

Framing a Post-2012 Climate Change Agreement: The Quest for ‘Comparability of Efforts’

Nothing could be worse than the fear that one had given up too soon, and left one unexpended effort that might have saved the world.

Jane Addams (Nobel Peace Prize, 1931)

Introduction

A formidable number of complex issues will need to be resolved if a new global agreement on climate change is to be reached to cover the years immediately following the expiry of the first commitment (or ‘compliance’) period under the Kyoto Protocol in 2012.¹ With little doubt, the most contentious issue will be how to allocate the burden of reducing global greenhouse gas (GHG) emissions. In short, there is a need for a fair sharing of the ‘effort’ between countries. But what is fair? What principles and considerations are relevant? And how should such principles and considerations be weighted?

The broad framework for a post-2012 agreement was established, after intensive negotiations, at the 13th conference of the parties to the United Nations Framework Convention on Climate Change (UNFCCC) in Bali in mid-December 2007 (COP 13). Under the Bali Action Plan or ‘Roadmap’ (as embodied in the terms of reference of the ad hoc working group on long-term cooperative action) the parties agreed, amongst other things, to undertake:

Enhanced national/international action on mitigation of climate change, including, inter alia, consideration of: Measurable, reportable and verifiable nationally appropriate mitigation commitments or actions, including quantified emission limitation and reduction objectives, by all developed country Parties, while ensuring the

comparability of efforts among them, taking into account differences in their national circumstances;

Nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner. (UNFCCC, 2007, paragraphs 1, (b)(i) and (b)(ii))

Both the meaning of these paragraphs and their implications for the nature of any new climate change agreement have been the subject of much debate within the international community since late 2007. A particular focus of attention has been the rationale for, and the meaning and implications of, the clause ‘while ensuring the comparability of efforts among them’. This clause has not hitherto been included in international climate change agreements and its meaning has yet to be clarified.² Potentially, however, these apparently bland eight words could be crucial to the framing of a post-2012 agreement. After all, words matter, and some words pack a large punch.

Accordingly, this short article explores the possible interpretations and applications of ‘comparability of efforts’. First, it comments briefly on the reasons for the inclusion of this phrase in the Bali Action Plan, including why it is applied solely to *developed* countries. Second, it explores the meaning of the words ‘comparability’ and ‘efforts’, and thus the possible interpretations of the phrase ‘comparability of efforts’ (or ‘comparable effort’). Third, consideration is given to what the parties at the Bali conference thought they were agreeing to by including the notion of ‘comparability

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of efforts'. Fourth, the article examines how the phrase has been interpreted since Bali and how it relates to well-established principles of justice. Finally, I examine the possible significance of the inclusion of this phrase in the Bali Action Plan and how it might be applied in the context of a post-2012 agreement.

Why 'comparability of efforts'?

The inclusion of the clause 'while ensuring the comparability of efforts among them' in paragraph 1(b)(i) of the Bali Action Plan reflected the unwillingness of some developed countries, most notably the United States, to accept the need for all Annex 1 parties to take on internationally-binding quantified emission limitation and reduction objectives (i.e. Kyoto-type 'responsibility' targets or 'commitments') during the immediate post-2012 period. Instead, the United States was only prepared to endorse something weaker and less demanding, namely 'actions'; hence the inclusion of both 'commitments or actions' in paragraph 1(b)(i). Bear in mind that the United States is alone amongst Annex 1 countries in not having ratified the Kyoto Protocol; it is thus not bound by the 'responsibility' targets for the first commitment period (2008–12) in Annex B of the Protocol and is not part of the Kyoto cap-and-trade system.

What precisely is meant by 'actions' is not spelled out in the relevant paragraphs of the Bali Action Plan, but it is reasonable to assume that 'actions' refers to a wide range of possible policies and measures designed to reduce GHG emissions, with the explicit exception of time-specific, internationally-binding emission reduction targets. Examples of such policies and measures include domestic carbon taxes or emissions trading schemes, targets for renewable energy production, biofuels targets, energy efficiency targets, intensity targets, and policies and measures to reduce deforestation and agricultural emissions. They might also include policies and measures designed to assist other countries to reduce emissions, via technology transfers, financing and research and development.

From a negotiating perspective, the unwillingness of a single significant Annex 1 party to take on internationally-binding, Kyoto-type targets for a second commitment period poses a serious dilemma for the global community. If a large emitter, like the United States, is not prepared to commit to binding emission reductions, the political incentives (and probably also the economic incentives) for other developed countries to take on stringent responsibility targets will necessarily be weakened. After all, the exclusion of a major developed country runs the risk of undermining the environmental effectiveness and economic efficiency of any new climate change agreement while at the same time making it much harder for political leaders across the developed world to secure the support of their legislatures and electorates for domestic action to mitigate climate change

(see Garnaut, 2008a, 2008b). In short, when collective action is a prerequisite for successful policy action, free-riding by a significant player poses huge policy risks.

It is these considerations that prompted the parties at COP 13 in Bali to seek the inclusion of the words 'while ensuring the comparability of efforts among them'. In a context where the United States, as the largest emitter in the developed world, was only willing to undertake 'actions' rather than 'commitments' beyond 2012 the other parties wanted to ensure that any actions by the United States to reduce its domestic emissions would, in aggregate, be sufficient to render any new agreement environmentally effective, broadly equitable and politically feasible. In effect, therefore, the United States would need to commit in some credible way to implementing a series of domestic (and international) measures during a second commitment period (whether under Kyoto or a new protocol) that would be seen by the rest of the world as constituting a fair share of the global mitigation burden. Put differently, a new, environmentally effective global agreement may not be politically feasible unless the United States is prepared to implement explicit measures that are broadly similar in nature, scope and scale

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to the 'commitments' – in the form of internationally-binding responsibility targets – being taken on by other developed countries (or at least the overwhelming majority of developed countries). The words 'comparability of efforts' sought to give expression to this notion. Had the United States been prepared to take on 'commitments' rather than 'actions', the phrase 'comparability of efforts' (or similar wording) may not have formed part of the Bali Action Plan.

Four other points are worth noting briefly at this juncture. First, while the phrase 'comparability of efforts' (or 'comparable effort') has not previously been incorporated into an international climate change document, such as the Bali Action Plan, similar wording has been used in the international climate change context for some years. For instance, Ashton and Wang (2003) identify 'comparability of effort' (note the singular 'effort' rather than the plural 'efforts') as one of 'five dimensions' of equity in a collection of essays on post-2012 arrangements published by the Pew Center. They interpret the phrase to mean that those countries 'with similar circumstances should undertake a similar degree of effort' and note that this links to other dimensions of equity,

most notably the ‘capacity’ to act (or relative wealth). This point will be discussed below.

Second, the clause ‘while ensuring the comparability of efforts among them’ applies only to developed countries; it is not included in paragraph 1(b)(ii). Hence, developing countries are excluded. The reason for this is that a number of large emerging economies opposed the inclusion of these words in paragraph 1(b)(ii) because of the possible implication that some developing countries (i.e. those with relatively high per capita incomes and/or high per capita emissions) should do more than others. At some stage, however, differentiation between the burdens accepted by developing countries to limit, and ultimately reduce, their emissions will be necessary, and such differentiation will need to be based on well-established principles – above all, principles of distributive justice. If the clause relating to ‘comparability of efforts’ were to prove helpful in fashioning an acceptable post-2012 agreement, at least in relation to the roles of developed countries, it is likely that pressure will grow for the application of this provision to developing countries in a future climate change deal.

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Third, the inclusion of the word ‘actions’ in paragraph 1(b)(i) constitutes a significant weakening of the Kyoto policy framework, under which all Annex 1 parties were expected to take on internationally binding ‘commitments’. Put bluntly, there is a risk that the policy measures agreed for a second commitment period will be even less environmentally effective. Further, if the United States insists on taking ‘actions’ rather than making ‘commitments’, other developed countries (e.g. Canada, Japan and Russia) may seek to follow suit. In these circumstances, the global policy framework for addressing climate change, patiently crafted over the years 1992–2005, would be put at risk.

Fourth, the inclusion of the word ‘efforts’ in paragraph 1(b)(i) has been seen by some observers as constituting another departure from, and weakening of, the Kyoto framework. This is because ‘efforts’ can be interpreted to mean merely striving towards a goal rather than the actual achievement of desired results or outcomes. I will consider this point further below.

Defining ‘comparability of efforts’

In order to explore the possible meanings of ‘comparability of efforts’, it is helpful to examine what is meant by ‘comparability’ and ‘efforts’. According to the Oxford English

Dictionary, the word ‘comparability’ has Latin roots (*comparo*) and is closely linked to the words ‘compare’, ‘comparable’, ‘comparative’, and ‘comparison’. The prefix ‘com’ (or *cum* in Latin) means ‘with’, ‘together’ or ‘jointly’, while the Latin word *par* refers to ‘equality’ or ‘likeness’.

Accordingly, ‘comparability’ embraces a number of ideas. The first is the notion that two or more things (e.g. items, objects, ideas, etc.) are capable of being compared; that is, they have qualities that render it possible for meaningful comparisons to be drawn between them. Such qualities could include, for instance, matters of size or magnitude (e.g. scope, scale, density, weight, etc.) or matters of value (e.g. beauty, moral worth, monetary value, etc.). The second is the notion that the things being compared are not merely capable of comparison, but are also actually *comparable*; that is, they are alike or similar in some relevant respect. For instance, they might be of similar size or weight, or similar value or worth, or of a similar standard or quality. *Similar*, in this context, does not necessarily mean exactly the same, identical or equal in some crucial respect. Nevertheless, as

noted above, the Latin word *par* also means equal, so in many situations referring to objects as being *comparable* may well imply that they are equal, if not in every respect, then at least in some relevant way. Thus, we might say that two essays are of a *comparable standard*, by which we would mean that they were not merely capable of being compared but they are also of a broadly equal standard or very similar in quality. In the policy sphere, the word ‘comparability’ is employed in a variety of contexts, most notably industrial relations (e.g. pay comparability) and in relation to statistics (i.e. data comparability).

The noun ‘effort’ (and the plural ‘efforts’) derives from the Latin prefix *ex-*, which means ‘out’, and *fortis*, meaning ‘strong’ or ‘force’. In the contemporary context, making an effort is generally thought to mean an earnest, vigorous or strenuous attempt or an activity being undertaken by exertion or hard work, whether physical or intellectual. Hence, we talk about people making an effort (or efforts) to complete a task, or perhaps failing to make the necessary effort. But ‘effort’ can also refer to an achievement or accomplishment. For instance, we might say that a particular book was the author’s *best effort* thus far or that a person’s efforts were not in vain. In both cases, we would be implying that something had been achieved – i.e. there had been more than a mere expenditure of effort with nothing to show for it.

Nevertheless, when the word ‘effort’ is invoked the most likely implication is that something is in process (or that work is being undertaken or an attempt is being made), rather than that a worthy result or positive outcome has been, or will be, achieved. Indeed, in the discourse on social (or distributive) justice, the principle of effort is typically distinguished from other desert-based principles, such as merit (or achievement) or contribution (see Feinberg, 1973, pp.112-17). Hence, if

we decided to reward people for their *effort*, as opposed to their effective *contribution*, we would be seeking to assess how hard they had worked rather than what they had actually produced as a result of their labours. For various reasons, attempts to measure the amount of exertion, and thereby assess the relative effort made by different people, can be very difficult.

What do these varying definitions imply for the meaning of the clause ‘while ensuring the comparability of efforts among them’? First, it is evident that the clause is open to a number of possible meanings, depending on how the words ‘comparability’ and ‘efforts’ are interpreted. With the various definitions in mind, as discussed above, there are at least six possible options (see Table 1). A minimalist interpretation of the clause would be that any expenditure of effort (or efforts) by developed countries to reduce their GHG emissions must be amenable to meaningful comparisons, but nothing more. There would be no requirement to ensure that the efforts in question were similar or equal in some respect, or that they actually produced the desired results. Against this, a maximalist interpretation would be that any agreed efforts by developed countries to reduce their emissions must be equal (or equivalent) in some relevant respect, and that this equality refers to a desired end state (or outcome) rather than merely the equal exertion of effort (somehow measured). Between the minimalist and maximalist interpretations there are four other possibilities, as shown in Table 1.

Bear in mind that the six options identified in Table 1 are essentially high-level or conceptual in nature. Within each option it would be possible to identify a range of practical ways in which the parties to the UNFCCC could give expression to the quest for ‘comparability of efforts’. As discussed later, for instance, there are many ways in which the notion of equal effort might be applied.

What did the parties mean by ‘comparability of efforts’?

It is not entirely clear what each of the parties involved in drafting the Bali Action Plan thought they were agreeing to when they supported the inclusion of the clause ‘while ensuring the comparability of efforts among them’. The evidence suggests, however, that different parties may well have understood the clause in different ways. While it is doubtful that either the minimalist or maximalist interpretations drew much support, it is equally probable that there was no clear majority for any one of the other possible broad interpretations – to the extent that these options were actually identified and discussed.

In all probability, the clause only proved so widely acceptable because it is relatively ambiguous and thus open to a range of different (and potentially equally valid) interpretations. Had there been an attempt to define (or narrow the possible range of definitions of) the clause at COP 13, it might well have died a quick death. At the same time, the choice of the word ‘efforts’ over, say, ‘results’ was no doubt viewed by many of the parties and observers as a deliberate and intentional weakening of the Kyoto framework, in the

sense that it opened up the possibility of developed countries undertaking ‘actions’ (as opposed to ‘commitments’) that could be judged (somehow) on the basis of the effort expended rather than the outcomes achieved. It is also likely that few of the parties interpreted *comparability* to mean *equal*, not least because the notion of equality sits uncomfortably with the construction of the relevant paragraph in the Bali Action Plan – which concludes ‘... comparability of efforts among them, taking into account differences in their national circumstances’. If ‘national circumstances’ are to be given weight, then strict equality (or any kind) is not an option. In any event, to the extent that some of the negotiators had *equality* (rather than, say, *similarity*) in mind, they would have been aware of the many possible forms of equality (e.g. equal percentage emission reductions by all developed countries, equal per capita emission reductions, etc.).

Table 1: Possible interpretations of ‘comparability of efforts’ in relation to mitigating climate change

The meaning of comparability				
		Able to be compared	Similar/alike	Equal/equivalence
The meaning of efforts	Expenditure of effort to reduce emissions	The efforts of the parties are able to be compared	The efforts of the parties are similar (on some relevant dimension)	The efforts of the parties are equal (on some relevant dimension)
	Achieving a result, in terms of reduced emissions	The efforts of the parties achieve results that are able to be compared	The parties achieve similar results (on some relevant dimension)	The parties achieve equal results (on some relevant dimension)

To the extent that the parties had any common understanding of the clause it is likely that they interpreted it to mean that all developed countries (including any that chose not to ratify a new climate change agreement) should ‘pull their weight’ and make a ‘fair contribution’ to the collective endeavour to reduce emissions. In other words, free-riding would not be acceptable, whether ethically, environmentally or politically. Similarly, it was probably envisaged – and this is certainly captured by the use of the plural *efforts*, as opposed to the singular *effort* – that any agreed actions and commitments should be viewed holistically. That is to say, in comparing the various policy measures being taken by countries to mitigate climate change during a second commitment period (including internationally-binding and non-binding measures) it would be important to consider the measures in question as a total package. The question would not simply be whether this particular target for this particular country was fair, but whether the particular packages of commitments and/or actions by particular countries were

fair relative to the packages of measures being taken by others.

How, then, should ‘comparability of efforts’ be interpreted and applied?

Since COP 13 in Bali, various contributions have been made to the debate over how the clause ‘while ensuring the comparability of efforts among them’ should be interpreted (e.g. see Helme, 2008; Schmidt et al., 2008). Not surprisingly, it has been suggested that the clause means ‘equal treatment of equal countries’ or that ‘countries in similar circumstances should make similar contributions’ (Schmidt et al., 2008). Such an approach resonates with the Aristotelian principle of comparative justice, also known as the principle of like treatment. This states that like cases should be treated alike and different cases differently, in direct proportion to the

... the Garnaut Review suggests that emissions allocations per capita should be equalised by 2050, with the process commencing in 2013 and taking a relatively linear path.

differences (or inequalities) between them (Feinberg, 1973, pp.99-100). This principle is reflected in the more modern conceptions of vertical and horizontal equity which hold that those who are the same in all morally relevant ways should be treated the same while those who are different in some morally relevant manner should be treated differently (Miller, 1976).

But while the principle of like treatment has significant merit and, indeed, wide appeal, it is entirely *formal* (or formalistic) in nature. It merely tells us to treat like cases (or countries) alike; it does not supply a basis upon which to decide the relevant kind or degree of likeness; nor does it provide guidance on how we should vary our treatment to reflect different kinds or degrees of unlikeness (i.e. how the principle of proportionality should be applied). In order to give the principle real content, and thus enable it to be applied meaningfully in a particular context, it must be supplemented with *material* principles of justice. That is to say, we need criteria for determining whether something is alike or not and which differences are relevant. In terms of climate change mitigation by developed countries, the relevant issues are: what criteria (or material principles) should be used for making inter-country comparisons, how should such criteria be weighted and applied, and how should relevant differences between countries (i.e. ‘national circumstances’) be taken into account?

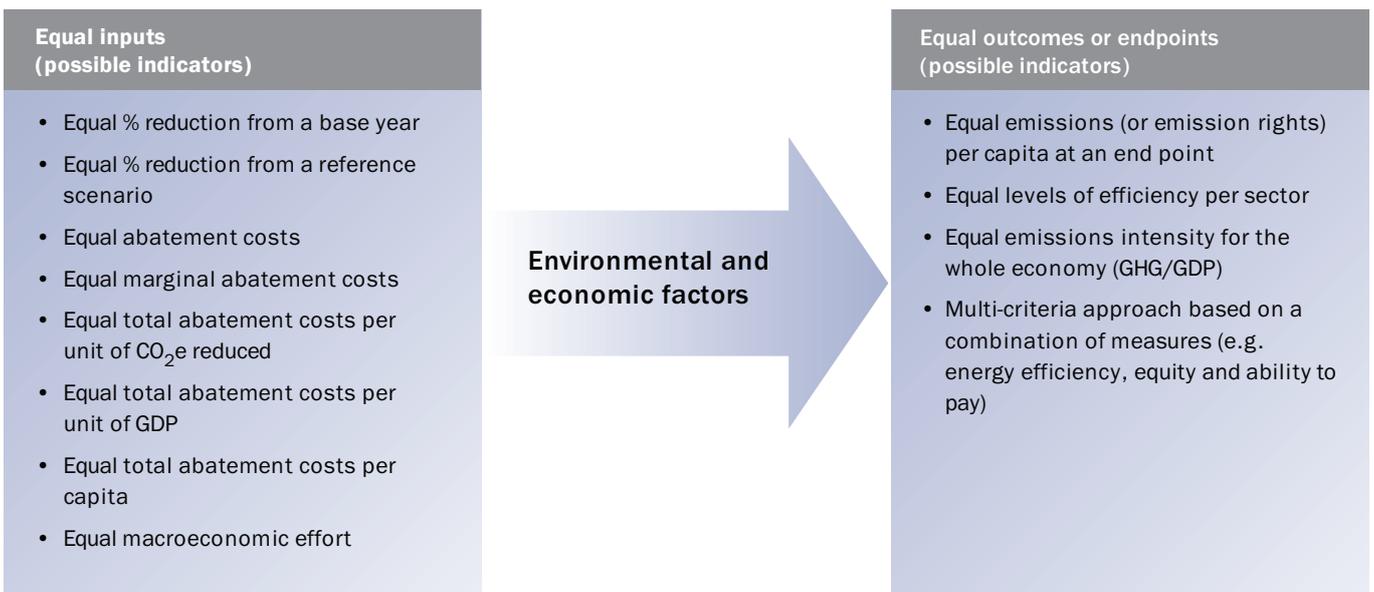
There are two related steps in addressing this issue, one largely procedural, the other distributive. From a procedural perspective, as noted earlier, ‘comparability of efforts’ implies

that any *efforts* must be measurable against one another. For example, it might require that all developed countries measure their emission reductions from a given base year, use a common metric (e.g. the same Global Warming Potentials), or embrace common targets (e.g. national or sectoral). In this sense, the inclusion of ‘comparability of efforts’ in the Bali Action Plan reinforces the requirement (earlier in the same paragraph) for ‘measurable, reportable and verifiable ... commitments or actions’ and sets a limit on the variability of commitments and/or actions that developed countries can take; only those policies that can be meaningfully measured and compared can be included. Plainly, this limits the flexibility that countries have in choosing the nature of their ‘efforts’ (whether these be internationally-binding or not). For example, without this constraint, countries could readily commit to, say, funding new research on clean technologies in place of making emission reductions. In practice, however, it is likely to be difficult to measure the efficacy of such research efforts or compare them meaningfully to the impact of emission reductions.

From a distributive perspective, criteria are needed to determine when two (or more) countries are similar (or alike) and when they are not. In relation to climate change, a number of material principles have been suggested over the years, including equality, historical responsibility (or contribution to the problem), capacity (or wealth), need (or basic needs), welfare costs and monetary costs (see Ashton and Wang, 2003; Kengmana and Boston, 2008). There is not the space here to explore such principles in detail, but it is important to note that there is no consensus, within either the scholarly or diplomatic communities, on their relative importance. There is, however, reasonable widespread support for the principle of equality – in the sense that each person, irrespective of their nationality, should have an equal right to emit GHGs and hence that all countries should (at some point in the future) receive equal per capita emission allowances, provided there are no offsetting considerations. This principle, incidentally, provides the primary basis for the proposal known as ‘contraction and convergence’ (see Kengmana and Boston, 2008). It also underpins the argument expounded by the Garnaut Climate Change Review that there should be a gradual convergence, covering all countries, to equal per capita allocations by around 2050 (see below, and Garnaut et al. in this issue of *PQ*).

If the goal were to equalise *efforts* between developed countries, how might this be achieved and what metrics should be employed? There are a variety of ways of approaching such issues. For instance, Schmidt et al. (2008)³ distinguish between two broad ways of conceptualising comparability and applying notions of equality to climate change mitigation (see Figure 1). On the one hand, countries could contribute comparable inputs towards the objective of reducing emissions – that is, inputs such as costs could be

Figure 1: Equal inputs versus equal outcomes



Source: Primarily derived from Schmidt et al. (2008)

of a comparable size;⁴ on the other hand, countries could take on ‘commitments’ or ‘actions’ with the aim of achieving comparable end-points or outcomes.⁵ Since countries face different environmental and economic conditions and these have impacts on the efficacy of inputs, contributing equal inputs need not lead to achieving equal outputs. Likewise, committing to equal outcomes does not imply that countries will face equal costs in achieving these targets.

As highlighted in Figure 1, there are a variety of ways in which ‘equal inputs’ and ‘equal outcomes’ (or ‘end-points’) could be interpreted. A detailed analysis of each of these options, and their related metrics and implications, is beyond the scope of this article. But various points are worth highlighting. First, some of the suggested options are not mutually exclusive. A combination is thus possible (and might indeed be preferable). Second, most of the suggested end-points would not be possible to achieve by the end of the next commitment period (e.g. 2020). In these circumstances, some form of agreed milestones would be required. Third, the different options imply significantly different emissions paths for Annex 1 countries during the next commitment period. This is bound to colour the attitudes of the respective parties to the relative merits of such options. Fourth, while each of these approaches has potential advantages and disadvantages, some are clearly more problematic (and controversial) than others (e.g. because of data limitations or the implications for how the mitigation burden would be shared).

Quite apart from this, there is the question of how the application of the concept of ‘comparability of efforts’ during a second commitment period might relate to the longer-term quest for large global emissions reductions (e.g. 50–85% below 2000 levels by 2050). It will be important, for example, that whatever is agreed in relation to a second commitment period is broadly consistent with longer-term policy goals,

both in relation to an overall stabilisation objective for GHG concentrations (and the emissions reductions required to achieve this objective) and the respective contributions of the various parties to achieving the agreed stabilisation goal. With this in mind, let us suppose that, subject to certain provisos, the concept of comparable effort is taken to be consistent with the view that the entitlements of countries to emit GHGs should be linked increasingly to the respective size of their populations, with an eventual policy framework based on the principle of equal per capita allocations (i.e. emission rights would be equalised on a per capita basis). Let us also assume that emission rights will be tradable and thus actual emissions per capita will vary – depending, for instance, on the relative wealth and economic structures of different countries.

What might such an approach mean for different countries? The proposals in the supplementary draft report of the Garnaut Climate Change Review (Garnaut, 2008b) provide some possible answers. Specifically, the Garnaut Review suggests that emissions allocations per capita should be equalised by 2050, with the process commencing in 2013 and taking a relatively linear path. It also suggests two possible stabilisation targets – 450 and 550 parts per million (ppm) CO₂ equivalent. Tables 2 and 3 summarise the magnitude of the emissions reductions required (relative to 2001 levels) to achieve such targets, first in relation to total emissions per country and second in per capita terms. They also include target reductions for 2020 – a possible date for the end of the second commitment period (assuming there is one).

In terms of parameters, the Garnaut Review assumes that emissions were 35.3 GtCO₂ equivalent in 2001. With the global population being approximately 6.15 billion at this time, emissions were about 5.74 tonnes per capita. Mid-range projections point to the global population reaching about 9

Table 2: Emissions entitlement allocations for 2020 and 2050 relative to 2001: total emissions by country

	450ppm CO ₂ equivalent		550ppm CO ₂ equivalent	
	2020 over 2001	2050 over 2001	2020 over 2001	2050 over 2001
World	29%	-50%	40%	-13%
Developed	-31%	-86%	-15%	-76%
Australia	-25%	-90%	-10%	-80%
Canada	-45%	-89%	-33%	-80%
EU25	-30%	-82%	-14%	-69%
Japan	-41%	-86%	-27%	-75%
USA	-28%	-89%	-12%	-81%
Developing	85%	-14%	91%	50%
China	195%	-45%	210%	-4%
India	97%	90%	98%	230%

Source: Garnaut (2008b, p.18)

billion in 2050. Hence, if aggregate global emissions are to be cut by 50% by 2050 (probably the bare minimum required to meet the lower stabilisation target of 450ppm), per capita emissions will need to fall by 66% (to about 1.95 tonnes).

Three matters deserve particular mention. First, the decision as to whether population growth projections should be included or excluded in assessments of 'comparable effort' will have substantial implications for individual countries – and thus their respective post-2012 mitigation burdens. The ramifications for countries where rapid population growth is likely (e.g. India) are particularly significant. Second, on a per capita basis, the emissions reductions required by *developed* countries by 2050 to meet both stabilisation targets are very large. But interestingly, the magnitude of the reductions does not vary greatly across the developed world. The situation is rather different, however, for the target date of 2020. For instance, to meet the lower of the two targets (i.e. 450ppm), Canada would need to reduce its emissions per capita by around 54% (or 45% overall), whereas the equivalent figures for the EU25 are 33% and 30%. Third, neither of the two stabilisation targets can be achieved without reductions (relative to 2001 levels) by *developing* countries on a per capita basis. Moreover, to meet the lower of the two targets, China will need to make substantial reductions on 2001 levels, and this implies even greater cuts relative to current emissions levels (given the rapid growth of emissions in recent years). Put bluntly, this means that any attempt to limit the notion of 'comparable effort' (and related considerations of distributive justice) to developed countries is misplaced.

The Garnaut Review does not include New Zealand in its analysis. However, the emissions reductions required (in both aggregate and per capita terms) are relatively easy to calculate, at least for 2050.⁶ To achieve the lower stabilisation target, per capita emissions will need to fall from about 18.8

Table 3: Emissions entitlement allocations for 2020 and 2050 relative to 2001 on a per capita basis

	450ppm CO ₂ equivalent		550ppm CO ₂ equivalent	
	2020 over 2001	2050 over 2001	2020 over 2001	2050 over 2001
World	4%	-66%	14%	-41%
Developed	-37%	-88%	-22%	-79%
Australia	-40%	-95%	-30%	-90%
Canada	-54%	-92%	-43%	-86%
EU25	-33%	-82%	-17%	-69%
Japan	-40%	-82%	-25%	-69%
USA	-40%	-92%	-26%	-86%
Developing	-45%	-46%	49%	-5%
China	166%	-50%	179%	-13%
India	52%	22%	53%	112%

Source: Garnaut (2008b, p.19)

tonnes per capita in 2001 to 1.95 tonnes in 2050, a reduction of 89.6%.⁷ This is slightly less than the corresponding figures for Canada and the US, but greater than for the EU25 and Japan. The aggregate reductions required (86.7%) are less than in per capita terms, but roughly comparable to the *developed* world average. For the higher stabilisation target, New Zealand's per capita emissions would need to fall by 81.9%, slightly above the *developed* world average. Bear in mind that such figures reflect the likely allocation of rights to emit in the context where rights per capita are equalised globally by 2050. Assuming that such rights can be traded across national borders, actual per capita emissions will continue to vary between countries – although almost certainly much less than now.

Conclusion

This article has briefly explored the possible meaning and implications of a key clause in the Bali Action Plan: 'while ensuring the comparability of efforts among them'. I have argued that the clause is ambiguous and open-ended, and that the concept of 'comparable effort' constitutes a formal rather than a material principle. As such, it lacks agreed, substantive content – other than the minimalist notion that any *efforts* (whatever form they might take) must be capable of comparison. This underscores the requirement (elsewhere in the relevant paragraph of the Bali Action Plan) for the 'mitigation commitments or actions' of developed countries to be 'measurable, reportable and verifiable', but it probably does not add a new, distinctive requirement.

The clause's open-ended nature, of course, has both advantages and disadvantages. It enabled the various UNFCCC parties, often with different views and agendas, to embrace a commonly accepted principle – one that accords with the Aristotelian notion of comparative justice. Against

this, it leaves for a future date the much more difficult task of giving this principle some real flesh and bones (i.e. agreeing on relevant material principles and applying them to the challenge at hand). On this reading, then, ‘comparability of efforts’ should not be thought of as a distinct principle of distributive justice, such as equality, need or contribution, but rather as a broad, overarching principle that has the potential to embrace and balance a range of competing material principles (and related policy initiatives).

Whether the inclusion of comparability of *efforts* represents a weakening of the Kyoto framework in relation to the obligations of developed countries remains to be seen. As noted, it is possible to interpret *efforts* as embracing either strenuous activity or the achievement of results (or both). The parties thus have a choice ahead of them, namely whether to focus on measures or indicators that relate to mere ‘striving’ or whether instead to focus on those that relate to measurable results (whether in the form of ‘inputs’ and/or of ‘end-points’). The methodological and political difficulties associated with the former approach are likely, in practice, to ensure that primary attention is given to actual, time-bound results (e.g. specific emissions reductions against a base year). Equally, however, it is likely that the inclusion of the phrase ‘comparability of efforts’ will help draw attention to the need to consider the overall packages of measures being proposed for the post-2012 period, and their respective implications

for different countries, rather than focusing on a single policy instrument or indicator of progress. *Total effort*, in other words, is what matters, and potentially such effort could embrace domestic actions as well as enabling activities in other (especially developing) countries. Nevertheless, to the extent that some developed countries refuse to take on international ‘commitments’ (i.e. responsibility targets) and only agree to nationally appropriate ‘actions’, there are bound to be problems deciding how these respective policies ought to be compared, whether they constitute a comparable effort and how compliance is to be enforced.

- 1 An earlier version of this paper was presented at the Post-2012 Burden Sharing symposium, 29 July 2008, Wellington, jointly hosted by the European Union Centres Network and the Institute of Policy Studies. I would like to thank Ben Gleisner, Lucas Kengmana, Martin Manning and Paule Stephenson for their help in preparing this paper.
- 2 But note that article 4, para 2(a) of the UNFCCC requires the parties to make ‘equitable and appropriate contributions’ to mitigate climate change.
- 3 Helme (2008) also deals with these issues, but since his treatment is similar but briefer than Schmidt et al. (2008) it is not discussed here.
- 4 Where comparable is taken to mean equal when relevant differences are controlled for.
- 5 Note that this terminology differs slightly from the terminology adopted in Schmidt et al. (2008). Most notably, Schmidt et al. refer to equal inputs as ‘equal efforts’, but since countries can make efforts towards outcomes as well, the term ‘equal inputs’ may be preferable.
- 6 Calculating the aggregate and per capita reductions required for individual countries for 2020 is more problematic than for 2050 because the key parameters for 2050 (i.e. total global emissions and equal per capita emissions) are fixed, whereas for 2020 a number of different assumptions can be made about the speed of convergence, and a wider range of factors may affect the obligations of different countries (including the extent to which emissions have grown between 2001 and the commencement date for a post-2012 policy framework).
- 7 In 2001 New Zealand’s CO₂ equivalent emissions were 73.1 million tonnes, the population was 3.9 million and per capita emissions were around 18.8 tonnes. Mid-range projections suggest that New Zealand’s population will reach just over 5 million by 2050.

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