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Splitting the difference: can limited coordination achieve a fair distribution of the global climate financing effort?

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Abstract

Mobilizing climate finance for developing countries is crucial for achieving a fair and effective global climate regime. To date developed countries retain wide discretion over their national contributions. We explore how different degrees of international coordination may influence the fairness of the global financing effort. We present quantitative scenarios for (i) the metrics used to distribute the collective effort among countries contributing funding; and (ii) the number of contributing countries. We find that an intermediate degree of coordination—combining nationally determined financing pledges with a robust international review mechanism—may reduce distortions in relative efforts as well as shortfalls in overall funding, while reflecting reasonable differences over what constitutes a fair share. Broadening the group of contributors may do little to improve adequacy or equity unless the more heterogeneous group can converge on credible measures of responsibility and capacity. The analysis highlights the importance of building common understandings about effort-sharing.

Keywords

Climate policy, climate finance, equity, fairness, climate change mitigation, climate change adaptation, development assistance

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Introduction

Climate finance remains one of the main unresolved issues in global climate change negotiations. Mobilizing finance to address climate change will be crucial for engaging developing countries in global efforts to cut greenhouse gas emissions. Funding commitments by wealthy countries may help to promote equity in global climate governance by ensuring a fairer distribution of the costs of reducing emissions and adjusting to the impacts of rising temperatures, and by demonstrating good faith on the part of developed countries. Conversely, if wealthy countries fail to fulfill the commitment they made in 2009 to mobilize \$100 billion a year in climate finance by 2020, the climate regime's credibility will suffer lasting damage. Even if countries achieve the commitment, it is likely to meet only a portion of developing countries' financing needs.¹ While developed countries have pledged over \$10 billion to a new UN Green Climate Fund, overall levels of funding remain insufficient to assure poorer countries that wealthy countries are on track to meet the \$100 billion-a-year target.²

The challenge is to raise enough funding to meet the collective commitment without disproportionately burdening some countries and demanding too little of others. Despite having agreed on a collective financing target, developed countries have not formalized arrangements for sharing the financing effort. At present governments of contributing countries retain wide discretion over the size of their national contribution as well as over the sources of funding that they draw on to fulfill that contribution. Meanwhile, some countries not formally obligated to contribute climate finance—including Korea, Mexico and several Latin American countries—have announced voluntary pledges to the Green Climate Fund, but debate persists over whether and how the pool of contributors should expand further.

¹ Haites 2013, 8.

² Green Climate Fund 2014a; UNFCCC 2012.

Would a greater degree of international coordination enhance the fairness of effort-sharing arrangements in climate finance? This question speaks to a broader debate in global environmental governance about ways in which different degrees of international coordination may affect various measures of institutional evaluation including equity and legitimacy.³ In this article we frame our analysis in terms of a spectrum commonly invoked in climate governance ranging from highly coordinated or centralized (“top-down”) to uncoordinated or highly decentralized (“bottom-up”) approaches.⁴

Scholars have observed that nuanced evaluation of top-down and bottom-up approaches has been hampered by caricatured distinctions between each approach, rather than recognizing that a variety of intermediate approaches combining bottom-up and top-down elements may be possible.⁵ Previous research by David Cipler and colleagues has also drawn attention to distinct distributive issues raised by finance for adaptation (i.e., adjusting to the impacts of climate change) that analyses of sharing the national burdens of mitigation (i.e., reducing greenhouse gas emissions) do not fully encapsulate.⁶ Our analysis seeks to advance understanding of these under-developed areas of the literature by bringing together a finer-grained evaluation of different degrees of coordination and the perspective of equity. While our analysis points to considerable commonalities between national mitigation and finance on these aspects, we also highlight important differences between the two issues, including the relationship between aggregate and national targets, and the role of prior commitments in informing expectations about current pledges. Accordingly the degree of coordination required for financing may not necessarily be the same as that for mitigation.

³ Biermann et al. 2009; Eckersley 2012.

⁴ Stavins et al. 2014, 21.

⁵ Dubash and Rajamani 2010.

⁶ Cipler et al. 2013, 53.

We begin by outlining equity considerations relevant to climate finance and applying to the climate finance context existing findings on how different degrees of coordination may affect equity. With this conceptual framework in place, we explore the implications of differing degrees of coordination along two important dimensions of the effort-sharing problem: (i) the criteria and metrics used to apportion efforts among the countries contributing to the global effort; and (ii) the number of contributing countries. For each dimension we present quantitative analysis that illustrates how the distribution of effort may shift according to different coordination scenarios. We complement the quantitative analysis with qualitative analysis of recent initiatives to raise multilateral environmental finance.

We find that, compared to present arrangements, a greater degree of coordination on both dimensions of effort-sharing will be essential for securing funding that is adequate and fair. However, formulaic or highly top-down approaches to determining the size of the contributing group or the distribution of national efforts are likely to encounter resistance from developing and developed countries respectively. Accordingly, we argue that a hybrid approach—combining nationally driven financing pledges with a robust review mechanism that helps to build common understandings about effort-sharing criteria—is best suited to promoting equity, adequacy and feasibility.

Fairness in Climate Finance: Concepts and Criteria

Under the 2009 Copenhagen Accord, developed country parties to the United Nations Framework Convention on Climate Change (UNFCCC; or “the Convention”) committed to provide climate finance approaching US\$30 billion between 2010 and 2012 (“fast-start finance”) and to mobilize long-term finance of US\$100 billion a year by 2020.⁷ Parties have not agreed on an official definition of what should count as climate finance, but for present purposes we use the following definition: “financial flows mobilized by industrialized country

⁷ UNFCCC 2009, Paragraph 8.

governments and private entities that support climate change mitigation and adaptation in developing countries”.⁸

An emerging body of literature has sought to identify principles for evaluating the fairness of institutions for governing climate finance.⁹ We use the term “fairness” to refer to even-handed, proportionate or non-arbitrary treatment of persons and groups in the distribution of goods or the satisfaction of moral claims.¹⁰ While some research assigns a narrower meaning to the term “equity” than to “fairness,” it is also common to employ the two terms interchangeably.¹¹ Even if the two terms may differ in some respects, we take both fairness and equity to have in common (i) a substantive dimension relating to the fairness of the outcome of the institution or policy in question, as well as (ii) a procedural dimension relating to the fairness of associated decision-making and implementation processes.¹²

Scholarly analysis of substantive fairness in climate finance commonly invokes the principle contained in the Convention of parties’ “common but differentiated responsibilities and respective capabilities” (CBDR-RC) for protecting the climate system.¹³ According to this principle, national governments should contribute climate finance in accordance with their responsibility for causing the problem of climate change and their economic capacity to raise funds.¹⁴ Substantive fairness in effort-sharing requires not only fairness among contributing countries, but also arrangements that do not either unduly shift the burden of raising funds onto recipient countries or divert other resources (such as development assistance) that

⁸ Stadelmann et al. 2013, 3.

⁹ See for example Ballesteros et al. 2010; Ciplet et al. 2013 ; Grasso 2010; Schalatek 2012.

¹⁰ Compare Rawls 1999, 5.

¹¹ Kolstad et al. 2014, 259.

¹² Shelton 2007, 640-641.

¹³ UNFCCC, Article 3.1.

¹⁴ Ciplet et al. 2013, 55; Dellink et al. 2009.

contributors have pledged for recipient countries. Substantive fairness in climate finance extends beyond effort-sharing to questions of fair allocation of funding among and within recipient countries, but detailed analysis of allocation is beyond the scope of this article.¹⁵

While our analysis focuses primarily on substantive fairness, pursuing this goal may give rise to trade-offs with other important criteria for institutional evaluation, including procedural fairness, effectiveness and feasibility. We take *procedural fairness* to require at a minimum that effort-sharing arrangements: (i) are transparent and accountable; (ii) represent the interests of affected parties, including those of both contributing and recipient countries; and (iii) are reached through authentic deliberation, i.e. deliberation that is truthful, mutually respectful and non-coercive.¹⁶

At the level of climate policy overall, *effectiveness* is often interpreted in terms of environmental outcomes, such as the ability of a given policy to avoid dangerous climate change.¹⁷ In the context of effort-sharing arrangements for climate finance (if not the environmental outcomes of financed activities), effectiveness is best understood in terms of “adequacy.”¹⁸ That is, effort-sharing arrangements should at a minimum fulfill agreed collective funding targets, but should also be sufficient to address the unmet climate-related financing needs of developing countries. Understood this way, adequacy in climate finance is ultimately not altogether separable from fairness, since adequate financing contributes to the fair distribution between developed and developing countries of the overall costs of addressing climate change. Finally, we take *feasibility* to refer to whether a particular institutional arrangement is capable of being implemented given economic, practical or

¹⁵ See Cipler et al. 2013.

¹⁶ See respectively: (i) Biermann and Gupta 2011; (ii) Grasso 2010, 77; Schalatek 2012, 961-63; (iii) Stevenson and Dryzek 2014, 25.

¹⁷ Stavins et al. 2014, 1009.

¹⁸ UNFCCC 2009, Paragraph 8.

political constraints such as finite resources, organizational path dependence or public acceptability.¹⁹

Evaluating Top-down and Bottom-up Approaches to Climate Governance

Recent scholarship has employed a number of contrasts to frame debates about international coordination in global environmental governance, including (i) top-down versus bottom-up approaches, (ii) multilateral versus “minilateral” approaches and (iii) fragmented versus integrated governance.²⁰ Typically each pair of terms refers to different ends of a spectrum rather than to a binary contrast. As our analysis focuses primarily on the degree of international coordination needed to achieve fairness in achieving an agreed multilateral target, we set aside some broader aspects of debates on coordination, including potential for national or sub-national actors to act on climate change in the absence of a multilateral framework,²¹ or the division of labor among international organizations in the climate regime.²²

International climate agreements may be top-down or bottom-up on a variety of dimensions.²³ The dimensions most relevant to our analysis are (i) objectives or targets for action, (ii) oversight standards, (iii) the range of countries participating and (iv) metrics for effort-sharing. A top-down approach would involve uniform or centralized approaches to some or all of these dimensions, while under a bottom-up approach national governments would retain discretion to determine these policy settings unilaterally.

¹⁹ Gilabert and Lawford-Smith 2012; Pickering et al. 2012.

²⁰ See respectively (i) Hare et al. 2010; (ii) Eckersley 2012; (iii) Biermann et al. 2009.

²¹ Hoffmann 2011; Ostrom 2010.

²² Keohane and Victor 2011; Zelli and van Asselt 2013.

²³ Hare et al. 2010, 601.

Applying these dimensions to climate finance, the size of each country's national financing effort will depend on: (i) the size of the collective funding target (if any); (ii) the types of funding that may be counted towards a national government's share of the collective target; (iii) the size of the contributor group; and (iv) the method for distributing shares among the contributor group. We briefly review arguments in relation to each dimension, before exploring dimensions (iii) and (iv) in greater detail in subsequent sections.

Collective Targets

Numerous commentators consider multilateral coordination to be more capable of effectively addressing collective action problems such as climate change mitigation than loosely coordinated or unilateral approaches. Thus Bill Hare and colleagues argue that only top-down approaches to mitigation will be able to circumvent the problem of free-riders, thereby promoting both adequacy and substantive fairness.²⁴ Proponents of bottom-up approaches argue by contrast that transnational competition for clean technology investment may stimulate innovation through experimentation and a "race to the top" among countries.²⁵

Mobilizing global climate finance likewise involves a collective action problem and is therefore vulnerable to the risk that some countries will free-ride on the pledges of others.²⁶ Moreover, as a contributor's pledges primarily benefit other countries (some of whom may be economic competitors), the argument of a "race to the top" in finance may be less plausible, at least as long as countries' interests in enhancing their international reputation are weaker than their economic interests. For these reasons, multilateral coordination on a common financing goal is strongly preferable.

²⁴ Hare et al. 2010, 604; see also Biermann and Gupta 2011, 26-28.

²⁵ Hoffmann 2011 ; Keohane and Victor 2011; Ostrom 2010.

²⁶ Bayer and Urpelainen 2013.

Oversight Mechanisms and Standards

The case for coordinated oversight (or, in the terminology of the UNFCCC, measurement, reporting and verification (MRV)) is likewise strong for both climate finance and national mitigation efforts, and attracts support from advocates of both top-down and bottom-up approaches.²⁷ Coordinated oversight typically involves centralized institutional mechanisms for reporting on and reviewing progress as well as agreed multilateral standards for conducting those tasks. An important rationale for coordinated oversight arrangements for finance and national mitigation is that both those who bear the costs and those who benefit have an interest in knowing how much effort governments are expending and whether that effort is producing the desired results. Thus, even in the absence of agreed benchmarks for effort-sharing, coordinated oversight may promote substantive fairness (by detecting and deterring free-riding) as well as procedural fairness (by promoting transparency and accountability, thereby facilitating deliberation).²⁸

Ongoing disagreement between developed and developing countries over whether and how certain types of flows should count towards the overall commitment illustrates the risks associated with an uncoordinated approach to setting oversight standards.²⁹ The Copenhagen Accord gave wide discretion to national governments over how they would fulfil their commitments, by stipulating that longer-term funding would be drawn “from a wide variety of sources, public and private, bilateral and multilateral, including alternative sources of finance.”³⁰ In practice, contributors have adopted widely different approaches to accounting for public and private sources. This has prompted concerns from developing countries that contributors may divert aid funding from purposes that may be of greater

²⁷ Bodansky 2011; Hare et al. 2010, 604, 607.

²⁸ Biermann et al. 2009, 30; Karlsson-Vinkhuyzen and McGee 2013, 74.

²⁹ Ciplet et al. 2013.

³⁰ UNFCCC 2009, Paragraph 8; UNFCCC 2011, Paragraph 99.

immediate benefit for developing countries,³¹ or take credit for private finance that would have flowed to developing countries even in the absence of the funding commitment.³² For these reasons, intensive coordination will be necessary to develop credible standards for determining the eligibility of sources and how they should count towards the collective target.

The Effort-Sharing Puzzle

Even if the case for coordinated goal-setting and oversight is strong, the case for coordinated effort-sharing is more contested. Developing countries have argued for a more systematic or coordinated approach to burden-sharing as well as goal-setting by proposing that commitments be based on a fixed percentage of developed countries' national income.³³ Developing countries' arguments to this effect are often coupled with the idea that, due to the impacts of developed countries' historical emissions on developing countries, climate finance is a matter of entitlement (or obligation) rather than of "charity," and the discretion of contributors must therefore be constrained.³⁴

Wealthy countries—notably the US—have emphasized that they should be entitled to a substantial degree of discretion in how they raise funds, and have encouraged those beyond the existing group of contributors to make funding pledges.³⁵ The EU, while apparently more open to a more formulaic approach to effort-sharing, has emphasized its "fiscal sovereignty" in its choices about funding sources.³⁶ The idea of fiscal sovereignty not only reflects more general notions of national sovereignty in international relations but also embodies the view that taxation and expenditure arrangements form part of the domestic social contract

³¹ Stadelmann et al. 2011.

³² Stadelmann et al. 2013.

³³ South Centre 2011, 11.

³⁴ India 2011.

³⁵ Haites and Mwape 2013, 163; United States 2011.

³⁶ European Commission 2011; European Commission 2013.

between governments and their citizens.³⁷ Accordingly, states may be reluctant to cede discretion over how much they contribute to a substantial funding effort as doing so may inhibit their ability to adjust budgetary allocations to respond to changing domestic priorities.

The experience of the fast-start finance period at first appears to provide little support for the importance of coordinating on shares within the contributing group. Contributors announced their individual fast-start commitments in an apparently *ad hoc* fashion at the Copenhagen conference and in the months thereafter. As it happened, individual pledges were sufficient to cover the collective fast-start commitment (although a substantial proportion of funds pledged had not yet flowed through to recipient countries by the end of the fast-start period).³⁸ On this basis, a bottom-up approach to effort-sharing may appear to be sufficient for securing adequate funding, as some countries may have reputational motivations for unilaterally making up for shortfalls in the overall commitment, as Japan and Norway did.³⁹ In addition, the collective financing pledges at Copenhagen fixed an overall distribution of the multilateral financing effort between developed and developing countries. As all contributing countries were wealthy, ensuring fair shares within the contributing group was arguably less important than doing the same within a group containing members with widely varying incomes. By contrast, under the Copenhagen Accord both developed and developing countries put forward national mitigation pledges in the absence of a fixed division of labor between the two groups.

Nevertheless, there are two reasons why the experience of the fast-start finance period may not provide a sufficient guide for future financing efforts. First, when the stakes are considerably higher—as in the long-term finance commitment, which requires a ten-fold increase in annual nominal amounts compared to the fast-start period—it is less likely that

³⁷ Dietsch 2011.

³⁸ Nakhooda et al. 2013.

³⁹ See Ciplet et al. 2012, 2.

countries will be able to rely upon some countries' unilateral action to bridge a substantial shortfall in collective funding. Second, as we discuss below, expanding the contributing group to include a wider range of countries could enhance the adequacy of fundraising efforts, but as the group becomes larger and more diverse, equity considerations regarding relative shares within the group once again come to the fore.

Measuring Fair Shares

We now introduce quantitative analysis in order to compare different degrees of coordination in effort-sharing. Existing research in this area has typically focused on choice of effort-sharing metrics but has not explicitly incorporated different coordination scenarios.⁴⁰

Initially we take as fixed the existing list of countries that have responsibilities to provide climate finance under the UNFCCC, namely Annex II ("developed") parties. In the next section we investigate the implications of varying the size of the contributor group. Our analysis is applicable not only to the \$100 billion commitment, but also to a subset thereof (such as the share of public finance in the overall commitment, or contributions to the Green Climate Fund) or to a larger collective target. Our analysis is also neutral as to whether national contributions are drawn from development assistance budgets or other sources. However, holding the size of a national effort constant, a pledge that redirects other funding intended for developing countries will diminish its overall substantive fairness.

Scenarios for Metrics and Coordination

We begin by introducing a range of possible indicators that could guide decisions about effort-sharing.

⁴⁰ See for example Dellink et al. 2009; Petherick 2014.

Table 1 shows illustrative shares for Annex II contributors, disaggregated by the five largest contributors of fast-start finance. We use a range of indicators based on the UNFCCC principle of parties' "common but differentiated responsibilities and respective capabilities," measured in terms of national emissions and income. We also include several indicators based on countries' previous shares of funding for international purposes, as some contributors used these indicators as a guide to their fast-start finance contributions.⁴¹

For parsimony we exclude from the presentation of results a number of variations on the indicators outlined above. For the present analysis we tested a number of variations for emissions (e.g. excluding emissions from land use) and income (e.g. market exchange rates), but found that these modifications resulted in very limited differences in overall trends. Extending the timeframe for historical emissions to periods before 1990 increases developed countries' share of global emissions, but the differences are moderate for most countries since around a third of cumulative global emissions between 1850 and 2010 occurred since 1990.⁴²

⁴¹Pickering et al. 2015, 155.

⁴² Dellink et al. 2009, 416; den Elzen et al. 2013.

Table 1. Illustrative Indicators for Sharing the Climate Finance Effort among Annex II Countries

Percentage of each country or group's share of the Annex II total

| | | Australia | EU Annex II member states | Japan | Norway | US | Other Annex II |
|-----------------------------------|-------------------------------------|-------------|---------------------------|-------------|-------------|--------------|----------------|
| Responsibility (GHG emissions) | Emissions (2008-2011) | 4.8% | 28.4% | 9.1% | 0.2% | 50.0% | 7.6% |
| | Emissions (1990-2011) | 4.2% | 29.7% | 9.5% | 0.2% | 49.4% | 7.0% |
| Capacity (income) | GDP (2008-2011, PPP) | 2.4% | 37.3% | 12.2% | 0.7% | 42.2% | 5.1% |
| Existing pledges or contributions | Global Environment Facility (GEF-5) | 1.8% | 54.8% | 14.9% | 1.7% | 17.0% | 9.7% |
| | Fast-start finance | 1.9% | 22.1% | 42.8% | 6.6% | 22.2% | 4.5% |
| | UN Scale of Assessment (2012) | 2.5% | 46.5% | 16.0% | 1.1% | 28.1% | 5.9% |

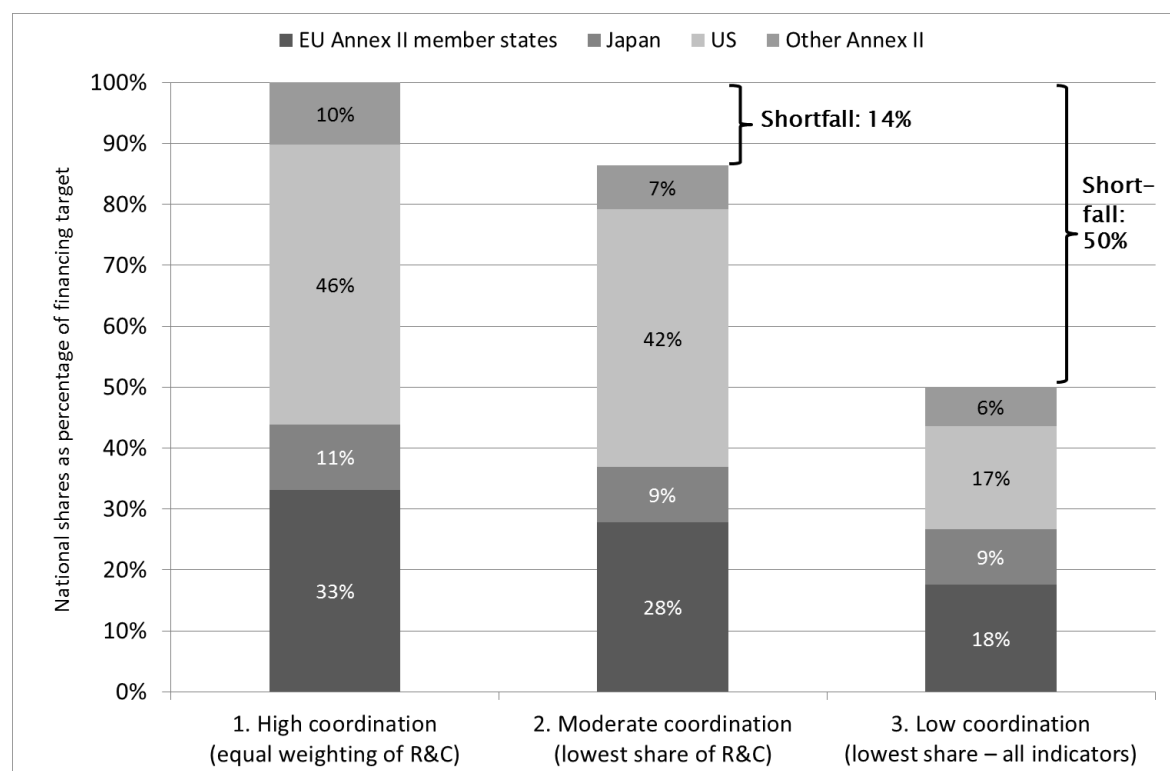
Notes: Numbers in bold show the indicator that yields the lowest contribution for each country or group. Data sources: (i) greenhouse gas (GHG) emissions: WRI 2015, carbon dioxide equivalent, including emissions from land use; (ii) GDP: IMF 2011, reported at purchasing power parity (PPP); (iii) GEF – GEF 2010, showing actual shares of GEF's fifth replenishment (GEF-5); (iv) fast-start finance: Nakhooda et al. 2013; (v) UN Scale of Assessment: United Nations 2011.

We use the indicators outlined in Table 1 as a basis for developing three hypothetical scenarios for different degrees of coordination in effort-sharing, as shown in

Figure 1. In the “high coordination” scenario (first column) contributing countries agree on a common formula for sharing the entire effort based on the indicators of responsibility (R) and capacity (C) above. The combination of metrics under this scenario resembles several existing top-down proposals for sharing mitigation and financing efforts, albeit in a simpler form.⁴³ In the “moderate coordination” scenario (second column) countries may choose among indicators based on responsibility and capability. We assume that each country, motivated by short-term self-interest, chooses the indicator that minimizes its own contribution. Finally, in the “low coordination” scenario (third column), countries have complete discretion over which of the indicators in Table 1 they use to estimate their share of the total effort. As under the moderate coordination scenario, we assume that countries choose the indicator that requires them to pay the smallest amount.

⁴³ See for example Baer et al. 2008; Dellink et al. 2009; Petherick 2014.

Figure 1. Comparing Degrees of Coordination in Effort-sharing



Abbreviations: R: responsibility; C: capacity. Notes: (i) responsibility shares for the high coordination scenario are based on the average of current (2008-2011) and cumulative (1990-2011) shares of Annex II emissions; (ii) under the moderate and low coordination scenarios, EU Annex II member states choose their lowest indicator individually, rather than as a bloc.

The results indicate that under a low coordination scenario the sum of pledges would fall considerably short of the aggregate funding required, with only half of the aggregate funding target fulfilled. The main reason is that existing pledges of two large contributors (e.g. the EU share of fast-start finance and the US share of fast-start finance and GEF-5) are significantly lower than their responsibility and capability shares. However, if countries can only choose between measures based on capacity and responsibility, the sum of pledges falls short of the target by considerably less (about 14 percent). This is because national income and emissions levels are correlated, so that the scope for minimizing each country's contribution is limited.⁴⁴

⁴⁴ Bassetti et al. 2013.

Evaluating the Coordination Scenarios

These scenarios illustrate the risk that an uncoordinated approach to effort-sharing could result in a significant shortfall in funding. The broader the range of metrics from which countries can choose, the larger the shortfall will be if countries seek to minimize their contributions. As noted above, the larger the absolute size of the funding target, the larger the absolute size of the shortfall under a given scenario will be, and the less feasible it will be for individual countries to do more than their fair share in order to bridge the gap.

Accordingly, moderate or high coordination appears necessary to secure adequate funding.

How do the scenarios fare on criteria of fairness? Beginning with the low coordination scenario, one could argue that allowing countries to base their shares on prior pledges is procedurally fair, as those pledges constitute a precedent previously accepted by other contributors as credible. Thus one might argue that prior pledges confer “source-based legitimacy” on a country’s share, i.e. legitimacy that derives from the source or origin of an institution or decision.⁴⁵

However, prior pledges are not robust indicators of substantive fairness, as a country’s willingness to pay may fall short of more objective measures of its responsibility or capacity to pay. In addition, replenishment negotiations typically treat as a precedent only a country’s “basic share” of the total funding required, rather than the actual share that they pledge for a given replenishment.⁴⁶ The GEF set basic shares during its first replenishment in order to allow flexibility for existing or new contributors to make further contributions. At that time all countries’ basic shares added up by design to around 90 percent. However, over time some countries (notably Japan and the US) have reduced their basic shares without corresponding increases in the basic shares of other countries, and by the time of GEF-5 all countries’

⁴⁵ Bodansky 1999, 612.

⁴⁶ GEF 2013, 3.

basic shares only added up to 73 percent.⁴⁷ Thus supplemental contributions from other countries (particularly EU member states) have become more important in ensuring that actual shares add up to the total funding required. For this reason basic shares have become increasingly inadequate as a guide for future funding efforts.

A broader concern about low coordination relates to the ability of countries to choose from a diverse range of indicators. One could argue that the low coordination scenario ranks better than the others on procedural fairness, as it gives each country greater ownership over how it frames its share. However, such an approach fares poorly on other aspects of procedural fairness, including transparency and quality of deliberation among countries, since each country may simply choose its own metric without justification.

By narrowing down possible metrics to a more objectively justifiable range, the moderate and high coordination scenarios improve on the substantive fairness of the low coordination scenario. As Figure 1 shows, the high coordination scenario fares better than the moderate coordination scenario on adequacy. But a major challenge for the high coordination scenario is whether such an approach is politically feasible given the resistance of many countries to formulaic approaches.

Scales of contribution have been adopted for several other multilateral funding mechanisms—including the UN budget for peacekeeping and core operations, the UNFCCC’s operating budget, and contributions to the Ozone Fund.⁴⁸ However, these approaches have generally been adopted in situations where the size of the collective funding effort is substantially smaller. The United Nations peacekeeping budget for fiscal year 2014-15, for example, is approximately US\$7 billion.⁴⁹ Once a scale of contribution covers a larger proportion of a country’s income, concerns about the effect of such a scale

⁴⁷ GEF 2013, 3, 10.

⁴⁸ Haites 2013, 163.

⁴⁹ United Nations 2015.

on a country's fiscal sovereignty are likely to increase. Thus, while a larger collective target makes some degree of coordination more important, it may also make a high degree of coordination more politically vexed.

Policy Options

These observations suggest that the moderate coordination scenario, despite resulting in a limited shortfall, may nevertheless be preferable to the high coordination scenario because it is more politically feasible while also faring reasonably well on substantive fairness.

There are a number of ways in which a moderate coordination scenario could be implemented. Under Benito Müller's "preference score" approach, which other researchers have applied to pledges for the Green Climate Fund, countries vote on their preferred effort-sharing indicator (assumed to be the indicator that minimize a country's own contribution).⁵⁰ The votes for each indicator, weighted by the population of each country, are then tallied up to obtain the weighting of each indicator in the overall effort-sharing metric.

While elegant and arguably procedurally fair in giving each citizen of a contributing country equal representation in determining the distribution of national efforts, this approach still requires countries to agree on an integrated formula. Introducing a limited degree of choice may not be sufficient to overcome the resistance of countries that are reluctant to adopt a formulaic approach on principle.

An alternative—and in our view more promising—option would be to adopt a broader deliberative approach to guiding effort-sharing decisions. Countries would report on their projected share of the financing effort as well as the basis on which they calculated their share. A review mechanism would compare and aggregate national pledges, then report on their adequacy and fairness compared to a range of credible effort-sharing indices.

⁵⁰ Müller 1999; see also Cui et al. 2014.

Countries falling well short on credible measures of effort would then be encouraged to increase their level of effort.

Such an approach would complement and build on recent moves towards a more robust “pledge-and-review” process for negotiating mitigation commitments under the UNFCCC. Strengthening existing requirements for reporting on climate finance could help build common understandings in the short term, while review of longer-term financing pledges could be incorporated into the review of “intended nationally determined contributions” under a post-2020 agreement.⁵¹

Advantages of this approach are that it enhances the transparency of national decision-making, opens up space for deliberation on credible measures of effort, and “names and shames” those that are doing less than their fair share. A common approach to both finance and mitigation efforts could also help to achieve a more comprehensive picture of the overall climate policy effort pledged by each country. A disadvantage is that there is no guarantee that such an approach will goad laggard contributors into boosting their efforts, although the use of compliance measures such as border tax adjustments could increase the costs of shirking while also helping to bridge funding gaps.⁵²

Importantly, however, under a moderate coordination scenario deliberation at the multilateral level alone is unlikely to be sufficient to build clear expectations about credible shares of finance. Deliberation at the national level will also be important, whether through independent government authorities that review each country’s level of climate policy effort or through independent analysis that informs national debates.⁵³

⁵¹ See Haïtes et al. 2013, 18.

⁵² Grubb 2011.

⁵³ Stevenson and Dryzek 2014, Chapter 7. For examples of independent analysis of national efforts, see Houser and Selfe 2011 (US), Jotzo et al. 2011 (Australia) and Kehler Siebert 2013 (Sweden).

Expanding the Pool of Contributors

So far we have assumed a fixed size for the group of contributors, namely Annex II countries. However, there are both normative and empirical reasons for exploring the implications of variations in the size of the contributing group. Many commentators agree that the UNFCCC's Annexes are rigid and outmoded.⁵⁴ The composition of Annex II was originally based on membership of the OECD at the time of the Convention's adoption in 1992, and its composition has changed very little since that time despite large increases in global emissions and income and substantial changes in their global distribution.⁵⁵ As we have argued elsewhere, there are strong reasons of fairness for expanding the contributing group to include a number of other non-Annex II countries with high per capita emissions and income.⁵⁶

Moreover, some non-Annex II countries have already begun to make pledges of climate finance. Korea, Indonesia and Mexico, along with several Latin American countries, for example, have announced pledges to the Green Climate Fund.⁵⁷ In addition, the BASIC bloc of large emerging economies (Brazil, South Africa, India and China) have contributed to replenishments of the Global Environment Facility (GEF).⁵⁸

Scenarios for Expanding the Contributor Group

⁵⁴ See for example Depledge 2006; Garnaut 2008.

⁵⁵ Depledge 2009, 274.

⁵⁶ Jotzo et al. 2011, 18, 51; Pickering et al. 2012.

⁵⁷ Green Climate Fund 2014b.

⁵⁸ GEF 2010.

Table 2 shows a range of possible scenarios for expanding the contributor group (in ascending order of group size) using selected indicators from the previous analysis. Group A (which we refer to as the “updated Annex II” group) comprises all countries whose per capita income is higher than the Annex II country with the lowest income (Portugal, with around \$23,000 per capita annually over 2008-2011).⁵⁹ In Group B (the “high capacity and responsibility” group) membership is based on a combination of responsibility and capacity. For illustrative purposes we have used for our emissions threshold the Annex II country with the lowest per capita emissions (Sweden, with around four tonnes of carbon dioxide per capita annually over 2008-2011). However, since it would be unreasonable to expect poorer countries to contribute finance even if their emissions were comparable with those of Annex II, countries must also exceed the World Bank’s threshold for high-income countries (Gross National Income per capita of \$12,746 in 2013) to be included in the group.⁶⁰ Although the emissions threshold is below the global average (around six tonnes per person in 2008-2011), raising the threshold to the global average makes little difference to the size of the group, as most high-income countries have above-average per capita emissions. Group C (the “self-selected” group) comprises countries that have contributed to major recent international climate funding efforts (GEF-5 and fast-start finance or the Green Climate Fund). Again, the scenarios aim to provide an illustrative but not definitive range of plausible groupings.

⁵⁹ See also Houser and Selfe 2011.

⁶⁰ See Garnaut 2008, 222.

Table 2. Effort-sharing under Different Indicators as Contributor Group Expands

Country's share of each indicator as a percentage of the group [A, B or C] total

| | A. Updated Annex II | | | B. High capacity and responsibility | | | C. Self-selected | | |
|---------------------------|---------------------|------------|------------------|-------------------------------------|----------|------------------|------------------|----------|------------------|
| | Resp'ty | Capacity | Existing pledges | Resp'ty | Capacity | Existing pledges | Resp'ty | Capacity | Existing pledges |
| US | 43% | 37% | 17% | 36% | 34% | 17% | 23% | 25% | 16% |
| EU (Annex II states) | 26% | 33% | 54% | 22% | 30% | 54% | 14% | 22% | 53% |
| Other Annex II | 18% | 18% | 28% | 15% | 17% | 28% | 10% | 12% | 27% |
| Annex II subtotal | 88% | 88% | 99% | 73% | 81% | 99% | 46% | 58% | 97% |
| China | N/A | N/A | N/A | N/A | N/A | N/A | 20% | 16% | 0.4% |
| India | N/A | N/A | N/A | N/A | N/A | N/A | 6% | 6% | 0.3% |
| Russia | N/A | N/A | N/A | 14% | 5% | 0.3% | 9% | 4% | 0.3% |
| Other new contributors | 12% | 12% | 0.9% | 14% | 14% | 0.7% | 19% | 16% | 2% |
| New contributors subtotal | 12% | 12% | 0.9% | 27% | 19% | 1.0% | 54% | 42% | 3% |

Notes on indicators: (i) responsibility: 1990-2011 emissions (including LULUCF); (ii) capacity: 2008-2011 GDP per capita (PPP); (iii) existing pledges: contributions to GEF-5.

The results reveal a number of interesting features. First, and perhaps most strikingly, the lowest Annex II share emerges under the self-selected group using a responsibility indicator. This is mainly because a number of emerging economies with high absolute emissions (notably China and India) contributed to GEF-5. Second, using a capacity indicator reduces the Annex II share by less than using a responsibility indicator, as there are a number of non-Annex II countries with relatively high per capita emissions but relatively low per capita incomes. Third, Annex II shares vary barely at all across scenarios if the existing pledges indicator is used. This is due to the fact that even though a number of non-Annex II countries have pledged funds to the GEF, most have not taken up “basic shares” and typically contribute very small shares of overall funding. In most cases, their contribution is pegged at the minimum amount required to maintain voting rights in the GEF (around US\$6 million). The BASIC countries and Russia, for example, each pledged less than 0.5 percent of the total GEF-5 replenishment.⁶¹

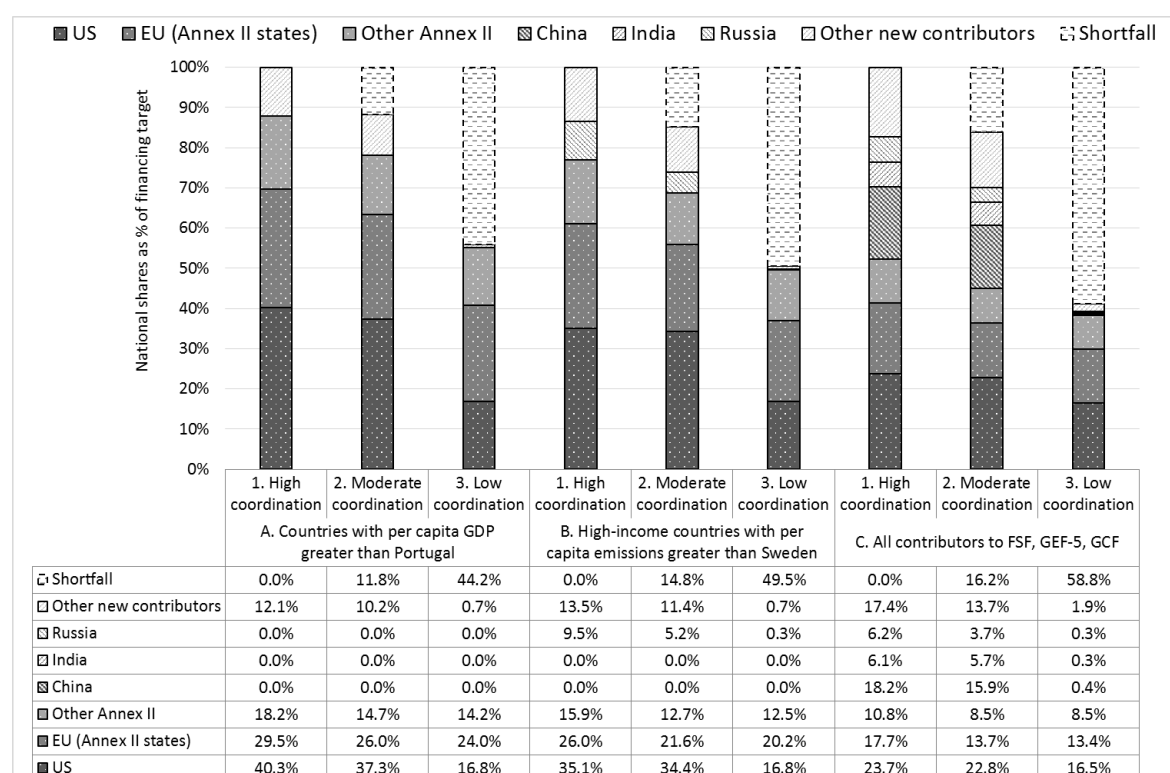
Figure 2 then uses the indicators from

⁶¹ GEF 2010, 148, 150.

Table 2 to extend the three sets of coordination scenarios outlined above to the expanded groupings.

Figure 2. Effort-sharing under different coordination scenarios as contributor group expands

Country or group's share as a percentage of the total required financing effort



Evaluating the Coordination Scenarios as the Contributing Group Expands

The results highlight important interactions between the size of the group and differing degrees of coordination. As with the Annex II scenario, all of the high coordination scenarios result in adequate funding when the group is larger, while the low coordination scenarios produce the greatest shortfall. The larger the group the greater the shortfall from less coordination, since each country's lowest indicator falls as the group size increases.

How does group size affect the fairness of the coordination scenarios? At the very least, the updated Annex II grouping appears substantively fairer than the current Annex II grouping, because it does better at treating comparably capable countries alike. Whether the self-selected group is fairer again is open to debate. This group rates relatively well on procedural fairness and political feasibility, as it involves a voluntary decision by countries to contribute funding for similar purposes. But whether it is substantively fairer depends on the effect of interaction between group size and coordination on effort-sharing measures. One objection in this regard is that, while countries such as India and China have made pledges to the GEF as symbolic gestures of solidarity on global environmental problems,⁶² this should not be taken as an indication that they are prepared to take on funding responsibilities on a footing similar to that of wealthier countries. This objection has particular force under the high and moderate coordination scenarios, where the Annex II share of the total is lower than the non-Annex II share.

Given that a more diverse group of contributors is likely to have more divergent conceptions of fairness,⁶³ the low coordination scenario may therefore seem preferable to the others. But any gains to substantive fairness would come at a large cost to adequacy. For this reason it may be preferable to explore moderate coordination scenarios that recalibrate relative contributions in a more nuanced way, for example by using more progressive indicators (e.g.

⁶² Sjöberg 1994, 30.

⁶³ Roberts and Parks 2007.

emissions or income above a given per capita threshold, as distinct from total income or emissions)⁶⁴ or by taking into account net efforts of countries that are both recipients as well as contributors to funding (as many developing countries are under the GEF).

Options for Expanding the Group

Here we turn briefly to the degree of coordination required to increase group size. The fact that the membership of the Annex II group is so firmly entrenched in the fabric of the climate regime may make it difficult to secure multilateral consensus on a formal expansion of the pool of contributors.⁶⁵ In these circumstances, unilateral pledges by governments that do not yet have formal obligations may hold the best prospects of securing a fairer distribution of the financing burden in the near future. Such an approach would complement recent trends on mitigation efforts, where pledges by developing countries have diminished the practical importance of the Annexes, even though the formal groupings remain unchanged.

Still, as we have shown, merely increasing the group size without coordination on effort-sharing measures may do little to increase adequacy or equity. This situation highlights the need for deliberation between new and existing contributors—as well as within the group of new contributors—to build common expectations about credible measures of effort.

Conclusion

Debates over the merits of top-down and bottom-up approaches to climate governance are likely to intensify as countries work towards a post-2020 climate agreement. Our article has explored ways in which more or less coordinated approaches to sharing the global climate finance effort may affect substantive fairness, taking into account considerations of procedural fairness, adequacy and feasibility.

⁶⁴ See for example Baer et al. 2008.

⁶⁵ Depledge 2006.

Our analysis shows that top-down coordination to set a collective goal and establish multilateral oversight standards and mechanisms will be essential for securing fairness and adequacy in finance. However, our modelling of different effort-sharing metrics suggests that a hybrid approach to determining national efforts will be necessary for advancing these objectives. Moderate coordination may help to reduce distortions in relative efforts as well as shortfalls in overall funding resulting from a bottom-up approach, while still allowing countries a degree of discretion that reflects reasonable differences of perspective on what constitutes a fair share, thus offering greater political feasibility than top-down scenarios.

We have also highlighted the distinctive role that prior pledges play in the financing context—a dynamic less clearly evident in mitigation negotiations. While previous financing pledges arguably have some value as accepted precedents, they often diverge considerably from more credible measures of capacity and responsibility. Giving countries wide discretion to base new pledges on past levels of effort may exacerbate rather than narrow an unfair distribution of resources.⁶⁶

Our analysis of the interaction between different coordination scenarios and the size of the contributing group has shown that expanding the group at least to countries with incomes comparable to Annex II countries would enhance substantive equity. In the interim expanding the group is likely to depend on bottom-up, unilateral pledges rather than a coordinated attempt to redefine the contributing group. However, broadening the group much further may make little difference to adequacy or equity unless the considerably more heterogeneous group of contributors deliberates in order to arrive at credible measures of effort. Thus both stages of the analysis highlight the importance of building common understandings around effort-sharing. In this regard, our findings complement other recent

⁶⁶ Raupach et al. 2014.

analysis on the importance for the climate regime's legitimacy of forming "shared understandings" on principles such as CBDR-RC.⁶⁷

In focusing on effort-sharing, we have isolated one of many elements of fairness in climate finance, albeit a crucial one. Other relevant policy choices include the sources from which funding is drawn, and how funding is allocated among recipient countries. Further research could explore how these choices interact, test a wider range of effort-sharing parameters and group sizes, and incorporate game-theoretic modelling into the coordination scenarios. In addition, further research is required to ascertain if and how private flows—which are expected to comprise a growing proportion of longer-term climate finance—could be attributed to individual countries and inform assessments of relative effort.

Our findings reinforce those of other scholarship that each degree of coordination gives rise to difficult trade-offs among considerations of equity, adequacy and feasibility. Nevertheless, by distinguishing institutional elements that require a top-down approach from those where a hybrid approach may be preferable, analysis of the kind presented here may help negotiations to strike a wise balance, ensuring that contributors do their fair share in helping poorer countries and safeguarding the credibility of the global climate regime.

⁶⁷ Brunnée and Toope 2010.

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