climate finance in grants. This situation is further exacerbated by the absence of any agreed definition of "concessionality" under the UNFCCC; developed countries can decide to count as climate finance the loans that they provide to developing countries at market rates. In addition, in the absence of any internationally agreed definition of the terms "new and additional", each country has its own definition of those terms. They range from recognizing that "climate financing should be additional to the international development aid goal of 0.7% of gross national income" (Norway, 2015, p. 59) to stating with regard to additionality that "since ratifying the UNFCCC in 1992, United States international climate finance increased from virtually zero to around $2.7 billion per year in fiscal years 2013 and 2014" (United States, 2016, p. 46). These are patently contradictory positions on this important issue. Most definitions provided by developed countries are ambiguous and impede comparisons of each developed country's performance regarding the provision of climate finance.[8]

Table 1 shows other differing practices between Annex II Parties with regard to a number of important accounting and reporting parameters. While some countries only report to the UNFCCC climate finance that meets the ODA criteria, others also account for other official flows (OOF) – i.e. non-concessional developmental flows such as non-concessional loans, equity or guarantees. Additionally, while some countries report "committed" climate finance in their Second Biennial Reports, others report figures on their climate finance disbursements.[9] For those countries with a predominance of grants in their portfolios, the difference between committed and disbursed funding is minor and would not significantly change their climate finance numbers. But for developed countries with large multi-year loans, significant differences and fluctuations could be observed between yearly commitments and disbursements (see OECD-CPI, 2015, p. 31).

Only some countries have component-level climate finance accounting (i.e. only parts of the amount of a given aid project is counted as mitigation or adaptation relevant, and not the whole amount of the project). Only 8 out of 24 Annex II Parties provide the UNFCCC Secretariat with their climate finance data at the project level; all other developed countries only report aggregates or semi-aggregates (e.g. figures for world regions or countries). This is despite the fact that international experience in tracking development aid suggests that individual project-level data are crucial for improving effectiveness and coordination among contributors, recipients, implementing agencies and civil society (Tierney et al., 2011). Robust project data also are important for allowing watchdog groups and citizens in recipient nations to hold decision-makers accountable for the climate funds they receive (Weikmans et al., 2016).

Another complication makes multi-year comparisons almost impossible: many countries have changed their climate finance accounting and reporting methodologies between their First and their Second Biennial Reports. Is the rise in public finance contributions through bilateral channels observed in the OECD-CPI report (OECD-CPI, 2015, p. 21) from 2011 to 2012 (US$ 14.5 billion per year) to 2013–2014 (US$ 22.8 billion per year) due to increases in budgets specifically allocated to climate change, or is it due to methodological changes in accounting (e.g. increased coverage of data about non-concessional flows targeting climate objectives)? The OECD-CPI report acknowledges that part of this rise is due to methodological changes but does not provide an assessment of its extent (OECD-CPI, 2015, p. 21). Details obtained from some developed countries make it however clear that such methodological changes can play an important role in the observed rise in bilateral climate finance (Confidential interviews, 2015).

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Table 1. Diversity of approaches in accounting and reporting to the UNFCCC for bilateral public climate finance (2013–2014).

	Coverage			Point of measurement		Quantification			Format of data	
	ODA	OOF	Inclusion of "coal finance"	Commitments	Disbursements	Component approach	Coefficient on Rio marker "Principal"	Coefficient on Rio marker "Significant"	Project level	Aggregates or semi-aggregates
Australia	✓	✓	✓		✓	✓	100%	30%[a]		✓
Austria	✓	✓		✓			100%	50%		✓
Belgium	✓	✓			✓		Range of coefficients		✓	
Canada	✓				✓		100%	–[b]		✓
Denmark	✓			✓	✓		100%	100%	✓	
EU Institutions	✓	✓		✓			100%	50%		✓
Finland	✓				✓		Range of coefficients			✓
France	✓	✓		✓		✓	100%	40%	✓	
Germany	✓	✓		✓	✓		100%	50%	✓	✓
Greece	✓				✓		100%	100%	✓	
Iceland	✓			✓			100%	100%		✓
Ireland	✓				✓		100%	50%		✓
Italy	✓	✓		✓	✓		100%	40%		✓
Japan	✓	✓	✓	✓[c]	✓[d]		100%	100%		✓
Luxembourg	✓	✓			✓		100%	100%		✓
Netherlands	✓				✓		100%	40%		✓
New Zealand	✓				✓		100%	30%[e]		✓
Norway	✓				✓		100%	100%		✓
Portugal	✓	✓		✓			100%	0%		✓
Spain	✓	✓			✓		100%	20–40%[f]	✓	✓
Sweden	✓			✓	✓		100%	40%	✓	
Switzerland	✓				✓		51–100%	1–50%		✓
United Kingdom	✓				✓	✓	Uses another methodology for its reporting to the UNFCCC		✓	✓
United States	✓	✓		✓			Use another methodology for its reporting to the UNFCCC			✓

Source: Modified from OECD-CPI (2015, p. 43; pp. 45–46) (based on responses to OECD survey on expected reporting by Annex II Parties in their Second Biennial Reports), with additions from our screening of Annex II Parties' Second Biennial Reports that were to be submitted to the UNFCCC Secretariat by 1 January 2016.

[a]Where climate change is a significant objective, project-by-project assessment is undertaken to determine the climate change component, and that component is counted as climate support. Where it is not possible to disaggregate the climate change component, Australia uses a 30% coefficient of the "significant" portfolio.

[b]"Significant" activities are screened and the most climate-relevant are counted.

[c]For loans and grants.

[d]For technical assistance.

[e]Default, unless an activity-specific coefficient is available.

[f]Activities targeting climate mitigation or adaptation as a significant objective (only) are accounted as 20% and operations targeting both mitigation and adaptation as a significant objective are accounted as 40%.

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3.1.2. *Multilateral public flows*

For Annex II Parties, obtaining data on climate-related contributions flowing through multilateral agencies is crucial because without this information they cannot report their multilateral climate-specific funding in their national reports to the UNFCCC Secretariat. Reporting on contributions made to multilateral climate change funds (such as the Least Developed Countries Fund or the Adaptation Fund of the Kyoto Protocol) is relatively straightforward. However, estimating the climate-specific share of core contributions made to multilateral institutions is much more complex. So far, developed countries have adopted a variety of approaches in this regard, which considerably impede meaningful comparisons between developed countries' performances (OECD-CPI, 2015; UNFCCC SCF, 2014).

In the future, many developed countries plan to draw on OECD DAC imputed multilateral contributions data for the reporting of multilateral finance following recent improvements in data under the DAC (OECD-CPI, 2015). To calculate these imputed multilateral contributions, the climate-related share within each international organization's portfolio is first estimated and then attributed to developed countries based on their share of core contributions to that organization. For some multilateral agencies, this climate-related share is currently estimated by using the Rio marker methodology – the total cost of projects categorized as having climate as its "primary" or just a "significant" objective – is counted.

In addition, since 2012, the 7 biggest multilateral development banks, joined in 2015 by the 20 members of the International Development Finance Club, have been using another methodology for their climate finance tracking (see MDB, 2016, pp. 31–38). The multilateral development banks' tracking methodology is interesting to look at as it is arguably more rigorous and granular compared to the Rio marker approach – and therefore more suited for pledge-monitoring purposes. The two methodologies have similarities (e.g. comparable definitions of mitigation/adaptation and application of the method at the level of commitments of projects) but differ in some crucial aspects (for a detailed analysis, see OECD, 2013c).

A positive list of eligible activities is used for the tracking of mitigation finance. The focus here is on the type of activity that is executed, and not on its purpose. For the tracking of adaptation finance, the group of multilateral development banks elaborated a "three-step approach": (i) setting out the context of risks, vulnerabilities and impacts related to climate variability and climate change a project or programme seeks to address; (ii) stating the intent to address the identified risks, vulnerabilities and impacts in project documentation and (iii) demonstrating a direct link between the identified risks, vulnerabilities and impacts, and the actual activities financed by that project or programme (MDB, 2016, p. 31). In comparison with the Rio marker methodology, more documentation and analysis are therefore required before a project may be determined to address adaptation.

Additionally, rather than reporting the whole project as "climate relevant" (which is the approach of the Rio marker system), only components, sub-components, elements or proportions of projects can be reported as "climate finance" in the multilateral development banks' methodology. This can lead to huge differences: for example, when screening a climate-proofed infrastructure project, the three-step methodology would only measure the incremental cost of adaptation within the project, while the full value of the project might be counted under the Rio marker methodology. There is however limited transparency associated with the multilateral development banks' climate finance reporting as the data are not released at the project level; indeed, the group of multilateral development banks only makes publicly available aggregates or semi-aggregates of climate finance (see e.g. MDB, 2016).

3.1.3. *Private flows*

Repeated statements from developed country officials and high-level experts state flatly that most climate finance will have to come from private sources, as the private economy moves trillions of dollars in investments that set the energy consumption and climate resilience patterns for communities and nations (Global Commission on the Economy and Climate, 2014; Green Growth Alliance, 2014). However, there is no agreement under the UNFCCC on what should count as "mobilized private finance" for the US$ 100 billion goal or how it will be reported. So far, most developed countries have not reported on private climate finance to the UNFCCC Secretariat.

Some countries have very recently started assessing the private finance that they mobilize through their public interventions (e.g. for France, see Abeille, Bolscher, Ligot, Million, & Veenstra, 2015; for Denmark, see Mostert, Bolscher, & Veenstra, 2015; for Norway, see Torvanger, Narbel, & Lund, 2015; for Belgium, see van der Laan, Veenstra, Bolscher, & Rademaekers, 2015). However, the methodologies used are very preliminary and differ from one country to another. In addition, some bilateral development finance institutions have elaborated their own accounting methodology (Stumhofer, Detken, Harnisch, & Lueg, 2015); complementing similar efforts made by multilateral development banks (MDB, 2016). The OECD DAC Secretariat is also currently coordinating major research efforts on the tracking of private climate finance.[10] These diverse and preliminary practices do not allow observers to meaningfully assess the current levels of private finance, let alone to compare each developed country's performance in mobilizing private climate finance.

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3.2. *Climate finance received*

Non-Annex I Parties are currently encouraged to report information on financial support received in their National Communications and Biennial Update Reports (UNFCCC, 2011b, Decision 2/CP.17). The first Biennial Update Reports were to be submitted by December 2014. The subsequent BURs should be submitted every two years, either as a summary of parts of the National Communication in the year when the National Communication is submitted or as a stand-alone update report. However, flexibility is given to least developed country Parties (LDCs) and small island developing States (SIDS), which may submit such reports at their discretion.

Only 37 non-Annex I Parties (out of 154 non-Annex I Parties) had submitted their first BURs as at 30 July 2017. It is thus currently impossible to present a comprehensive picture of the landscape of climate finance received. In addition, there is no common format (similar to the CTF) for reporting information on financial support received, nor is there a common methodology to assess the financial support received. For example, the time periods over which the finance is reported as received vary widely (UNFCCC SCF, 2016). What is more, the UNFCCC guidelines do not require information on underlying assumptions, definitions and methodologies used in generating the information reported on climate finance received (UNFCCC SCF, 2016, p. 31). The result of this lack of specific guidance is that Parties decide what to report on an individual basis, as can be observed in their first Biennial Update Reports (see Table 2).

As acknowledged by the UNFCCC Standing Committee on Finance (UNFCCC SCF, 2016, p. 31), it is not possible to aggregate the total support received by developing countries as a result of the variations in reporting. Complete and transparent accounting and reporting of climate finance is not only a trust issue between developed and developing countries in the negotiations; it also is crucial because it can markedly improve planning and effectiveness of efforts to help developing countries reduce their fast-growing greenhouse gas emissions and to help the world's most vulnerable adapt to the climate impacts.

4. Climate finance accounting and reporting: what is next?

Billions of dollars are being granted and lent every year to help developing countries mitigate their greenhouse gas emissions, cope with increasing climate impacts and build the trust necessary to allow negotiations to continue. The picture depicted in this paper is stark: A quarter of a century into climate change negotiations, we still lack an adequate system for defining, categorizing and tracking international climate change finance. The UNFCCC reporting guidelines leave considerable discretion for a range of accounting approaches, which greatly impedes any comparisons between contributing countries' provision of climate finance and assessments of performance in mobilizing private climate finance overtime. It is currently impossible to meaningfully identify any potential geographical or sectorial gaps left out in developing countries by the financial assistance of the international community.

A notable development took place in December 2015 during Paris COP 21: The Decision text calls for the elaboration under the UNFCCC of "modalities for the accounting of financial resources provided and mobilized through public interventions" (UNFCCC, 2015, para. 57). Such modalities are supposed to be "considered" in December 2018 and could lead to the adoption of a recommendation by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) (UNFCCC, 2015, para. 57). This could potentially represent great progress in redressing the current inadequate accounting framework for climate finance provided and mobilized. However, the political and technical complexities that lie ahead of negotiators in the elaboration of those accounting modalities cannot be overstated.[11] In addition, the accounting modalities currently being negotiated will only apply to the financial support provided and mobilized, not to the financial support received. For a comprehensive transparency framework to emerge, it will be necessary to also develop accounting modalities for financial support received.

The Paris Agreement's "enhanced transparency framework" brought about other crucial developments regarding climate finance accounting and reporting (see Table 3; for a complete review, see van Asselt et al., 2017). For example, non-Annex I Parties that provide financial support to developing countries in the context of climate actions *should* now report information on such support on a biennial basis (UNFCCC, 2015, Article 13.9; Decision 1/CP.21, para. 90). Whether "emerging donors" such as China or the United Arab Emirates will do so remains uncertain, although some non-Annex I Parties may consider this as an opportunity to increase their visibility on the international stage (van Asselt et al., 2017).

In addition, the Paris Agreement put in place several processes that have the potential to improve the transparency and completeness of the information submitted by contributing countries, which would likely improve trust between Parties in the climate negotiations. Indeed, the information submitted by developed country Parties and other Parties that provide financial support *shall* undergo a technical expert review (UNFCCC, 2015, Article 13.11). Each of these Parties *shall* also participate in a multilateral consideration of progress with respect to efforts on financial support provided (UNFCCC, 2015, Article 13.11). In addition, Article 13.6 of the Paris Agreement (UNFCCC, 2015) states that the purpose of the framework for transparency of support is to provide

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Table 2. Reporting approaches used by some non-Annex I parties for financial support received.

	Reported in tabular format				Allocation channels									Sectors		Financial instruments							Other		
	Per project or activity	Per donor	Per thematic area[a]	Only headline figures	Top donors	Bilateral	Multilateral	Multilateral financial institutions	Multilateral climate change funds	Specialized United Nations bodies	GEF	Private foundations	Private sector	Thematic[a]	Economic[b]	Grant	Concessional loan	Loan	National budget	Result-based payment	Leasing	ODA/non-ODA	Status of finance[c]	Domestic finance flows	Co-financing
Argentina		✓			✓						✓														✓
Armenia	✓					✓		✓	✓	✓															
Brazil		✓				✓	✓				✓														
Chile	✓					✓	✓	✓	✓					✓	✓								✓		
Colombia		✓				✓		✓	✓	✓				✓											
Ghana	✓					✓	✓				✓	✓	✓	✓	✓	✓		✓	✓	✓				✓	✓
Indonesia		✓				✓		✓		✓						✓		✓					✓	✓	
Lebanon		✓			✓	✓		✓	✓																
Malaysia	✓					✓			✓	✓	✓														
Mauritania	✓					✓		✓		✓				✓		✓		✓			✓				
Mexico				✓										✓	✓	✓		✓							
Montenegro		✓			✓					✓	✓					✓		✓							
Morocco	✓					✓		✓	✓	✓				✓		✓	✓							✓	
Paraguay		✓				✓		✓		✓	✓					✓									
Peru	✓					✓		✓	✓					✓		✓	✓					✓			✓
Moldova (R. of)	✓					✓		✓	✓	✓				✓	✓	✓		✓							
South Africa	✓					✓		✓	✓					✓		✓		✓				✓		✓	✓
Thailand	✓					✓				✓	✓			✓											
Tunisia	✓					✓				✓	✓			✓											
Viet Nam			✓											✓										✓	

Source: Data extracted from UNFCCC SCF (2016, pp. 32–33; pp. 103–105).
[a]For example, mitigation and adaptation.
[b]For example, energy, transport and agriculture.
[c]Received or approved. Parties are shown in alphabetical order. The 20 non-Annex I Parties included in this table are those that had submitted their BURs as at 30 June 2016 and that provided summary information on financial support received during a certain period of time. In total, 32 non-Annex I Parties had submitted their BURs by 30 June 2016. Twelve of these 32 non-Annex I Parties do not appear in this table because they indicated financial support received only for some projects, activities, sectors or donors, or did not include quantitative financial information at all in their BURs.

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Table 3. Selected key differences between the pre-Paris approach to transparency of financial support and the enhanced transparency framework agreed in Paris.

Issues	Pre-Paris approach	Enhanced transparency framework agreed in Paris
Information on *financial support provided* to developing countries	Developed country Parties were required to provide information on financial support provided on a biennial basis (in their National Communications and Biennial Reports). No common accounting methodologies for financial support provided.	Developed country Parties *shall* continue to provide information on financial support provided on a biennial basis (see UNFCCC, 2015, Article 13.9; Decision 1/CP.21, para. 90). Non-Annex I Parties that provide financial support to developing countries in the context of climate actions *should* now report information on such support on a biennial basis (see UNFCCC, 2015, Article 13.9; Decision 1/CP.21, para. 90). Modalities for the accounting of financial resources provided are to be developed (see UNFCCC, 2015, Decision 1/CP.21, paragraph 57).
Information on *financial support mobilized* through public interventions	Developed country Parties were required to provide information on financial support mobilized in their Biennial Reports. No common accounting methodologies for financial support mobilized.	Modalities for the accounting of financial resources mobilized through public interventions are to be developed (see UNFCCC, 2015, Decision 1/CP.21, paragraph 57).
Information on *financial support received*	Developing country Parties were encouraged to report this information in their National Communications and Biennial Update Reports.	Developing country Parties *should* provide information on financial support received on a biennial basis – except for LDCs and SIDS, which may submit this information at their discretion (UNFCCC, 2015, Article 13.10; Decision 1/CP.21, para. 90).
Technical expert review on the information submitted on *financial support provided*	Information on support provided that developed country Parties reported in their National Communications and Biennial Reports was subject to technical expert review.	The information submitted by developed country Parties and other Parties that provide financial support *shall* undergo a technical expert review (UNFCCC, 2015, Article 13.11).
Multilateral consideration of progress with respect to efforts on *financial support provided*	No multilateral consideration of progress.	Developed country Parties and other Parties that provide financial support *shall* participate in a multilateral consideration of progress with respect to efforts on financial support provided (UNFCCC, 2015, Article 13.11).
Global stocktake	No global stocktake. The UNFCCC Standing Committee on Finance produced two editions of its "Biennial Assessment and Overview of Climate Finance Flows" (UNFCCC, 2014, 2016).	The purpose of the framework for transparency of support is to provide clarity on support provided and received by relevant individual Parties in the context of climate change, and, to the extent possible, to provide a full overview of aggregate financial support provided, to inform the global stocktake (see UNFCCC, 2015, Article 13.6).

Source: Modified from van Asselt et al. (2017, pp. 28–29).

clarity on support provided and received by relevant individual Parties in the context of climate change actions, and, to the extent possible, to provide a full overview of aggregate financial support provided, to inform the global stocktake.[12]

Another key change under the Paris Agreement is that developing country Parties *should* now provide information on financial support received on a biennial basis – except for LDCs and SIDS, which may submit this information at their discretion (UNFCCC, 2015, Article 13.10; Decision 1/CP.21, para. 90). The provision that LDCs and SIDS will be able to report financial support received "at their discretion" is necessary to protect those countries from heavy reporting duties. However, discretionary reporting might be a double-edged sword if it impedes the emergence of a clear picture of the international climate finance landscape for many of the world's most vulnerable nations. Robust and frequent

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reporting by LDCs and SIDS could help corroborate the information from Parties providing support. Significant support will probably have to be given to LDCs and SIDS to help them report information on financial support received on a biennial basis, as is expected from other developing countries.

Overall, despite some of the gaps highlighted above, many elements contained in the Paris Agreement and Decision text could lead to marked improvements in the way climate finance is accounted and reported. Would these potential improvements eventually lead to enhanced trust between Parties in international negotiations; to increased levels of climate finance provided and mobilized; to fairer burden sharing between contributing countries; and to a more equitable and/or efficient allocation of climate finance? Researchers are just starting to explore this crucial question (for a relatively optimistic view, see e.g. Pickering, Jotzo, & Wood, 2015; for a more cautious opinion, see e.g. Gupta & van Asselt, 2017).

Notes

1. In this paper, we consider developed countries to be UNFCCC Annex II Parties. Under the UNFCCC, Annex II Parties have longstanding obligations in terms of providing financial resources to enable developing countries (considered here as UNFCCC non-Annex I Parties) to undertake emissions reduction activities and to help them adapt to adverse effects of climate change. Annex II Parties are among others also required by the UNFCCC to provide information on those financial resources provided to and mobilized in developing countries.
2. There is no internationally agreed definition of the terms "climate finance". In this paper, we understand "international climate finance" as the financial flows provided and mobilized by developed countries that stem from their obligations under the UNFCCC to help developing countries mitigate their greenhouse gas emissions and adapt to the adverse effects of climate change.
3. The finance ministers of 18 developed countries came forward on 6 September 2015 with a statement that they need to provide "increased transparency" on their progress towards the US$ 100 billion goal (100 billion Goal. Australia, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Poland, Sweden, Switzerland, Joint Statement, 2015). In their statement, those countries admit that the current data is inadequate and sought to set a "common understanding of mobilized climate finance". The statement raised however the question of why recipient nations were not formally included in this crucial definitional work (Weikmans & Roberts, 2015).
4. Under the Paris Agreement (UNFCCC, 2015, Article 13.9) non-Annex I Parties that provide financial support to other developing countries are also expected to report information on such support on a biennial basis. We do not review accounting and reporting practices of non-Annex I Parties in this paper because so far there has been very limited voluntary reporting of information by developing country Parties that provide financial resources to other developing countries.
5. As detailed in Tables 7(a) and 7(b) in Decision 19/CP.18 (UNFCCC, 2012b), Annex II Parties are among others required to indicate in these common tabular format spreadsheets the total amount, status, funding source, financial instrument and amount of support provided through bilateral, regional and multilateral channels, to specific countries for mitigation and adaptation. In addition, Annex II Parties have to report, to the extent that is possible, on private financial flows leveraged by bilateral climate finance towards mitigation and adaptation activities in non-Annex I Parties, and should also report on policies and measures that promote the scaling up of private investment in mitigation and adaptation activities in developing country Parties.
6. The generic term "project" used in this paper also refers to other types of aid modalities (e.g. sector budget support, technical assistance).
7. See http://stats.oecd.org/Index.aspx?DataSetCode=RIOMARKERS.
8. For a summary of the information on "new and additional" definitions used by developed countries in their first Biennial Reports, see UNFCCC SCF (2014, pp. 57–58).
9. In OECD DAC statistical reporting systems, commitments, even if multi-year, are recorded in whole in the year they are signed. By contrast, disbursements denote actual payments in each year.
10. See www.oecd.org/env/researchcollaborative.
11. For an overview of the current status (May 2017) of the negotiations on the development of these accounting modalities, see UNFCCC (2017b, para. 127–131). Interested readers will also find many recommendations regarding the improvement of current accounting modalities in the last report of the UNFCCC Standing Committee on Finance (UNFCCC SCF, 2016).
12. The global stocktake refers to a moment every five years when all Parties will take stock of the implementation of the Paris Agreement to assess the collective progress towards achieving its purpose and its long-term goals (see UNFCCC, 2015, Article 14).

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