

Justice and Post-2012 Global Climate Change Mitigation Architecture

Introduction

This article¹ considers how justice relates to and informs the structure of international climate change mitigation² architectures under which burdens are assumed by individual states. The argument can be made that the structure of the current global architecture has, to a substantial extent, been determined in the domain of *realpolitik*, not justice. In the domain of *realpolitik*, states seek to maximise their national self-interest based on practical rather than ethical considerations. The more powerful the state, the more able it is to stay outside global regulatory systems if its perception of its national self-interest deems this appropriate. But if this is so, are considerations of justice relevant to the shape of future global climate change mitigation regimes? This article argues that they are.

Some account of justice must, therefore, be given. This will be addressed in part 1. Part 2 will then consider the role principles of distributive justice have played in the development of the current global architecture. In so doing, it will identify an analytical matrix comprised of the twin concepts of *a negotiated hierarchy of differentiation* and an *obligation gap* as a tool for deconstructing climate change mitigation architectures. Using this matrix, part 3 examines how some important models for the global post-2012 architecture build upon or depart from the current model.

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Part 1: Why is justice relevant?

Identification of dimensions of relevance

It is possible to identify three interrelated dimensions in which a concern for justice was and continues to be relevant. First, there is the *moral* dimension. The conclusion of the Intergovernmental Panel on Climate Change (IPCC, 2007, p.9) that there is at least a 90% probability that most of the observed increases in globally averaged temperatures since the mid-20th century are due to anthropogenic greenhouse gas (GHG) concentrations only tells half the story of climate change. The other ‘inconvenient truth’ revealed (IPCC, 2007, p.12) is that, in many cases, the most substantial effects of climate change will be felt by millions of people from countries across Africa, Asia and the Pacific, whose historical path of development has not contributed significantly to this build-up of GHGs and whose citizens’ standard of living and lifestyles do not cause substantial carbon emissions. The issues raised by climate change are thus pregnant with moral concern.

Second, there is the *legal* dimension. The 1992 United Nations Framework Convention on Climate Change (UNFCCC)

is an international treaty. Under article 3(1) of the UNFCCC, equity is identified as a core principle to guide parties in the discharge of their binding commitments under article 4. Central to the UNFCCC is the issue of ‘common but differentiated responsibilities and respective capabilities’ (CBDR). While the principle of CBDR does not, of itself, impose any legally-binding obligation, it has sufficient legal weight to form the foundation for future legal instruments that deal with this problem (Rajamani, 2000, p.124). Rajamani (p.130) aptly describes the CBDR principle as ‘the ethical anchor’ of the developmental process behind the current global climate change architecture. If this principle forms the ethical anchor, then justice forms the ethical material from which the anchor is constructed.

Viewed thus, the role of justice is to constitute the boundaries of the CBDR principle in this developmental process.

Third, there is the *political* dimension.³ Concern with justice enhances the possibility of wide participation by states, particularly from ‘the global south’, in the arrangements made under any future architecture (Grasso, 2007, pp.224-5; Najam, 2005, p.305; Rajamani, 2000, p.123; Ringus et al., 2002, p.1; Shukla, 1999, p.7). Without broad agreement by states that any future global architecture is just and fair, there is likely to be a legitimacy deficit in both the domestic and international arenas that will prove fatal to attempts to build an effective and truly global framework (Pew Centre, 2005, p.11).

Justice, then, is highly relevant. The effectiveness of any post-2012 climate change mitigation architecture will, to a significant degree, be determined by the extent to which concerns with justice across these dimensions restrain the influence of *realpolitik*. Moreover, the ability of justice to restrain *realpolitik* will depend on how alternative visions of justice are reconciled in the development of this architecture.

Justice of what?

While acknowledging that the unequal distribution of power that drives concerns with procedural justice is relevant to the ongoing negotiations regarding a post-2012 policy framework (see Grasso, 2007, p.228; Shue, 1999, p.531), I will focus here on the more substantive considerations of distributive justice. What follows is a necessarily brief overview.

Distributive justice

Conceptually, distributive justice is ordinarily concerned with legitimating the distribution of benefits (usually wealth and income) and burdens within and by political authorities (Feinberg, 1973, p.107).⁴ Distributive justice relates to the incidence of costs and benefits among a group of individuals and is commonly described by the maxim ‘to each his or her due’. This begs the question as to how the dues of any particular individual are to be calculated.

Here, the concept of justice bifurcates into ‘formal’ and ‘material’ principles. The formal principles of justice are twofold. First, where persons are equal in all relevant respects,

their dues are the same and they should be treated in the same way. Second, where a person’s dues depend upon some quantifiable attribute, the amount of benefit to be enjoyed, or burden suffered, should be proportionate to the quantity of the relevant attribute they possess. Material principles of justice relate to answering the question of how each person’s dues are to be assessed (Feinberg, 1973, p.100; Miller, 1976, 21).⁵

Two commonly acknowledged material principles of justice are particularly important in this context, namely:

- to each according to his/her deserts; and
- to each according to his/her needs.

Competing notions of what is equitable or just will depend on perception of – usually short-term – national self-interest

Desert and justice

Desert-based principles of distributive justice denote ‘a relationship between an individual and his conduct, and modes of treatment which are liked or disliked’ (Miller, 1976, p.92). There are different bases for calculating ‘deserts’ (Feinberg, 1973, p.102; Miller, 1976, p.89). They include merit (to each according to his/her merit) and contribution (to each according to his/her contribution). ‘Merit’ focuses on what attributes – typically virtues such as courage or technical skill and ability – a person possesses (Feinberg, 1973 p.192; Vlastos, 1984, p.51). ‘Contribution’ focuses on what a person has done in the past to produce a particular state of affairs.

Need and justice

There is broad acceptance of a linkage to the avoidance of harm (Benn and Peters, 1959, p.142; Miller, 1976, pp.129-31; O’Neill, 1996, p.115). Beyond this, the task of identifying basic needs is controversial. Some see needs as including both natural and socially determined needs (see Benn and Peters, 1959; Townsend, 1983). Others argue that needs remain constant even if increases in the standard of living over time produce more commodities (e.g. televisions) which social pressure may present as ‘needs’ (see Miller, 1976; Braybrooke, 1987).

Part 2: The role of principles of distributive justice in the development of current climate change architecture

The negotiated hierarchy of differentiation under the UNFCCC

Both the preamble to the UNFCCC and article 3 make clear the drafters’ concern in establishing a framework that is just and fair in both the international and the inter-generational spheres. In other words, at its heart the UNFCCC is a mechanism for rendering distributive justice both across

borders and across time. That said, a degree of moral ambiguity as to what is ‘just’ is present (Muller, 2001, p.286). Competing notions of what is equitable or just will depend on perception of – usually short-term – national self-interest (Baer and Athanasiou, 2007, p.12). State perceptions of these interests will diverge greatly (Bodansky, 1993, p.477).

The UNFCCC responds to and moderates this moral ambiguity. At its heart lies the notion that states, while nominally *equal* on the international plane, possess *morally relevant differences* with respect to their responsibility for addressing climate change. The UNFCCC thus embraces the Aristotelian formal principle of justice and sanctions an unequal distribution of climate change mitigation burden. Embedded within it are a set of principles of distributive justice which determine the pattern of distribution of mitigation burden between states.

When measured by the relative level of burden assumed by states under the UNFCCC, a three-tiered structure emerges in which separate, discrete, categories of differentiation are made.

The ordering of these principles represents a *negotiated hierarchy of differentiation*:

- *Negotiated* – there is no inherent hierarchical order of the material principles of justice (Ringus et al., 2002, p.17). The hierarchy that emerged resulted from a process of negotiation and compromise.
- *Hierarchy* – the selected material principles of justice are ranked according to the weight they are to have in determining the level of any particular state’s mitigation burden relative to the burdens assumed by other states.
- *Differentiation* – the effect of the negotiated hierarchy is that states are to be treated differently.

This is not to say that this hierarchy requires that the burden borne by states as a result of the highest ranked principle be exhausted before burdens are imposed as a result of lower order principles. Rather, each principle acts simultaneously, resulting in a balance of commitments (Rajamani, 2001, p.125).

When measured by the relative level of burden assumed by states under the UNFCCC, a three-tiered structure emerges in which separate, discrete, categories of differentiation are made. These will be referred to as first-, second- and third-order differentiations. Driving these differentiations are separate principles of distributive justice. In particular:

- the first-order differentiation is desert-based linked to contribution;
- the second-order differentiation is also desert-based but linked to ability;
- the third-order differentiation is need-based.

The first-order differentiation

For present purposes, the critical point is that achievement of the UNFCCC’s stabilisation objective requires limiting future total global emissions – ideally at a level close to current levels⁶ – if dangerous adverse climatic events are to be avoided. Under the UNFCCC, Annex 1 parties are required to take the lead and bear a greater burden by receiving a lesser share of the future total global GHG emissions allowable in order to achieve the stabilisation objective. In other words, Annex 1 parties ‘deserve’ a lesser share in the future and must therefore take steps to reduce the impact of climate change through mitigation action. Non-Annex 1 parties, by contrast, deserve a greater share of future emissions but such greater licence to emit must be exercised in an environmentally sustainable manner.

While developed countries resisted any suggestion they were to bear the main responsibility (Bodansky, 1993, p.498), the preamble to the UNFCCC (recital 3) nevertheless records the historical contribution of developed states to current emissions levels as the context of their obligation under article 3 ‘to take the lead’ in combating climate change. This points to the first-order differentiation being based on contribution to current levels of anthropogenic GHG emissions.⁷ Furthermore, while both the preamble (recital 6) and article 3(1) also refer to the ‘respective capabilities of the parties’, capability is a characteristic which all parties possess in some measure. Yet article 3(1) requires only some to take the lead in combating climate change. This also suggests that it is the characteristic of historic contribution, unique to Annex 1 developed countries, rather than current ability, which is common to all parties in some form or another, which is given greater weight and which drives the first-order differentiation. Rather, ability as a distinct sub-species of the desert-based principle of distributive justice forms the basis of a second-order differentiation.

The second-order differentiation

At this level of differentiation, the UNFCCC postulates that the ‘just’ distribution of mitigation burden depends on the state’s ability to assist with global efforts to reach the stabilisation objective. It reinforces the first-order differentiation by prioritising the abilities of developed states – typically with greater technical and financial ability – over those of developing states. However, an additional ability-based differentiation is also now introduced, this time *between* Annex 1 parties. While the UNFCCC expressly allows for flexibility for some Annex 1 parties identified as economies in transition so as to ‘enhance the ability of these States to address climate change’ (see article 4(6)), article 3(1) does not identify what the particular ability-related characteristics might be. Much of the focus of the post-UNFCCC development process can be seen as an attempt to identify and agree on just what the relevant and appropriate individual circumstances should be.

Article 4(2)(a) sets the broad parameters of second-order differentiation. These include a state's:

- starting point and approach;
- economic structure;
- resource base;
- available technology; and
- other individual circumstances.

While reference is also made in article 4(2)(a) to various needs, such as the 'need to maintain strong and sustainable economic growth' and the 'need for equitable and appropriate contributions', need in this context is being used as a broad policy parameter applicable to all Annex 1 parties and not as a basis for distributing *different* quantities of burden among them.

The third-order differentiation

The preamble and article 3(1) reflect the truism that all states will possess some ability to contribute to global efforts to reach the stabilisation objective. However, such capability will vary. Countries with large populations but low development levels have the potential ability to contribute by adopting policies and measures that restrict certain aspects of their development (e.g. transport). Often, these same countries have not contributed to the problem and so it seems unjust to impose such a burden on them.

Concern that ability-based distribution may, even after historical contribution is taken into account, nevertheless result in an unjust distribution of burden is reflected clearly in article 3(2) of the UNFCCC. This provides that, in determining the level of CBDR under article 3(1):

the specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change, and of those Parties, especially developing country Parties, that would have to bear a disproportionate or abnormal burden under the Convention, should be given full consideration. (emphasis added)

Furthermore, article 4(7) states that:

[t]he extent to which developing country parties will effectively implement their commitments under the Convention ... will take fully into account that economic and social development are the first *and overriding* priorities of developing country Parties. [emphasis added]

Although not expressed as needs, these 'priorities' clearly take the form of needs. Any burden that would otherwise 'justly' attach to a non-Annex 1 party as a result of the second-order, ability-based distribution criterion is effectively subordinated to a need-based distribution. When viewed from the level of burden assumed, this clearly represents the UNFCCC's third-order differentiation.

Obligation gap

The term 'obligation gap' describes the domestic policy effect of the negotiated hierarchy of differentiation under the UNFCCC.

- *Obligation* – at the end of the day, the UNFCCC is like any other treaty. It is a part of public international law, which imposes binding obligations on states to perform what they have agreed to do in good faith (see Brownlie, 2003, pp.591-2).
- *Gap* – the obligations assumed by states differ in kind and exert differing degrees of force on the particular state's future domestic policy arena in terms of the limitation and reduction of GHG emissions.

Under the UNFCCC, Annex 1 parties accepted additional commitments to the general commitments that all parties made (articles 4(2), 4(1)). In particular, Annex 1 parties committed themselves to taking positive steps by adopting national policies and taking corresponding measures by limiting anthropogenic GHG emissions and protecting and enhancing GHG sinks and reservoirs (article 4(1)). While a 'certain degree of flexibility' was allowed for those Annex 1 parties with an 'economy in transition' (article 4(6)), this flexibility related only to the *implementation* of their commitments, not the *nature* of their commitment to limit GHG emissions. For these states, there is an obligation to implement appropriate policy to achieve this outcome and show they are taking the lead in modifying longer-term emissions trends. The force exerted by the UNFCCC on their future domestic policy is strong.

As a framework document, the UNFCCC sets out the principles that guide the parties in further negotiations undertaken at subsequent conferences of parties.

In contrast, non-Annex 1 parties undertook commitments of a lesser nature. These included:

- the development of emissions inventories (article 4(1)(a));
- the formulation and implementation of national and regional mitigation programmes (article 4(1)(b));
- the promotion of sustainable management (article 4(1)(d)); and
- taking climate change into account when formulating wider policy (article 4(1)(f)).

These obligations are generally much weaker and do not contain the same degree of specificity as to policy outcomes. While national plans must be formulated and implemented which contain measures that 'address' anthropogenic emissions by sources and removal by sinks (article 1(b)), this commitment does not specifically require there to be any limitation in GHG emissions so as to achieve the UNFCCC's overall stabilisation objective. Provided the

domestic policy addresses climate change mitigation in good faith (for example, by prioritising renewable energy sources), this commitment validates domestic policies by non-Annex I parties under which GHG emissions may grow.

Justice and the further development of the UNFCCC architecture

As a framework document, the UNFCCC sets out the principles that guide the parties in further negotiations undertaken at subsequent conferences of parties (COP). The following two were particularly important in shaping the current architecture.

It is important to recognise that there is no inherent hierarchy among the competing principles of distributive justice that preordains any hierarchy of differentiation between states

COP 1: The Berlin Mandate

The Berlin Mandate maintains the basic differentiations of the UNFCCC and, in particular, the first-order differentiation between Annex 1 and non-Annex 1 parties. It is notable for the emphasis placed on the need-based principles of justice which underpin the UNFCCC's third-order differentiation as a means for reinforcing the UNFCCC's first-order differentiation. Need-based justifications such as 'the specific needs and concerns of developing country parties and least developing country parties' (article 1(b)) and the 'legitimate needs' of developing countries in terms of achieving sustained economic growth and eradicating poverty (article 1(c)) dominate the principles designed to guide the development of the global climate change mitigation regime.

The Berlin Mandate directed a process to result in time-bound, quantified reduction and limitation objectives (QERLOs) for Annex 1 parties (article 2(a)) while, at the same time, eschewing the introduction of any new commitments by non-Annex 1 parties (article 2(b)). The principal effect of this extra emphasis on developing-state oriented, need-based distributive principles of justice has been to widen the 'obligation gap' created by the first-order differentiation.

In so doing, the clear intention was to ensure that climate change mitigation burdens assumed by developing countries should not prevent their adoption of policies designed to close the income gap with developed countries. At this level, the UNFCCC architecture expressly endorses equalitarian principles of distributive justice, 'designed to bring those with greater initial burden or deficit up to the same level as their fellows' (Feinberg, 1973, p.111). This contrasts with the non-equalitarian principles of desert (contribution) and desert (ability) which underpin the first- and second-order differentiations

Ability-based principles of distributive justice are also present. The Berlin Mandate refers to the CBDR principle under UNFCCC article 3(1) (articles 1(a), 1(e)). A critical component of the work undertaken subsequently by the ad hoc group on the Berlin Mandate (AGBM) was precisely to develop a bundle of possible relevant characteristics for differentiating *among Annex 1 states* for possible inclusion in the new legal instrument.⁸ The flexibility proposed to be granted to parties with economies in transition in accordance with UNFCCC article 4(6), together with the establishment of Joint Implementation and Clean Development mechanisms, represent instruments by which Annex 1 parties could discharge their obligations under UNFCCC according to their ability.

COP 3: The Kyoto Protocol

The AGBM eventually produced a text for negotiation by parties at COP 3 in 1997 (UNFCCC/AGBM/1997/3/Add.1, 22 April 1997). The work of the AGBM culminated in the adoption at COP3 of a protocol to the UNFCCC – the Kyoto Protocol. The Kyoto Protocol quantifies the commitments made under UNFCCC articles 4(2)(a) and 4(2)(b) by setting a specified schedule of reductions of GHG emissions for Annex 1 parties. This has collective and individualised components. The individualised burdens are derived from a subjective assessment of a state's own capabilities, having regard to their particular circumstances.

Whereas both the UNFCCC and the Berlin Mandate relate to the nature of the mitigation burden assumed by a state, the Kyoto Protocol is significant because it represents the mechanism for determining the *extent* of the burden that any state is to bear as a result of the application of the negotiated hierarchy of differentiation to its particular national circumstances.

Part 3: Justice and the structure of post-2012 policy architecture

The negotiated hierarchy of differentiation and the obligation gap – a matrix for analysis

I suggest that conceptualising climate change mitigation architectures as constituting a negotiated hierarchy of differentiation and resulting in an obligation gap provides a useful matrix for shaping the complex issues that arise in designing any post-2012 policy architecture.

The sort of questions this analytical matrix opens up include:

- Is the current desert (contribution) based first-order differentiation, as reflected by Annex I status, simply too blunt an instrument when patterns of projected future global emissions (particularly the future projections of major developing country emitters) are considered?⁹
- Should the material principles of justice upon which the current differentiations are based be re-ordered or re-calibrated? To what extent should 'need' be prioritised

- over ‘ability’ across all non-Annex 1 parties, and for how long, particularly for those developing states such as China with large populations and rising per capita emissions? Should some forms of ability (perhaps sector based) be prioritised over historical contribution? If so, which?
- Should principles of distributive justice not currently informing the shape of the global architecture (e.g. equality, effort to date, etc.) be introduced? One recent study suggests that, although efforts vary, of the G8 countries, none has yet implemented measures commensurate with a goal of avoiding an increase in the global mean surface temperature of more than a 2°C (Hoehne, Graus and Ellermann, 2007, p.34).
 - Should some ‘needs’, such as the need to ensure adequate food, shelter and health, be expressly recognised and given greater emphasis? If so, in what way? How are ‘needs’ to be measured – by reference to some agreed level of the particular social good in question or by proxy measurements such as GDP?¹⁰
 - Is the current obligation gap too wide? Patterns of global emissions mean that on a business-as-usual scenario, while short- and medium-term levels of GHG emissions can be expected to be attributable to emissions from the ‘industrialised West’, this will not necessarily be the case in 2050. If so, to what extent should a major emitter developing country’s domestic policy choices be subject to less constraint than states of the industrialised West?¹¹

It is important to recognise that there is no inherent hierarchy among the competing principles of distributive justice that preordains any hierarchy of differentiation between states; nor does any particular type of mitigation commitment automatically flow from the application of any particular principle of distributive justice. While the differentiation informs the pattern of distribution of the mitigation burden between states (broadly, do states assume an equal amount of burden or, if not, which states assume more and which less?), the nature of the mitigation commitment that results from the pattern of distribution is an entirely free-standing matter. Ethical considerations apply to both issues.

While it may be that there is no single, objective answer to the question, what constitutes a ‘just’ distribution of climate change mitigation burden post-2012, principles of distributive justice can usefully inform the ongoing negotiations as to the post-2012 burden sharing agreement. Applying considerations of distributive justice to the twin dimension suggested here will, I believe, allow for a more nuanced mitigation architecture to emerge – one that has greater chance of being more widely accepted as ‘just’, and thus being more effective in meeting the UNFCCC’s climate stabilisation objective.

Analysis of some suggested models for the post-2012 policy architecture

There are a plethora of suggested proposals for burden sharing in the post-2012 environment.¹² Commentaries on them are equally prevalent (see, for example, Baer and Athanasiou, 2007; Bodansky et al., 2004; Boeters et al., 2007; and Hoehne et al., 2007). It is simply not possible to review them all here. Accordingly, I will focus on three models:

- contraction and convergence;
- multi-stage approaches; and
- sectoral approaches.

A brief discussion of the essential features of each type will be given, in order to shed some insight on how competing principles of justice are utilised. In all cases, unless otherwise stated, these descriptions are taken from the summaries set

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out in Hoehne et al. (2007, pp.13-20).

Contraction and convergence (C&C) and common but differentiated convergence (CDC)

C&C and CDC models are driven by the idea that states are ultimately entitled to an equal per capita allocation of GHG emissions. This emphasis on equality between states around a shared characteristic (i.e. population) is their basic organising principle of justice. Mitigation burdens are not distributed on desert-based principles because the essence of these models is that all states ultimately are due the same per capita share of future emission allowances. As such, these models represent something of a paradigm shift from how concern with distributive justice is dealt with under current arrangements, which emphasise fundamental moral *differences* between states. Moreover, no obligation gap arises under the C&C and CDC models; each state has an immediately binding emission target designed to equalise per capita emissions over time.

Plainly, however, equal per capita emissions cannot be achieved by the stroke of the pen and both C&C and CDC envision a relatively lengthy period over which equalisation/convergence will take place. The amount of temporal latitude is determined by the maximum level of GHG concentrations judged acceptable and the convergence time frame. Although negotiations over the convergence date may well involve intense debates as to how long developing states require to converge, the principle of need plays a lesser, more transient role. It does not exempt those states with development needs from assuming binding commitments. It simply delineates the

length of time these states can entertain a rise in per capita emissions. Once convergence is reached, the ‘need’ ceases to play any part in shaping the distribution of mitigation burden. While the CDC model does give some emphasis to historical contribution in that it maintains the Annex 1/non-Annex 1 distinction, as with need, this differentiation also has a weaker role than under present arrangements. It does not result in weaker commitments, but rather makes the assumption of commitment contingent on the reaching of the agreed threshold.¹³

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Multi-stage approaches¹⁴

As the name suggests, under such approaches, states participate in a global framework but at different stages. Each stage involves the assumption of an increasingly stringent mitigation commitment. A comprehensive example of this model is the Climate Protection Programme’s South–North Dialogue proposal (Climate Protection Programme, 2004). The SND proposal divides states into six separate categories based upon status under the UNFCCC and development status, with each category falling into a particular stage.¹⁵ At one end of the spectrum are Annex I parties, which have absolute reduction targets. At the other end are least developed countries, which have no quantitative reductions commitments. The SND proposal utilises three main concepts:

- *Responsibility* – contribution to temperature increase. The larger the degree of responsibility, the more onerous the mitigation commitment assumed by the state in question.
- *Capability* – the ‘financial and socio-economic wherewithal’ to help overcome the climate problem. Those with greater capability fund sustainable development in states with low capability.
- *Potential* – the opportunities for mitigation within the economy through GHG reductions or pre-empting growth through cleaner development. The greater the potential, the higher the domestic reduction commitments.

Driving this proposal is a complex, four-tiered system of differentiation. In terms of the underlying principles of justice, noting the moral and practical necessity of deep cuts in emissions by Annex 1 states, the first-order differentiation is accordingly desert (or contribution) based, as under the UNFCCC. Beyond this, the picture becomes blurred. ‘Need’ is employed to moderate both capability and potential.

For example, the model recognises that a certain level of emissions may well be necessary to guarantee ‘a decent life for poor people’. However, under the SND proposal, need-based principles of justice do not assume any independent role but instead are subsumed within broader considerations of capability and potential. Rather than trump outright any pattern of distribution of mitigation burden that might otherwise arise from capability or potential-based considerations, ‘need’ acts to moderate their effect as part of the complex interplay between the three nominated criteria.

In this sense, the South–North model stands in stark contrast to the current architecture.

The effect of this moderating role is reflected in a more nuanced range of mitigation burdens. The model recognises that a state’s social and development ‘needs’ change and thus, by definition, both their mitigation potential and capability change over time. States are therefore able to move between the categories as they meet or fall below thresholds in all three criteria. Insofar as ‘need’ impacts upon the mitigation capability or potential of any non-Annex 1 party, this is capable of giving rise to a graduated level of commitment. The SND proposal therefore seeks to close the obligation gap that need-based principles of justice produce under the current framework, at least in relation to some non-Annex 1 parties.

What seems clear is that, in contemplating a more nuanced approach to issues of responsibility in which some current non-Annex 1 parties assume absolute limitation or reduction targets, the model extends the application of desert-based distribution beyond that of the current framework.

Sectoral approaches

Sectoral approaches fall into three broad categories: transnational, intergovernmental and sectoral crediting (Boston and Kengmana, 2007, pp.161-2). Each has the common goal of addressing competitiveness-at-risk concerns by imposing common rules on identified sectors, and products within sectors, across all countries (Hoehne et al., 2007, p.18).

In terms of the organising principles of justice, a number of points arise in relation to sectoral approaches. First, in general terms, sectoral approaches differ from other models of possible post-2012 climate change mitigation architectures in that the unit of analysis is not the state, as such, but a particular sector of economic activity within the state. Distribution of mitigation burden is, therefore, contingent on the presence of the economic activity within the territory of the state and this represents the first-order differentiation under such models.

Second, in contrast to the present architecture, the first-order differentiation under any sectorally-oriented post-2012 architecture utilises ability-based principles of distributive justice. Bodansky (2007, pp.9-11) identifies three categories of factors for evaluating which sectors represent the best

candidates for inclusion under this approach, namely environmental, economic and negotiation/participation factors. The common characteristic of these factors is that they all relate to the capability of any particular sector to contribute to global efforts to achieve the UNFCCC's stabilisation objective.

Third, whereas transnational and intergovernmental approaches do not differentiate on the basis of historical responsibility (contribution), the sectoral crediting mechanism is very much intended to reflect this. For sectoral crediting approaches, which retain the Annex 1/non-Annex 1 distinction, this represents a second-order differentiation. However, any distribution of mitigation burden on the basis of desert (contribution) occurs only *after* a prior differential distribution of burden on the basis of desert (ability). This represents an inversion of the hierarchy under the current architecture.

Fourth, sectoral agreements are very flexible devices, able to include almost any kind of mitigation commitment (Bodansky, 2007, p.3). As such, they represent an ideal vehicle for introducing more graduated normative force into the mitigation burden assumed by states than presently exists. Moreover, each state would possess differing amounts of the relevant distributive characteristic, i.e. the presence of economic activity in the particular sector. It is entirely possible for there to be differing types of commitment not just between states but between sectors within states. This demonstrates the potential responsiveness of sectoral approaches to the particularities of a state's unique emission profile. As such, these approaches arguably represent a more viable mechanism for calculating the 'dues' of any particular state in terms of the climate change mitigation burdens it assumes.

Finally, depending on the precise structure of any sectoral agreement, need-based principles of justice may not have the same prominence as under the current architecture. Under intergovernmental and transnational agreements, developmental 'need' does not operate so as to exclude a developing country from the regime, nor result in any difference in the type of mitigation commitment assumed. Insofar as sectoral crediting may result in some difference in the distribution of burden, this results not from need, but from merit-based concerns linked to historical responsibility. This is not to say that need-based principles of justice will necessarily be wholly absent from the design of any sectorally-based post-2012 architecture. Considerations of 'need' may well play some role in determining the degree to which voluntary pledges are assumed in relation to some sectors of economic activity.

Conclusion

While much attention is placed on the science of climate change in the design of a post-2012 policy architecture, and rightly so, it is equally important not to lose sight of justice. After all, the requirements of justice – and especially the immorality of a business-as-usual scenario – remind us why

we must take the scientific evidence seriously.

This article has argued that a concern for justice is at the heart of the UNFCCC, and must continue to play a significant role in determining how mitigation burdens are distributed post-2012. Whether any proposed policy architecture is accepted by states to be both internationally and inter-generationally 'just' will be critical in ensuring its wide acceptance, and thus the regime's overall effectiveness in terms of reducing GHG emissions.

But, as the preceding analysis has highlighted, there are a number of different material principles of distributive justice. There are also competing models for achieving global emission reductions, each of which gives somewhat different weightings to these principles. The fact that there are a number of competing principles and models points to the need for compromise and accommodation, in terms either of the degree of differentiation between states or of the nature of the obligations assumed on the basis of that differentiation. Plainly, securing an acceptable compromise over the next year or so will be difficult. The negotiations leading up to Copenhagen (and beyond) will be tough. Realpolitik will never be far from the surface. Ott (2007, p.17) has described the process of international negotiations over current and future climate change regimes as being akin to 'trench warfare' conducted in zero-sum terms. It is only by keeping the ethical underpinnings of the UNFCCC firmly in mind that we can ensure that the narrowly defined self-interest which leads to this trench warfare is overcome to the mutual benefit of us all.

- 1 This article is a revised and abridged version of a paper submitted as a course requirement for completion of a Masters of Public Policy. The revised version was provided as a background paper for 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 Jonathan Boston and Lucas Kengmana for their comments on earlier drafts.
- 2 While some overlap between mitigation and climate change adaptation exists, adaptation raises a discrete set of issues. For discussion of this topic see, generally, Boston and Kengmana (2007, p.168), Climate Protection Programme (2004, p.210) and Paavola and Adger (2002).
- 3 This political dimension has also been termed a 'negotiation dimension' by Ringus et al. (2002, p.3), who argue that justice operates in three different ways. First, it can serve as a source of 'motivational strength' for actors who believe they are being 'unfairly' treated. Second, it can operate as a framework of soft constraint in the pursuit of self-interest. The point here seems to be that justice may set the outer bounds of negotiation positions taken in response to the Westphalian imperative to maximise a national self-interest. Third, it may operate as a decision premise, 'where self interest provides no clear guidance'.
- 4 Some, notably Rawls (1993), argue that principles of distributive justice have no place in the international arena where no institution fulfils the same role as the national political authority (Banuri et al., 1996, p.85). While others (Caney, 2005a, 2005b; Pogge, 2002) mount a fuller defence of the case for extending familiar principles of justice from the domestic to the international arena, the relevance of these non-international principles of justice is simply assumed in the available literature (see, for example, Grasso, 2007, p.230; Muller, 2001, p.273; Ringus et al., 2002, p.4). This can, perhaps, be explained by the UNFCCC's reference to 'equity' as a guiding principle and by Shue's (1999, p.531) observation that '[t]he concept of fairness is neither Eastern nor Western, Northern or Southern, but universal. People everywhere understand what it means to ask whether an arrangement is fair or biased towards some parties over other parties' (Shue, 1999, p.531).
- 5 While there is some debate as to whether there is only one single criterion of justice or, if many, how many, it is not proposed to enter into his debate here. Arguments in favour of a single criterion run the risk of circularity as the criterion chosen must have been chosen because it was considered the most just.
- 6 Currently CO₂ concentration is at approximately 385ppmv (CO₂ only). One study has concluded that to have 50/50 chance of stabilising at 2°C above pre-industrial levels would require atmospheric concentrations of 400ppmv (CO₂ only), and that current levels mean it is not 'likely to be met' in the sense of there being a 2%–55% chance of stabilising above this level – see Hoehne et al. (2007, p.10 and sources).
- 7 In this regard, the UNFCCC removes some of the concerns expressed by Feinberg (1973, pp.114-6) as to how the 'contribution' can be accurately measured in other policy contexts, such as the distribution of national wealth and income.
- 8 See reports of the AGBM UNFCCC/AGBM/1996/7 which, at paragraph 10, notes different

- approaches and records (paragraph 23) that three broad types of indicator, namely national emissions, national circumstances and costs of action, were advocated. Within each type, a cluster of further potential indicators are specified – see paragraphs 31 and 12.
- 9 For example, one modelling exercise has predicted that, depending on which GHG sources are counted, taking historical and projected emissions into account there will be parity of contribution to atmospheric GHG levels as early 2030 (Baumert et al., 2004, p.16). The issue is further underscored by another study which suggests that China's emission will grow by 119%, India's by 131% and Brazil's by 70%. In comparison the EU's will grow by only 8% (Claussen, 2007).
 - 10 The Greenhouse Development Rights Framework (Baer, Athanasiou and Kartha, 2007, pp.27-8) is a model which seeks to accommodate concern with alleviating poverty and underdevelopment within a global climate change mitigation burden. Its authors argue for a 'development threshold, below which individuals are entitled to prioritise their development needs over any burden they otherwise have to bear in respect of climate change mitigation or adaptation'. The authors argue for an income-based measurement and that an individual income level of \$16 per day constitutes the appropriate threshold level at which climate change mitigation and adaptation burdens will be assumed.
 - 11 The answer may well depend on the time period regulated by way of further commitment periods. It may be that if second and subsequent commitment periods are relatively short, similar in length to that set by the Kyoto Protocol, the obligation gap between the mitigation commitments assumed by China and other major emitter developing states may 'justly' be considered less. If subsequent commitment periods stretch to substantially longer-term horizons, say 2050-2080, current non-Annex 1 parties whose share of global emissions are projected to rise by significant amounts might 'justly' take on a greater level of mitigation commitment.
 - 12 Bodansky et al. (2004) identify 40 separate ideas emanating from the literature, reports and symposia on this topic. Ott (2007, p.29) puts the figure is as high as 50.
 - 13 If equalising per capita emissions is to be the basic principle then this suggests a distribution pattern that would require most cuts in Australia and the United States, the latter not having ratified the Kyoto Protocol. South Korea has the same per capita emissions as the United Kingdom and more than the EU average. Baumert et al., (2004, pp.11-12) note that if gases other than CO₂ are used the gap in per capita emissions between Annex 1 and non-Annex 1 countries closes. Per capita emissions for China, India and Brazil rise by 38%, 67% and 160% respectively, while those for the EU, United States and Japan rise by 22%, 20% and 8% respectively. The position changes even more dramatically if emissions from land use change are added, as this represents a third of developing country emissions levels while developed states may be net absorbers in this context. If all gases, including CO₂ from land use, are included Brazil and Indonesia have higher per capita emissions than the EU.
 - 14 In Baer and Athansious's (2007) analysis, this is called the South-North Dialogue's 'Equity in the Greenhouse' proposal.
 - 15 The six categories are: UNFCCC Annex I parties, except Annex II states (i.e. economies in transition (EIT)); Annex II states; newly industrialised countries (NICs); rapidly industrialising developing countries (RIDCs); other developing countries; and least developed countries.

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