UNIVERSITY OF NOTTINGHAM

DISSERTATION FOR DEGREE OF MASTER OF SCIENCE (MSC)

MSC IN LAW AND ENVIRONMENTAL SCIENCE

ENVIRONMENTAL JUSTICE AND INTERNATIONAL CLIMATE CHANGE LEGISLATION

BY

THOMAS WEST, BSC (MATHEMATICS, UNIVERSITY OF WARWICK)

Candidate of the 2011 MSc Programme

School of Law, University of Nottingham

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I hereby declare that I have read and understood the regulations governing the submission of postgraduate dissertations, including those relating to length and plagiarism, as contained in the LLM Manual and that this dissertation conforms to those regulations.

"The global nature of many environmental problems calls for a global, cosmopolitan ethic, and for its recognition on the part of agents who thereby accept the role of global citizens and membership of an embryonic global community" (Robin Attfield, Environmental Ethics, 2003, pg. 182)

for the Unborn

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I – INTRODUCTION

Impoverished communities often live in substandard environments. Mobilising awareness of this and action to remedy it has been fundamental to the Environmental Justice Movement (EJM) over the past two decades[1]. This movement has its roots in the plight of disenfranchised communities in the US and their battles for recognition and equality. Beginning with cases such as Love Canal[2], investigation into the communities suffering most from poor environments revealed that it was often poor and ethnic minority communities that were left to deal with disproportionate environmental burdens. But poor quality of environment is by no means isolated to a few pockets of relative deprivation in the developed world: a recent WHO report states that unhealthy and unsafe environments cause a quarter of child deaths worldwide[3] and so the need for internationalising this fight is clear. It is also clear that environmental problems are not exclusively caused by those inhabiting the same nation state as the sufferer: the need for a truly global approach to such problems is apparent. A theoretical notion of environmental justice (EJ) focussing on inequities and disproportionate burdens which have arisen from morally irrelevant factors[4] is needed in this fight, so that the need for action can be isolated and defended, and pathways to amenable solutions can be taken. Important lessons for EJ can be learnt from the EJM, especially from sources such as the Principles of Environmental Justice[5], which affirm the need for action at both local and global levels. This essay is not directly about the EJM but is inspired by it and hopes to begin to answer the question of how local disenfranchised communities can have their lot improved by international environmental law. Through adopting a global perspective, the appropriate setting has been chosen for creating a framework for dealing with global environmental problems which can often be at the root of locally poor environments.

Alongside the importance and the relevance of EJ is its inherent complexity: it

[1] At the vanguard of this movement is Robert Bullard, whose classic 'Dumping in Dixie: Race, Class, and Environmental Quality' (Bullard, 1990) remains important and relevant.
[2] See Blum (2008); Levine (1982).
[3] WHO (2009). See Smith et al. (1999) for a more detailed analysis: note that they suggest a quarter as the lower bound for deaths associated with poor environments.
[4] Hayden (2005).
[5] Adopted at the People of Color Environmental Leadership Summit (1991). Note especially principles 1 and 3, available at http://www.ejnet.org/ej/principles.html, last accessed 21/08/11.

necessarily has more than one string to its bow, covering a diverse range of situations and concerns and seeking to address imbalances of different kinds in different ways. Breaking it down to its base aims reveals three broad ways of conceptualising EJ:

i. A just distribution of environmental goods (and bads) which is non-discriminatory (as to race, gender, location, etc.) and reflects our shared and specific needs to flourish.

ii. Respect for the intrinsic value of all life (human and non-human) and the environment itself: a recognition of our place as an element of the interconnected web and its capacities.

iii. The ability to participate in decision making regarding (i) and (ii), especially with regards to our own local environment and shared (global) property as well as access to justice mechanisms to enforce legitimate claims regarding (i) and (ii).

The focus of this essay will be on (i), not because it is somehow more important than the others, but to allow a starting point to be created and to give some purchase on the topic. We will begin by examining the notion of EJ on an international level through its meaning as justice between individuals. Its ability to interact with established principles of international environmental law will be weighed to assess the viability of EJ helping to delineate a route through international legal systems. Current climate change legislation will then be analysed and the question of whether EJ can help inform attempts to both mitigate and adapt to global climate change will be asked.

II –A Construction of Environmental Justice

International environmental law exists to guide and promote the protection of the environment by regulating the behaviour of states and other actors through setting rules and standards. The determination of these rules and standards can be a perplexing issue, with myriad opinions, beliefs, interests and bodies of evidence to be weighed up in the process of law making and it is in this operation that certain guiding principles can be of use. One of these principles is justice; flexible enough to operate in a number of different ways and in different contexts and important enough to be central to good law. The historical relevance of justice with respect to international environmental legislation can be seen by looking back to the *Trail Smelter Arbitration*, where the tribunal was asked to

"reach a solution just to all parties concerned"[6] and throughout the evolution of modern international environmental law[7]. An excellent example of the use of justice considerations to inform international law making is the Security Council's resolution to hold Iraq liable for all environmental damage caused by its 1991 invasion of Kuwait[8]: no positive law was available to firmly base this decision on, but principles of justice guided the course of action[9]. The aim in this chapter is to form a construction of EJ which can be used to assess current laws and to inform the creation of new ones.

Facing growing environmental concerns of both global and local concern, it is imperative that the burdens for dealing with the problems of scarcity, resource depletion and toxic waste do not fall disproportionately on those both least able to deal with them and least responsible for them. It is communities in the global South who frequently bear both of these disadvantages and tackling the clear disparity in standards of living globally has long been on the agenda of the UN, NGOs and many world citizens. Yet the twin issues of environmental protection and equitable living conditions are too often "decoupled"[10]: beyond an acceptance that the two problems are of course connected, little is done to reconcile both the *global* issue of the Earth's carrying capacity and our myopia towards it and the *local* issue of poor communities living in poor environments[11].

Securing avenues to participation in decision making and opportunities for appeal when appropriate will inevitably play a crucial role in improving the lot of disenfranchised and impoverished communities, but a firmer backbone of just structures and institutions is important too in order to be able to provide this. By the very nature of EJ, this construction cannot encompass every possible aspect that constitutes it or is relevant to it: EJ does not have one "Archimedean point for appraising existing institutions as well as the desires and aspirations they generate"[12], but "several such points, and several ways

[6] United Nations Reports of International Arbitral Awards, Special Agreement, Article IV at pg. 1908.
[7] See Harris (2010) at pp. 59-70.
[8] UNSC Resolution 687 (1991) of 8 April 1991, S/RES/687.
[9] Shelton (2009).
[10] Falk (2009).
[11] The causal chain here can work in either direction, with the effect that this relationship can be mutually reinforcing. Consider the examples of poor fishing communities in Vietnam given by Parsons (2009).
[12] Rawls (1972) at pg. 520. Cited in Ebbesson (2009a) at pg. 2.

of understanding justice in environmental contexts."[13] Here, we look to formulate distributive EJ as a cornerstone: locating appropriate considerations for a just distribution can help inform procedural and corrective aspects of EJ[14].

Important lessons are to be learnt from the EJM: it has matured and internationalised the recognition that "environmental discrimination is unfair, unethical and immoral"[15]. The disproportionate burdens borne by certain communities have been effectively highlighted by the EJM within the US[16] and can be transplanted into the international arena: Falk reminds us that the "character of environmental justice should be understood in relation to distributive inequities associated with race and class, as well as with respect to the injustices visited on non-Western societies as a result of colonial and post-colonial practices"[17]. In addressing these disparities at the international level, a firm morality is needed which can inform both legislation and policy as well as being in line with our systems of belief and the realities of a globalised world. Indeed, at the core of Ebbesson and Okowa's anthology 'Environmental Law and Justice in Context' is the "thesis that justice considerations arise in just about any legal context involving health, the environment and the use of natural resources. It permeates the development and application as well as evaluation and analysis of environmental laws."[18]

If a formulation of EJ can be manifested on a global scale, it can help to deal with problems of both environmental protection and social justice, but only if this formulation is clear, appropriate and amenable to all. To do this, the topography of EJ needs sketching and questions of its structure, content and implications need examining. Without losing sight of the fact that it is the condition of the world and its inhabitants,

[13] Ebbesson (2009a) at pg. 3. Consider the three strands picked out in the introduction and also, see Murphy-Greene (2007) where she isolates four main areas of EJ: "(1) the distribution of environmental hazards; (2) the distribution of the effects of environmental problems; (3) the policy making process; and (4) the administration of environmental protection programs." And this is just within the national context. Schlosberg (2004) argues that "a thorough notion of global environmental justice needs to be locally grounded, theoretically broad, and plural – encompassing issues of recognition, distribution, and participation." (pg. 518).
[14] This is not a one way relationship, but rather the two are mutually reinforcing since better procedural justice too can help bring about more equitable distributions. (Shelton, 2007).
[15] Bullard (2005) at pg. 1.
[16] See, generally, Bullard (1990, 2005).
[17] Falk (2009) at pg. 43.
[18] Ebbesson (2009a) at pg. 3.

and not purely the interesting theoretical discussion, which compels the debate[19], a construction of EJ is needed as it can help to inform both legislation and the actions of individuals[20]. Key theoretical questions need to be addressed, such as: What are the units of moral consideration? What determines whether a distribution is just or not? How can any formulation of EJ be made relevant to international environmental law?

(a) Isolating a Branch of Justice

Both justice and the environment are open to a range of interpretive meanings dependent on the context in which they are to be deployed, as well as more subjective considerations. Possible formulations of EJ then will necessarily have different implications and so it is crucial to detail the construction of EJ as it is to be understood here. A preliminary consideration is whether we ought to consider (environmental) justice to be a product of the law or a more abstract aim which the law ought to be aiming for. Proponents of the former fall under the category of legal positivists[21], although they need not necessarily embrace Bentham's claim that natural law is "nonsense upon stilts"[22]. The problem with this approach is that it seems particularly hard to defend the notion that current hard environmental law (even if fully implemented) would produce a desirable state of affairs. Its scope is often too limited (The Aarhus Convention is an excellent example of a well formulated, but geographically limited international treaty) and its provisions too lenient (the emission reductions set by The Kyoto Protocol, even if met, are small compared to what may prove necessary to avoid the impacts of climate change[23]). The inclusion of soft law elements[24] into the category of norms that together bring about this positivist painting of justice perhaps

[19] In the words of Attfield, "a just society is to be esteemed and cherished not because of its abstract structure, but because of the quality of the lives of the individuals who play a part in it or are affected by it" Attfield (1987) at pg. 143.
[20] Cf. Beitz (1999).
[21] H.L.A. Hart and Ronald Dworkin have provided a detailed debate on the validity of legal positivism over the past few decades.
[22] Bentham (1843).
[23] See the IPCC's AR4 for an overview of the predictions. In particular: "There is *high agreement* and *much evidence* that with current climate change mitigation policies and related sustainable development practices, global GHG emissions will continue to grow over the next few decades." IPCC, 2007 at pg. 44, see the report for definitions of *high agreement* and *much evidence.* Also see Harris (2010).
[24] Including such provisions as Principle 8 of the Rio Declaration: "To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies."

would provide a more palatable perception of the just conditions we seek, but it is still difficult to defend this view due to the vast omissions in terms of environmental protection and social equality that would still exist under their full implementation.

Rejecting this view of justice as somewhat blinkered and overly optimistic and instead seeking a theoretical basis for a construction of justice as an aspiration forces a radical shift in thinking. John Rawls' seminal work 'A Theory of Justice' begins with a claim that "laws and institutions no matter how efficient and well-arranged must be reformed or abolished if they are unjust"[25] and it is with this motivation that current laws do not necessarily supply justice that we begin our investigation[26].

A singular definition of justice may not be forthcoming[27] but we can be aware of its guiding principles. Justice dictates that the treatment of all should be appropriate to their situation and capabilities[28] and takes interest in the maximisation of the well-being[29] of the relevant actors. Any notion of justice must include appropriate levels of consideration being given to the interests of all those falling within its moral sphere by ascertaining which differences matter and which do not[30], as well as the consistent treatment of like cases alike and flexibility to allow it to stay relevant and current.

At its heart, justice informs us that all arrangements[31] between the units of consideration must be fair and acceptable[32] to all and be the result of transparent and inclusive processes. Rawlsian justice as fairness boils this down to two fundamental principles: equality in the assignment of basic rights and duties; and that social and economic inequalities are just only if they result in compensating benefits for everyone, and in particular for the least advantaged members of society[33]. Although this certainly provides a sturdy frame for our construction of EJ, it portrays our units of consideration

[25] Rawls (1972) at pg. 3.
[26] In short, this stance is that "justice does not directly follow from the doctrines of international law." Biermann (1999) at pg. 162.
[27] A "hopeless and pompous task", Tornblom (1992) at pg. 177. Cited in Harris (2010) at pg. 32.
[28] Harris (2010).
[29] Shelton (2009).
[30] Wenz (1988) §11.3.
[31] It is these arrangements that will detail which differences matter; how interests are to be given consideration; mechanisms for continuous re-assessment and so on.
[32] Acceptable, that is, to reasonable and informed actors. "Reasonable action here is that which takes into account the justifiable claims of other persons." Cabrera (2004) at pg. 58.
[33] Rawls (1972).

as somewhat passive objects, whereas it may be more accurate to think of them as autonomous creatures with desires, aims and goals of themselves. Consequently, we must ask how just any arrangements are if they do not provide each unit of consideration with opportunities to fulfil their aims and function according to their nature. If it appears that our previously sturdy frame has begun to creak, we can add a supporting beam in the form of Amartya Sen's capability approach, which "is concerned primarily with the identification of value-objects, and sees the evaluative space in terms of functionings and capabilities to function"[34]. Essentially, the point here is that we must recognise the needs, desires, capabilities and capacities for action of our units of consideration: it seems sensible that the entities within the moral sphere will be there because of some acceptance of their potential for flourishing, and arrangements which permit this flourishing must be central to any tenet of justice. In this context, this means at least access to the natural resources needed to fulfil needs and ambitions and a safe environment in which to do so. A final guideline is given by the yardstick we use to judge how just any system is: are we attempting to maximise overall benefit to society at large, or ought we to make judgements based on how beneficial any arrangement is to the least well off? It seems appropriate to opt for the latter since suppression and exploitation of even a small minority is difficult to align with a just state of affairs[35].

Now that the basic and broad guidelines of EJ have been outlined, the procedures and arrangements necessary to bring about such a concept of justice must be considered. There are three key strands which work together to bring about a just system: distributive justice; procedural justice and corrective justice, and although these strands are not entirely discrete, it is the distributive notion that is most relevant to EJ and it is this element which shall be focussed on here[36]. Defining the contours of this distribution is informed by our ideas of justice (it must be non-discriminatory; it must benefit those

[34] Sen (1993) at pg. 32.
[35] Defence of this stance is possible from a self-interest perspective in the sense of Rawls' 'maximin' strategy. (Rawls, 1972; Cf. Wenz 1988 pp. 239-240).
[36]This is by no means a widely accepted view. Schlosberg (2004) emphasises the need to look beyond justice as purely distributive justice. I do not wish to claim that all justice considerations can be viewed as distributional issues, merely that it is a cause certainly worth pursuing. Schlosberg encourages us to ask why inequity exists in order to help find solutions and this too is a vital component of EJ.

who are currently least advantaged; and it must not produce a distribution which restricts the basic capabilities of any). Relevant too is the realisation that this distribution must lie within the boundary conditions and constraints of reality.

Rawls' introduction of the veil of ignorance to provide a fair way to determine the rules governing the distribution of goods is a useful and well-trod starting point. By stepping behind the veil, self-interested prejudices can be channelled into proper concern for the well-being of all[37] and so any inequalities arranged to benefit the least advantaged. Relating this to the global environment means that a rational sharing of both environmental 'goods' (e.g. fossil fuels, forests, freshwater) and environmental 'bads' (e.g. radioactive waste, polluted air, infertile soil) and the associated costs are in order[38]. The finite nature of many resources and the global nature of many environmental concerns requiring a response at the global level make this task complex. It is tempting to simplify matters by suggesting that the best distribution is an equal per capita one. However, a portioning up of this kind hits immediate difficulties, not least the immediate practical difficulties of enacting any such distribution due to the failure of traditional economics to account for the value of the environment[39]. What just laws must seek to do then is ensure that resource distribution and use does not prejudice against the (materially and politically) poor for this would violate Rawls' second principle. Sen's capability approach is also informative here: a distribution need not immediately dole out equal per capita amounts to be just, since the needs for each to function may not be the same[40], but the amount each individual is entitled to must meet levels which allow them to fulfil their capabilities. Detailing (or even sketching) the per capita consumption of any resource is far beyond the scope of this essay (and perhaps not even a desirable or worthwhile task[41]), but the point that legislation ought to address current imbalances in

[37] Wenz (1988). We might even say that it allows one to think of oneself in a more expansive way, encouraging collaborative approaches and solutions.
[38] Shelton (2009). These are the relevant 'primary goods' in Rawlsian terms.
[39] Caney (2005), especially note 5.
[40] Someone with a particular medical condition may require more resources than those voluntarily living communally in large communities for example.
[41] Identical treatment has already been rejected and any rigid arrangement runs the risk of resulting in undesirable outcomes when performed against a backdrop of entrenched pre-existing socioeconomic inequalities as well as failing the test of being flexible.

the distribution of resources if it purports to be just remains – it seems highly improbable that those behind the veil of ignorance would choose such an unequal distribution.

In summary, our concern is how both the benefits of the environment and the burdens associated with dealing with environmental problems ought to be shared out. Can we use the Rawlsian justice as fairness, informed by Sen's capability approach then to help us determine this? A detailed per capita division of each and every single one of the Earth's resources is not only a wild pipe-dream, but may not even fit in with providing what is best for each individual and community, as their needs and desires are likely to vary over space and time. Opinions as to what value should be attached to certain environmental goods and bads is likely to differ amongst individuals and communities and cultural considerations need to be factored in too[42]. However, we have seen that distributions must fulfil certain criteria and this has important implications for the environmentally poor across the globe: it is their situation to which most attention must be given, both in terms of Rawlsian justice and as it is to be our measure for how just an arrangement is.

We must look further now into the level on which EJ must operate and what our units of consideration ought to be if we are to produce a robust and relevant construction of EJ: who ought our primary concern be for if we are to prevent unfair, unethical and immoral environmental discrimination and how extensive is the moral community?

(b) The Motivation for Internationalising Environmental Justice

It has become necessary to view EJ through a wide lens since interactions no longer take place solely within easily bounded communities due to the globalised nature of the macroeconomic system and developing cultural norms. The Kantian belief that we ought to take responsibility for how our actions affect others now necessarily extends globally and this is the appropriate field if we wish to take the issue of environmental injustice seriously. It is this idea of 'causality and responsibility'[43] that informs and demonstrates

[42] Schlosberg (2004). It is interesting to note that Bullard rejects the claim that minority communities are more willing to accept higher levels of environmental risk due to social structures which are more accustomed to a certain level of risk and instead cites lack of social and political power as the key determinants. (Murphy-Greene, 2007). Cultural differences also bring about varying ideas as to what fairness means, both between and within countries (Linnerooth-Bayer, 1999)

[43] Harris (2010) at pg. 38.

the need for an international approach and already has some sway in the international community through principles such as the polluter pays principle[44]. Given the complexity of the geographical dispersion of different levels of law (local, national, regional and global) and the interactions between them[45], awareness of the need for appropriate approaches at each level is needed and an international perspective will not be readily transformable into off the peg solutions at more local levels. However, an advantage of adopting an international standpoint is that "[t]hinking globally at least sets a *context* for focusing at other levels"[46]. Formulating EJ internationally allows problems of a truly global character to be faced up to as well as assisting at a more local level.

So we have several motivations for approaching EJ from an international standpoint: the environment and environmental harm operate as global systems; the overlapping character of legislation from local to international necessitate an overarching perspective; and the connectedness of human constructs create relationships which stretch across the globe. How though ought we to think of EJ at this level?

Thomas Pogge has undertaken the task of extending Rawlsian justice to the international arena, seeking to modify and interpret Rawls' work to make sense of it in a global context – an essential task since examples of national communities which are 'self-contained' or 'closed systems'[47] are few and far between. Pogge highlights the acceptance by many parts of society of double standards between national and global orders, but rejects this acceptance: if we would not accept some level of inequality at the national level, we should reject it globally too[48]. It is this bounded idea of justice that allows the exploitation of the poor outside of the (national) moral sphere: pollution and environmental degradation will follow the 'path of least resistance', which more often than not ends up in the hands of the politically weak and materially poor[49]. The focus on statecentric approaches to environmental problems also creates unhelpful competition

[44] This will be discussed in more detail *infra.*
[45] Twining (2009).
[46] Twining (2009) at pg. 79, emphasis in original.
[47] A feature that is necessary of a domestic society to fit with Rawlsian ideals (Rawls, 1972).
[48] Pogge (2008).
[49] Pogge (2008). Beitz suggests that this even "has the effect of taxing poor nations so that others may benefit from living in 'just' regimes." Beitz (1975) at pg. 375.

between states[50] and encourages corrupt leadership in resource-rich but poverty-stricken countries[51]. Thickening Rawls' veil to include more parties and interests in the original position is a starting point, but on its own is not enough: a step back is needed to take in the far-reaching implications of policies and laws.

An attempt to internationalise how we regulate global environmental affairs is given by Pogge's Global Resources Dividend (GRD)[52], which is in many ways fundamentally based on the claim that "[i]n view of very considerable global interdependence, it is extremely unlikely that poverty is due to exclusively local factors"[53]. In brief, the GRD violates Principle 2 of the Rio Declaration by removing full sovereignty over natural resources, instead ensuring that a small part of their value ought to be shared appropriately amongst the global community[54]. The need for the GRD, or some other governing principle to resource use, arises because of the uneven distribution of natural resources across the Earth which as Beitz points out is akin to the uneven distribution of natural talents in individuals[55]. This distribution is not in itself unjust, but there is a need for justice considerations when dealing with it, since it is essentially "arbitrary from a moral point of view"[56]. Strikingly at odds with traditional international law, acceptance of such an idea may be slow, but it does encompass ideas of common heritage[57], an emerging principle of international environmental law, stretching its meaning and geographical application as an attempt to identify what the requirements of a global order set up to combat radical inequality might look like. New twists on norms of international law may well be needed, since the traditional rivalry between states is

[50] Pogge (1989). Pogge's critique of this *modus vivendi* presents it as a negative sum game.
[51] The 'Dutch Disease' refers to the negative correlation between natural resource exploitation and economic growth. (Pogge, 2008 at pg. 120). Also see Beitz (1999).
[52] Pogge (2008). Other practical approaches have been sketched by other authors, see Caney (2010) for an outline of some, which he claims "all have in common the conclusion that the current system is extremely unjust and that a redistribution of wealth from the affluent to the impoverished is required." (pg. 135).
[53] Pogge (2008) at pg. 220.
[54] Pogge (2008).
[55] Beitz (1975). Although there are also important differences between the two (resources are not permanently 'attached' to anybody in particular).
[56] Beitz (1975) at pg. 369.
[57] Birnie, Boyle & Redgwell (2009), pp. 197-8; Brunneé (2007).

unhelpful when it comes to allocating resources fairly[58]: not only is the current allocation skewed, but the very premises on which the rivalry is based encourages prioritisation of narrow and immediate interests through the wielding of economic and military might at the cost of the promotion of shared values and just distributions[59]. This in turn undermines the respectability of international law itself since laws and treaties are subject to participation by parties who may not fear the costs of noncompliance and can imaginatively interpret meanings or 'unsign' treaties[60] in order to advance their own interests. In the words of Pogge, "*everything* is negotiable"[61].

If overarching values and institutions capable of enforcement at the international level are then needed in order to produce just distributions, then EJ must play a role here. However, to make any real sense of EJ, identification of the unit of consideration beyond the state is needed. Traditionally, international law has dealt with the interactions between states, but we have seen how this approach is often deficient.

(c) Justice Between Whom?

For an entity to be treated as worthy of moral consideration in practical terms requires it to meet two criteria: it must be alignable with most peoples' moral intuitions and sense of fairness; and these intuitions must be able to be defended against claims of prejudice or bias and be backed up by a consistent ethical theory. Uniting these two in a robust and uncontroversial way is not easily done, but it is important not to let these intricacies cloud what can be useful, if somewhat vague, features of the moral sphere.

So whose views and interests merit our consideration and need to be incorporated into our construction of EJ?[62] The first candidates we have offered by the international legal order are states, the traditional players on the international field. The argument is that since states represent the best interests of their citizenry, if a just distribution can be

[58] Bierman & Dingwerth (2004, at pg. 16) argue "that a reconsideration of core theoretical concepts such as sovereignty, agency and policy levels is required if we are to improve our understanding of the complexities involved in global environmental governance."
[59] Pogge (1989).
[60] Consider George W. Bush's rejection of the Kyoto Protocol (Shelton 2009). The *pacta sunt servanda* rule is a useful one, but only if adhered to.
[61] Pogge (1989) at pg. 228, emphasis in original.
[62] In Rawlsian terms, this could be constituted as which actors should be behind the veil of ignorance.

arranged among them, then this just distribution will have global effect. But this is at best a proxy morality, held on behalf of each states' citizens, who the representatives of each state are duty bound to protect. Difficulties are abundant here – there is no guarantee that states will be internally just[63], the membership of a state is fluid, especially over long periods of time and it does not make sense to ask some of the important questions established above of states[64]. Alongside these theoretical obstacles are practical issues of corruption[65], vested economic and political interests, unbalanced political bargaining power and poor representation of citizens' interests by states[66]. Isolating states as our unit of moral consideration does not seem likely to fit either of our two criteria above, nor does the 'self-contained society' abstraction of a state have much meaning in the 21st century[67].

On top of these concerns is the claim that states are simply poorly situated entities to deal with environmental problems of a global nature. Paul Harris' investigation into the doctrine of international EJ between states leads him to the conclusion that although the doctrine has both selfish and altruistic interpretations, none is so altruistic as to work on behalf of the global poor[68] and to claim that "preoccupation with the Westphalian norms has undermined environmental protection *as well as* both international and global justice"[69]. The competing interests of state sovereignty over natural resources and the obligation not to cause transboundary environmental harm too often favours the former, creating a system unable to deal adequately with global environmental problems[70].

It is in terms of the condition and well-being of *individuals* that morality is more naturally discussed and this seems to be the most appropriate path here. It is individuals who receive the benefits of and harms from their environment and although we may

[63] Beitz (1975).
[64] What are the basic needs, functionings or capabilities of a state?
[65] See Cabrera (2004) at pg. 76 for this and a more general critique of the Westphalian system.
[66] "[S]tate consent to international agreements does not guarantee the absence of negative impacts (of either environmental change or response measures) on some of its citizens" Paavola (2005) at pg. 312.
[67] Ott and Sachs' talk of "the Westphalian constellation" illuminates this: "In this framework [the Westphalian constellation], the world of nation-states … was seen as a series of containers which hold a society and all its layers within a territorially bounded space. As these containers burst open with globalisation, some of the 'Westphalian' assumptions become more and more fictitious." Cited in Harris (2010) pg. 93
[68] Harris (2010). See Harris in general for a critique of statecentric approaches.
[69] Harris (2010), pg. 72, emphasis in original.
[70] Hayden (2005).

couch issues in terms of community disenfranchisement, it is both the systemic injustices and the actual harm to individuals caused as a result of this that generates such concerns. The EJM has demonstrated that poor environments impact on communities the world over and this must be reflected in the formulation of EJ. In addition, Harris reminds us that there are rich people in poor countries as well as poor people in rich countries[71] and any ethic must not ignore this fact by treating national communities as homogeneous. Our guidelines for a just distribution must take in the situation of each *individual* and not treat large groups as replicas of an average[72].

Despite this adoption of the individual as the relevant unit, the makeup of the set of individuals in the moral sphere does not immediately fall into place. The fact that it must be global in nature has been defended by our need for an international approach and can also be illuminated by noting that any enhanced responsibility we may have for those most immediately around us (e.g. our children[73]) does not weaken the moral responsibility we owe to those who may be geographically (or temporally) remote from us[74]. The worthiness of non-human entities for moral consideration is also a position with much credence behind it[75], yet a defence for their inclusion in this context is beyond the scope of this essay. The same is true for unborn future generations, whose lives are being impacted on by the actions of those alive today[76]. For the sake of clarity, this construction of EJ is concerned initially with human beings alive today, although there is no reason for it not to be extended[77]. This line of thinking follows in the footsteps of cosmopolitanism, which has been summed up by Thomas Pogge as containing at its core:

> "First, *individualism*: the ultimate units of concern are *human beings,* or *persons …* Second, *universality*: the status of ultimate unit of concern attaches to *every* living human being *equally*… Third, *generality*: this special status has

[71] Harris (2010). Poverty of course can be a relative concept, and priority must lie with those in most abject poverty globally.
[72] The average person, by most measures, may in fact be the one person who *doesn't* exist (crudely put, they would have approximately one testicle and one ovary).
[73] And others in our community – the strong version of this line of reasoning is communitarianism.
[74] Stone (2007), Singer (2009), Harris (2010).
[75] Two of the leading advocates of this view (although with differing opinions as to the details) are Peter Singer (e.g. 1976) and Tom Regan (e.g. 1988).
[76] The most widely heralded work in this field is almost certainly Brown-Weiss (1989).
[77] Schlosberg (2007).

global force. Persons are ultimate units of concern for *everyone*..."[78]

Moral cosmopolitanism, as is being argued for here, need not go hand in hand with legal cosmopolitanism. That is, accepting that it is individual life forms who have ultimate value and not constructed institutions such as states does not necessarily require the creation of more powerful global institutions or a world government. What is needed are new tactics for those involved in international affairs based on solidarity and co-operation as well as more extensive principles of justice[79].

Fair equality of opportunity, which dictates that it is not where you are born, but the abilities and motivations that you have and your subsequent actions which define your life is a succinct way of thinking of this cosmopolitan approach[80] - it may be true that we do not all want the same lifestyle (due to cultural and individual differences), but heterogeneity should not be forced upon us. Note that this cosmopolitan perspective does not directly infer that states are not relevant actors at all[81], but just accentuates the fact that it is the well-being of individuals which we are concerned with, not abstract nation-states. Cosmopolitanism is broad and open to many interpretations and this results in different cosmopolitan views about distributive justice (Beitz suggests: "human rights theories, globalized utilitarianism, various forms of global egalitarianism, and pluralistic theories of global scope"[82]). The point is that the law created (primarily) by states must reflect the interests and values of individuals, not just states.

(d) Justice Concerning the Environment or Towards the Environment?

It is a thankfully uncontroversial fact that the planet we call home is a finite one. We live on a planet of limited resources and numerous claimants to these resources and distributive justice can allow us to decide how to portion up these resources within the boundary conditions defined by the Earth. Two balancing exercises need to be performed

[78] Pogge (2008) at pg. 175**.** Other strong advocates of a cosmopolitan approach include Simon Caney (e.g. 2005, 2010) and Charles Beitz (e.g. 1975, 1999).
[79] Harris (2010) at pp. 102-3.
[80] Hayden (2010).
[81] Viewing states as still relevant to some extent is what Caney terms "mild cosmopolitanism" (Caney, 2010). Or, in the words of Charles Beitz: "There is no conceptual reason to have to choose between a theory whose only units are individuals and one whose only units are states" Beitz (1999) at pg. 270.
[82] Beitz (1999) at pg. 287.

simultaneously: achieving a fair distribution which is also realistic. Perhaps it is useful to think of these two tasks as justice concerning the environment and justice towards the environment. We cannot assume that these two goals are immediately compatible[83] and it is in this area that Falk warns of "decoupling"[84] for a committed focus on one can in fact damage the prospects of achieving the other. Proponents of Deep Ecology see the environment as having intrinsic value in and of itself[85] and this may be at odds with claims that the environment is solely there to be used to effect improved standards of living for those in poverty. Delegitimising either of these arguments is not the aim here for both are valid and worthy causes: a greater connection and respect for the natural world would have untold benefits[86] and basic nutrition and healthcare are clearly more pressing concerns than, say, global rates of soil salinisation for the poorest communities and families. EJ though can help to reconcile these opposing viewpoints as it contains both aspects within it[87]: the existence of scarcity is perhaps the cornerstone of EJ since it is because of scarcity that we have limits to growth, environmentalism, and the need to fairly distribute what is available[88]. Reducing inequalities and limiting total consumption are stapled together by EJ in a way which is alien to much of the discourse on the two individually: a reduction in poverty requires more than attempting to bring consumption levels up to the highest level possible, it needs a bidirectional convergence.

Accepting the multidimensional strain put on the Earth's resources by competing concerns must form a part of any construction of EJ which is to be taken seriously. However, it is difficult, but not necessarily impossible, to talk of providing justice to elements of the environment in the same way as with humans[89]. It is posited therefore

[83] Dobson (1998).
[84] Falk (2009).
[85] Beckerman & Pasek (2001), chapter 8.
[86] Richard Louv (2005) has coined the term 'Nature Deficit Disorder' to help explain the problems associated with the lack of interaction with nature in children.
[87] Although taking humans as the only unit of moral consideration is clearly an anthropocentric stance, it does fall under the banner of 'weak' anthropocentrism as it does contain recognition of the value of the environment, (Hayden, 2010 at pg. 360), meaning that it is possible to endorse the practicalities of EJ as well as having biocentric or ecocentric beliefs (Hayden, 2005 at pg.134).
[88] Or, in the words of Robin Attfield: "It is, after all, in conditions of scarcity that the need for justice is most obvious, and there is no shortage of such conditions in the modern world." Attfield (1987) at pg. 140.
[89] Expansions of this kind have been most notably attempted by Schlosberg (2007), who also underlines the need for a full conception of justice to include more than distributional elements.

that we conceptualise EJ here as justice between individual humans, for we can better identify their needs as units of moral consideration and through a better understanding of human needs the environment can benefit too[90]. For the reasons given above this cannot be allowed to produce an unrestricted and unrealistic distribution of environmental goods: the justice to the environment element provides boundaries and limitations on it. Where these boundaries lie is to be determined externally and the task of establishing and enforcing these limitations is not an enviable one. They must take into consideration a salmagundi of considerations including obligations to future generations; the intrinsic value of nature; moral duties owed to non-human entities; carrying capacities and regeneration rates; and secondary implications of resource use (for example, huge mining projects such as that being undertaken in the tar sands of Alberta alter the landscape immeasurably and irreversibly[91]).

(e) Summary

Having navigated the jungle that is international EJ, hopefully a clear pathway has now emerged. The key features to be picked out of this construction of EJ are as follows:

(i) We are looking initially at the distributive elements of justice with the hope that a fuller understanding here can inform other aspects of procedural and corrective justice.

(ii) Precise details of a just distribution may elude us, but we can rely on key supporting principles.

(iii) Our construction of justice must be truly global in scope.

(iv) The most appropriate units of moral consideration at this stage are individual humans and our primary concern is the condition of current human lives.

(v) Boundary conditions imposed by reality cannot be ignored. The usefulness of conceptualising this as justice to the environment is left here as an open question.

Underlying all this is the claim that EJ is an aspiration which the law and other institutions ought to aim for. This alone may paint a rather passive picture of EJ as an

[90] More expansive notions of the human self to include our relationships with both other human and nonhuman life forms may prove a worthwhile and realistic strategy. (Gillespie, 1997).
[91] Timoney & Lee (2009).

arbitrary and abstract ambition, but it is also an active force for legitimising positive action. The creation of just international environmental laws is essential to the protection of global (and local) environments and we look now to see how this construction of EJ can communicate with more established principles of international environmental law.

III - Interacting With Westphalia

International environmental law makes use of several principles to help conjoin some of the more divergent aspects contained within it. The legal status and even the very nature of many of these principles is unclear[92], but their relevance to the shape and form of the law is without doubt. Synergistic relationships between these principles and EJ may allow for the advancement of some of these basic tenets of justice through more established legal pathways, sharing and informing the motivation and meaning of one another. In this section, we will look into how EJ can be 'hung on the pegs' of several principles of international environmental law, thus allowing it to interact with Westphalian norms. It may well be the case that the construction of EJ above is not entirely watertight and impervious to criticism, but what we are seeking here is some guidance and strategy in the formation of international law. It is therefore of more use and relevance to ask how a sensible and defendable construction of justice can have an impact in reality rather than worrying about the minutiae of philosophical arguments.

(a) Intragenerational Equity

Strong ties exist between the intertwined concepts of equity, justice and fairness and the burgeoning concept of intragenerational equity in international environmental law lies very much in the vicinity of EJ. Thomas Franck suggests that fairness is to be understood as a "composite of two independent variables: legitimacy and justice"[93] and we can visualise equity as functioning as a more practical tool for implementing the justice aspect of this[94]. That is, if we wish to bring about EJ, we must play by the rules determined by equity as well as ensuring that our processes are legitimate. The former

[92] Paradell-Trius (2000).
[93] Franck (1995) pg. 47. In the context of this essay, the legitimacy aspect ties in with procedural elements of EJ which are not being examined in detail here, and the justice ought to be understood as distributive justice.
[94] Thus interpreting equity in line with Jutta Brunée (2009) as restricted to matters of distributive justice

realisation is helpful since we can attempt to secure justice between individuals via the routes through international law offered by equity: clarity to the situation is offered by retaining justice as a concept functioning between individuals and equity between states.

So what is equity? Equity informs us when it is appropriate to treat actors as identical, and when adjustments need to be made to ensure a just outcome[95]. Of particular relevance here is the quest for equitable burden sharing and equitable resource use across the globe, for example, a 'first-come, first-served' style arrangement for the exploitation of a natural resource may not produce the most acceptable outcome due to states with more advanced technological infrastructure being able to access a disproportionate share of the resource[96]. Notions of equity can be traced throughout the content of the Rio Declaration and associated legal instruments[97], demonstrating their relevance to modern international environmental law. When applied to current distribution patterns, these notions have been labelled intragenerational equity, which is emerging as a useful tool. The ICJ has already indicated the applicability of equity as a general principle of law and its attributes in informing legal norms and just outcomes in cases determining maritime boundaries[98]: in these cases the need for interpreting the law to produce the fairest outcome having regard for the particularities of each case was shown, a lesson which not only *can* be transplanted into other areas of law, but *should* be according to Judge Tanaka – "To treat unequal matters differently according to their inequality is not only permitted but required"[99]. This is the notion of equity operating as equity *infra legem* – one of its three potential uses in international law as detailed by Dinah Shelton and the most readily accessible version when talking of the environment[100].

Determination of allocations is then dependent on what are to be considered the most

[95] Shelton (2007). One of the clearest manifestations of this is that income is a sensible indicator for taxation levels, but not for voting rights.
[96] Cullet (2003).
[97] Birnie, Boyle & Redgwell (2009).
[98] *Case Concerning the Continental Shelf (Tunisia/Libya)*, Judgment of 24 February 1982, (1982), ICJ Rep. 18; *North Sea Continental Shelf Cases (FRG/Den./Neth.),* Judgement of 20 February 1969, (1969) ICJ Rep. 3.
[99]Dissenting Opinion of Judge Tanaka, South West Africa, Second Phase, Judgement, ICJ Reports 1966, pg. 6, 306. Cited in Cullet (2003).
[100] Shelton (2009) The other two are *contra legem* and *praeter legem* which may also have uses in environmental law but will not be discussed in detail here.

befitting variables, for which Shelton suggests "need, capacity, prior entitlement, 'just deserts', the greatest good for the greatest number, or strict equality of treatment"[101] as possibilities – almost certainly a non-exhaustive list, especially when one considers the cultural variations which exist in interpreting what is to be deemed equitable[102]. Choosing a variable may well be a subjective decision, but conceptions of justice can help us here by using the criteria for a just distribution outlined above to inform it. This feedback indicates that equitable interstate allocations must not prejudice against the already weak and should not hamper the proper functioning of any state. In addition, in order to meet Franck's legitimacy test, allocations must be the result of transparent and inclusive processes, which necessitates the involvement of all affected parties, including traditionally disenfranchised communities[103]. This leads us to realise that equity allows core principles of EJ to be made relevant to the behaviour of states and other international actors by informing what it means to be acting equitably. If the construction of EJ above is to be taken, this means that states must prevent the heaviest burdens falling on those least able to deal with them (both inside and outside their boundaries); ensure resource distributions do not hamper the functionings of any individuals and favour the currently least well off; and also act in a spirit of global cooperation through activities such as information sharing and mutual assistance. Approaches premised on solidarity in this way are considerably more beneficial to all and are in fact required of us by our interdependence and it is these *erga omnes* style obligations of states that are emerging as useful tools in dealing with shared resources and issues of common concern[104]. Intragenerational equity needs to be interpreted beyond a restricted version of it as primarily about corrective justice[105] to embrace a more active role in the drafting of legislation. Seeing equity as "providing a compromise between permanent sovereignty

[101] Shelton (2009) at pg. 69.
[102] Morris & Leung (2000) demonstrate this from the point of view of individuals. This of course raises concerns over the authenticity of any construction of justice to be applied internationally, but hopefully our underlying principles are broad and flexible enough to withstand this challenge. See also Linnerooth-Bayer (1999).
[103] The EJM has done much to highlight the importance of this and internationally this necessity has been noted through the provision of funding assistance to LDCs to attend international negotiations. For example, the Government of Canada recently provided CA$500,000 for this purpose (Environment Canada, 2010).
[104] Kokott (1999); Bruneé (2007).
[105] See Franck's three models of equitable allocation: 'corrective equity'; 'broadly conceived equity' and 'common heritage equity' for more details on possible interpretations of equity. Franck (1995) at pg. 57.

over natural resources and a common concern such as the conservation of biological diversity"[106] illuminates how it may take on this role.

The tension created by intragenerational equity pulls most strongly over the divide between developed and developing countries: vast differences in financial wealth, infrastructure and stocks of natural resources imply a strong need for equity to facilitate just outcomes. This in part has led to a principle which in some ways can be viewed as an application of intragenerational equity, dealing in slightly more concrete terms with the allocation of burdens in dealing with environmental problems.

(b) Common But Differentiated Responsibilities

The principle of common but differentiated responsibilities (CBDR) is a very useful prism for viewing justice considerations in international environmental law. Underlying CBDR are the twin notions that global environmental problems require the participation of all (common responsibilities), but that the nature and extent of that participation is dependent on certain variables (differentiated responsibilities)[107]. What these variables are and why they are relevant is a contentious issue - justification for CBDR comes in several flavours. In general, historical responsibility is the foundation preferred by developing countries whereas developed countries speak of current capabilities as the important factor. Differentiated responsibilities have tended to take two different forms: more advanced substantive commitments[108] and requirements for assistance[109]. Needless to say, fleshing out the details of these is open to interpretation and Christopher Stone isolates three possible versions of CBDR which result in markedly different outcomes[110].

The current legal status of CBDR is unclear, although it is improbable that it can be considered a part of customary international law[111], instead, "the primary effect of the

[106] Shelton (2007) at pg. 653.
[107] In the words of Duncan French, who provides a very useful synopsis of CBDR, "common responsibilities need not result in common obligations" French (2000) at pg. 46.
[108] Consider, for example, the Montreal Protocol which satisfactorily formulated a regime to deal with ozone depletion to the extent that "to [Biermann's] knowledge, there are today no governments that consider the amended Montreal Protocol as an unjust treaty." Biermann (1999) at pg. 163.
[109] Matsui (2002).
[110] He calls these *rational bargaining, equitable* and *inefficient*. The article also picks out many of the pitfalls of CBDR and we are reminded that the differentiated part does not eliminate certain common responsibilities (lack of resources is not an excuse for certain acts). Stone (2004).
[111] Birnie, Boyle & Redgwell (2009); Brunnée (2007); Matsui (2002).

differentiation principle has been to structure treaty-based regimes."[112] Difficulties in arguing for CBDR as customary law include the inability for a claim to be made based on it[113] and the varying interpretations of its meaning and repercussions[114].

Failing the test of customary law status does not signpost immediate ruination: looking to what the aims of CBDR are reveals its potential in this field. Seeking to inform the creation of legislation, CBDR can be viewed as a tool which aims to contribute to a fairer world system and from an EJ perspective its importance is obvious[115] where we can think of it in terms of "corrective measures to remedy existing inequalities"[116]. At the crux of CBDR we have a recognition that treatment of actors should be *context dependent*: we should not treat everyone identically, but should differentiate based on salient features. The pluralistic grounding of CBDR causes difficulties for cementing its place within legal institutions but cannot be allowed to detract from its usefulness in the drafting of legislation, which predates the Rio Declaration through wordings such as 'as appropriate' and 'as far as possible' in older treaties[117].

A further problem of CBDR is the limited extent to which it has been deployed[118]: it is usually transformed into a differentiation between developed and developing states in the international arena and this omits the fact that not all states within either of these categories are alike[119] and ignores the disparities in both wealth and responsibility *within* countries. Climate change legislation has made moves to address the former oversight through differentiated emission reduction targets in the Kyoto Protocol[120] and acknowledgement of the special situations of certain vulnerable countries[121], but it is

[112] Brunnée (2007) at pg. 567.
[113] Birnie, Boyle & Redgwell (2009).
[114] See e.g. the statement of the US delegation to Principle 7 of the Rio Declaration: Matsui (2002) at pg. 155.
[115] It must be remembered though that CBDR is not a principle of justice, but of law: "the concept plays an important role in framing a debate *about* global climate justice; but it does not currently constitute a global principle *of* justice." Brunnée (2009) at pg. 317 (emphasis in original).
[116] Cullet (2003) at pg. 28.
[117] French (2000).
[118] This may well turn out to be just a problem in the infancy of CBDR.
[119] Bortscheller (2010) points out that climate change legislation does not distinguish between China and Botswana. See also Heyward (2007).
[120] Though these allocations are voluntary and in many ways arbitrary (Babiker & Eckaus, 2000).
[121] Article 4(8) of the UNFCCC.

limited and does not begin to address the issue of "a Germany sitting right in India"[122].

Implications of CBDR in line with our cosmopolitan perspective of EJ demand that responsibilities are differentiated both within and between states according to the situation and capabilities of individuals. The upshot of this is that if CBDR is to remain a meaningful and useful tool, it must look beyond a dichromatic world and embrace and guide the need for action by those capable to do so across the world[123]. This will not be easy but opportunities do exist. Binding commitments for developing states with a significant population capable of participating in abatement strategies must include provisos for such commitments to fall on the appropriate members of their society and developed states too must be bound to ensure that their policies do not disproportionately affect the vulnerable[124]. International law may not currently be able to be proscriptive about the nature of states' internal policies, but broad ideals described above, based on justice between individuals can be enshrined. In addition to these reinforced standards, care must be taken to ensure that less rigorous environmental regulation in less affluent areas[125] does not result in exploitation by those with the responsibility (and ability) to prevent this[126], with Lawrence Summers' leaked memo that (*inter alia*) "…the economic logic behind dumping a load of toxic waste in the lowest wage country is impeccable…"[127] a reminder of the risks of neoliberal free markets.

This cosmopolitan perspective helps to overcome the troublesome issue of current individuals bearing responsibility for their past compatriots: it is acts of justice, not of charity, that are required by those currently able to play a more substantial role in the amelioration of global environmental problems due to their enhanced capabilities and not

[122] Sachs (2001), cited in Harris (2010) at pg. 129. The point being made is that there are as many affluent middle-class individuals in India as in Germany: their capabilities seem similar, but their responsibilities under international law are not.
[123] Bortscheller (2010).
[124] Protection of the vulnerable on the international stage is something already being enacted by international human rights law and The Bamaco Convention on the Ban of the Import into Africa and Control of Trans-boundary Movement and Management of Hazardous Wastes within Africa (30 I.L.M. 773 (1991)) "shows how it is possible for an international convention to regulate production and consumption patterns" (Matsui, 2002 at pg. 165), which may be of help in this context.
[125] Which may be justifiable by CBDR since poorer areas may not have the capability for high levels of protection.
[126] See Matsui (2002) at pg. 158 for a description of the room for exploitation.
[127]Summers was at the time (1991) Chief Economist at the World Bank. For the full text of the memo, see http://www.jacksonprogressive.com/issues/summersmemo.html (last accessed 14/8/11). Swaney (1994).

due to the actions of their great-great-grandmother[128]. The fact that past events have caused this capability is relevant, but not the primary force driving the need for action

CBDR is an essential gateway for EJ to enter the international legal order. It has brought the issue of the vastly different situations experienced across the world to the table and demanded reflection of this in formal treaty arrangements. Although the claims of culpability for past actions resonate with ideals of justice[129], it may prove more fruitful and practical to adopt an approach based on current capabilities of individuals for determining responsibilities when using CBDR. The two are intertwined, as will be demonstrated further by investigation of another important legal principle, which can deal more appropriately and succinctly with the issue of historical responsibility.

(c) The Polluter Pays Principle

The polluter pays principle (PPP) is, in theory, a simple manifestation of economic norms in environmental law with its roots stretching back to OECD Recommendations of the 1970s[130]. The idea underlying it is that it is the polluter who should bear the brunt of the costs of any pollution that is caused and not the community as a whole. The multifaceted nature of the PPP is encapsulated by Sanford E. Gaines who describes it as "a powerful economic principle [which] offers moral guidance"[131].

Inevitably, this overlap does not transform itself seamlessly into a readymade and easily applicable set of legal rules and determining who the polluter is one of the more sensitive issues. The ties with EJ may be more readily apparent through seeing the PPP as an embodiment of corrective justice, but there are clear implications in terms of

[128] That is, we assume Singer's motif that "if it is in our power to prevent something very bad from happening, without thereby sacrificing anything of comparable moral significance, we ought to do it" is both valid and applicable here. (Singer, 1993 at pg.229).
[129] For an arrangement to be just, it must have come about as the result of just procedures: "[w]hen a party has in the past taken an unfair advantage of others by imposing costs upon them without their consent, those who have been unilaterally put at a disadvantage are entitled to demand that in the future the offending party shoulder burdens that are unequal at least to the extent of the unfair advantage previously taken, in order to restore equality" Shue (1999) at pg. 534, cited in Matsui (2002) at pg. 155, where it is described as "the most persuasive argument, in terms of international law, for differential responsibility". Also see Rajamani (2000).
[130] OECD, Council Recommendations C (72)128; C (74)223. Mainstream acceptance of the thrust of the PPP can be seen by its inclusion in e.g. the Treaty of the Functioning of the European Union (Lisbon Treaty), Title XX, Article 191(2) and the Rio Declaration (Principle 16).
[131] The full quote follows: "As the embodiment of a powerful economic principle, it provides a starting point for analysis. As an allusion to a more deeply rooted sense of fairness, it offers moral guidance for the design of policy. As an expression of an aspiration for a better environment, it offers spiritual sustenance for the environmental struggles ahead", Gaines (1991) at pg. 496.

distributive justice too[132] - the PPP allows internalisation of environmental costs, preventing the traditional economic view of the environment as a 'free resource' to be used and abused at will, and this realignment of burdens can play a part in bringing about a more just state of affairs through a redistribution of wealth.

Identification of the party responsible for pollution is not a straightforward issue; take the example of a diesel powered bus: is it the driver, the passengers, the bus operating company, the bus manufacturers or even the fossil fuel extractors who ought to be considered responsible for causing the pollution? An argument exists that the charge should be levied higher up the chain, which can then be passed down to individuals using any such service. However, it does not seem to resonate with our construction of EJ that a low paid worker who needs to commute by bus to work should have to face this additional cost while executives of multinational oil companies simply pass the buck[133]. This would not be a distribution which favours the least advantaged members of society but moreover potentially penalises individuals who may be helpless to alter their situation, leading to the poor having to reduce their consumption and not the rich[134]. This risk of the PPP transforming into a 'those who can pay may pollute'[135] principle is a dangerous one which can be avoided if we permit EJ considerations to feed into the creation of environmental law and policy.

As with CBDR, the thorny issue of historical responsibility threatens to derail attempts to regulate pollution and environmental protection according to notions of justice since enforcing the PPP retroactively on historical pollution creates the almost unanswerable question of who the polluter is in such incidences. We cannot however, merely gloss over the issue for fear of "[i]gnoring historical accountability [giving] a retrospective license to past emitters from developed countries to disadvantage the poorer countries"[136]. Given

[132] Shelton (2007): the two are of course interrelated at any rate.
[133] This could be extended to an argument along the lines of Simon Caney's (2005, at pg. 755) claim that international regimes and institutions hold some blame for climate change for encouraging polluting behaviour. Here, one could argue that the individual has been forced into their actions by institutions around them and societal norms and that blame really lies with those promoting such agendas.
[134] Bugge (2009).Consider the example of a very poor person in the US having no choice but to get to work by car, even if they would prefer to commute by public transport. (Harris, 2010, at pg. 131)
[135] Bugge (2009).
[136] Neumayer (2000) at pg. 187.

our cosmopolitan perspective on EJ, it is befitting to evaluate the role of current individuals rather than groups or collectives with regards to past pollution. The fluid character of both a state's membership and its boundaries make it difficult to hold a state itself directly and entirely responsible for past actions of previous generations who happened to occupy the same physical territory as some individuals today. However, previous policies of such entities not only caused pollution, but also often resulted in an improved standard of living for current inhabitants. For example, Janssen et al. have found a significant relationship between GNP per capita and the relative contribution to the carbon dioxide concentration rise by fossil fuel combustion per capita[137]. Those that are benefitting then from an improved standard of living due to past pollution must be the closest approximation we can muster for the polluters in this case[138], despite Parfit's 'non-identity problem'[139]. Coupled with their ability to pay, it seems appropriate for more well off individuals the world over whose higher material wealth is (predominantly) due to extensive environmental degradation to shoulder the costs of this degradation. Shue[140] warns of the danger of confusing punishment and responsibility and this is paramount here: it makes no sense (and is unjust) to *punish* today's affluent for past actions taken by other people, but if we are to aim to deal with global environmental problems in an environmentally just way, then those who have benefitted from past pollution must be held *responsible* for a significant portion of it. Holding states responsible to the appropriate degree for the costs of environmental pollution as proxies for their current citizenry and their situations may permit solutions which can be considered both just and in line with the PPP. In short, the line that is being advocated here is that although current individuals may not be the polluters of the past, they have a moral responsibility to take action to ameliorate any harm it causes which is best transformed into a legal responsibility of states at the international level. The PPP is more suited to dealing with

[137] Janssen et al. (1992), cited in Neumayer (2000).
[138] As noted above, identifying the polluter is rarely a straightforward task in cases of transboundary pollution, so surely a degree of flexibility is acceptable in this context.
[139] Parfit states that we cannot talk of past action having an impact on present individuals since it is those past actions which resulted in their very existence. That is, no one is better off or worse off for past actions, but simply they either exist or do not. Cf. Caney (2005) at pg. 757.
[140] Shue (1999) at pg. 535.

historical responsibility than CBDR, although a somewhat creative interpretation of 'polluter' may be needed in some instances; it can be the fault based complement to the CBDR's no-fault approach. This means that we can deflect Friman and Linnér's criticism of CBDR[141] by noting that the PPP can operate as the forum for 'liability, guilt and debt'.

It seems then that the PPP needs some guidelines working around it in order for it to be coherent and morally acceptable. Simon Caney has detailed many of the shortcomings of the PPP[142], but does not reject it outright, instead suggesting that it needs supplementing if it is to have moral relevance and practical force[143]. An augmentation in the form of an 'ability to pay' principle needs to be applied which informs and moderates the PPP: both those who are unable to pay should be excused and the most advantaged should take on additional responsibilities. This 'Hybrid Account' does result in actors taking on costs which actually goes *against* the PPP in its more traditional format, but Caney defends it as a moral necessity if we are to avoid being disingenuous about assisting the poor and disadvantaged suffering from environmental harm[144]. An important feature of the account is the construction of systems and institutions which encourage genuine participation in it and this is essential if the PPP is to be able to act as a carrier for EJ in international environmental law.

(d) Sustainable Development

It has become increasingly difficult to discuss issues of the environment and humanity without at least alluding to the concept of sustainable development. In international environmental law, sustainable development remains an elusive concept, with its full meaning and implications yet to have been conclusively pinned down[145]. It is not as precise a principle as the three discussed so far, so investigating if it can be used as a

[141] "CDBR has been operationalized more in line with capacity than historical responsibility, rationalised with the rhetoric of aid, voluntary action, and market efficiency, rather than in line with responsibility, liability, guilt, or debt" Friman & Linnér (2008) at pg. 343.
[142] Caney (2005). In particular with respect to climate change, he highlights three groups who lie outside the scope of the PPP: "(i) earlier generations (*cannot pay*); (ii) those who are excusable ignorant (*should not be expected to pay*) and (iii) those who do not comply with their duty not to emit excessive amounts of GHGs (*will not pay*)."
[143] Caney (2005).
[144] Caney (2005).
[145] Birnie, Boyle & Redgwell (2009); Magraw & Hawke (2007).

route for EJ into international environmental law may be less useful than comparing and contrasting the nature and role of the two concepts.

Sustainable development is essentially about the balancing of economic development, environmental protection and social development. Numerous definitions and formulations of it have been offered without any fully encapsulating its every nuance[146]. Certainly it contains within it a diversity of elements, such as intra- and intergenerational equity; sustainable use; integration; international co-operation and prevention of environmental harm. Manifestations of sustainable development seek to reconcile these elements into meaningful and manageable guidelines. It has primarily been interpreted to have two functions in international law: Judge Weeramantry views it as a reconciling norm of customary international law which is "a part of modern international law by reason not only of its inescapable logical necessity, but also by reason of its wide and general acceptable by the global community"[147]. He sees it as having true normative value in a quasi-judicial role, informing how disparate fields of international law should interact: it resolves tensions and promotes both development and environmental protection. In short, there is a procedural duty to ensure sustainability is accounted for in development projects by, for example, performing an environmental impact assessment[148].

On the other hand, Vaughan Lowe reasons that sustainable development "exemplifies another species of normativity"[149] since it cannot exist as a traditional norm of international law, lacking as it does any specific content and the necessary equipment for it to be enforced[150]. Lowe offers several derivations of sustainable development which may be said to have normative value, such as 'Develop sustainably' or 'States are at liberty to develop sustainably'[151] but ultimately argues that sustainable development itself *cannot* be a norm of international law, even to the extent that some of its

[146] The most commonly cited definition is from the Brundtland Commision's report, Our Common Future, which Magraw and Hawke (2007) claim has acquired a quasi-official status.
[147] Case Concerning the Gabçíkovo-Nagymaros Project (Hungary v. Slovakia), Separate Opinion of Vice-President, Judge Weeramantry at pg. 95.
[148] The recent ICJ judgement in the *Case Concerning Pulp Mills on the River Uruguay (Arg./Urg.),* Judgment of 20 April 2010 (2010), cemented the need to perform an EIA in international law (para. 205).
[149] Lowe (1999) at pg. 21.
[150] Lowe (1999).
[151] Lowe (1999) at pg. 25.

constituent elements themselves (e.g. sustainable use) are difficult to conceive of as norms[152]. Instead, Lowe suggests that we formulate sustainable development as a "meta-principle, acting upon other legal rules and principles ... pushing and pulling the boundaries of true primary norms"[153] and points out that this is not directly in conflict with Judge Weeramantry's opinion, but simply offers a more accurate depiction of how sustainable development functions in international law.

Bubbling to the surface now is the realisation that this 'meta-principle' construct can fit well with EJ too: it also lacks a directly norm creating character, instead functioning as a modifier for currently existing norms and practices. If we accept Lowe's meta-principle theory of sustainable development and appropriate it for EJ too, does this leave EJ as just another layer of complication onto an already tortuous field, preventing rather than aiding meaningful progress? Surely not, for it is quite clearly not the same as sustainable development: neither can be subsumed into nor fully explained by the other, rather each can colour in the details and cast new light on the other. For example, the fuller version of the Brundtland Commission's definition of sustainable development contains reference to "the concept of 'needs', in particular the essential needs of the world's poor, to which over-riding priority should be given"[154]. EJ helps us to understand what these needs are (in terms of a just distribution) and why they are to be a priority. Weighing up the advantages and disadvantages of sustainable development and EJ, seeing them in terms of conflicting paradigms, does not seem as useful an approach as asking how they inform and support each other. Patrick Hayden's criticism of sustainable development as far too close a bed fellow of "global capitalism predicated on the expansion of commodity production and thus the continued intense consumption and exploitation of the earth's resources"[155] contains important truths: sustainable development must avoid becoming too heavily biased towards any one of its three pillars. However, his call for a shift

[152] Lowe (1999).
[153] Lowe (1999) at pg. 31.
[154] Magraw and Hawke (2007) at pg. 618.
[155] Hayden (2005) at pg. 128.

entirely away from it and towards EJ as a replacement[156] may end up doing more harm than good since certain aspects of sustainable development are not to be found in EJ, notably the important lesson of integration[157] which runs through the ILA's Declaration on Sustainable Development[158]. Likewise sustainable development is quiet on the issue of developed countries assisting developing countries, something which EJ is more naturally informative on, asserting the duty of the rich everywhere to assist the poor everywhere.

Sustainable development then gives meaning to how other principles of international law are to be interpreted, just as we have shown how EJ does. Since both sustainable development and EJ provide global perspectives, it is "inevitable and appropriate" [159] that their character is general: overly proscriptive demands could hinder their interpretation at local levels. EJ and sustainable development have the potential for working in tandem to direct and shape international environmental law and policy. Both are subject to criticism due to their anthropocentric focus, but fuller understanding of human needs and environmental protection can guide against this in both: the problem lies not in the concepts themselves, but in interpretations of them and their constituent elements. The stronger focus of EJ on the current state of affairs and the inequalities present exacerbates the need for it to factor into the creation and application of law, and it can provide one metric by which sustainable development can be appraised:

"Finally, the success of sustainable development will be measured by the conditions existing in communities inhabited by people of color in the United States and around the world, where some of the most destructive industries ... are located. For this reason, it is critical that international agreements and acts of cooperation focus on the issue of racial discrimination in environmental protection and development"[160]

[156] Hayden (2005).
[157] Which may, in practise, carry the greatest impact of the notion of sustainable development: by ensuring environmental considerations permeate into areas from which they are traditionally absent, more well-rounded approaches can be secured. For example, it may help strengthen weak and underfunded domestic environment ministries.
[158] ILA New Delhi Declaration of Principles of International Law Relating to Sustainable Development, ILA Resolution 3/2002 (in particular section 7).
[159] Magraw & Hawke (2007). It is used only in reference to sustainable development, but it is relevant to EJ too.
[160] Bullard, Johnson & Torres (2005) at pp. 296-7.

IV – CLIMATE CHANGE

(a) Greenhouse Gases and Global Threats

The Earth's atmosphere is getting hotter[161]. Through a process known as the greenhouse effect, increasing concentrations of certain gases in the atmosphere are causing additional heat to be trapped into the climate system on this planet. This additional heat will cause changes and disruptions to long term weather patterns across the globe on a scale and timeframe unprecedented in the course of human history[162]: this is encapsulated by the term climate change. Sea level rise, water shortages, more frequent and more extreme weather patterns, disruptions to natural habitats and biodiversity and melting Arctic sea ice[163] are among the expected changes over the coming decades. The multiple outputs of climate change are matched in complexity by the nature of the greenhouse effect itself: there is not one simple cause and effect style model available to chart it, and many additional feedbacks and mechanisms need to be included in any predictions of the long term effects of climate change.

The greenhouse effect is a natural phenomenon: a range of molecules present in the Earth's atmosphere absorb radiation at wavelengths that are emitted by the Earth – these gases are known as greenhouse gases (GHGs). Since the Sun emits radiation over a different range of wavelengths[164], this means that energy, in the form of heat, becomes trapped inside the atmosphere, having an overall warming effect. The presence of water, carbon dioxide and other GHGs alone at their background concentrations[165] increases the average surface temperature of Earth from -6°C to 15°C[166], making life as we know it possible on this planet. Although the relationship is not a straightforward one - dependent as it is on the several mechanisms for absorption; absorption saturation

[161] IPCC (2007).
[162] Houghton (2010).
[163] IPCC (2007).
[164] It is a much hotter body so its black body radiation spectrum peaks at much shorter wavelengths (around the visible light part of the spectrum, approximately 0.5microns) compared to the Earth (peaks around 10 microns).
[165] 'Background' or 'pre-industrial' levels. These concentrations have varied over time, so it is somewhat meaningless to talk of 'natural' levels.
[166] Houghton (2010).

levels[167]; Doppler and collisional broadening of absorption wavelengths and a molecule's atmospheric lifetime – more GHGs in the atmosphere means more absorption and so a warmer planet. This additional absorption is known as radiative forcing and is a common quantifier for levels of anthropogenic global warming.

Unfortunately, further details and features of our planet need also to be considered to get the full picture of climate change: clouds can have both a positive and a negative effect on radiative forcing[168]; the presence of sea ice and other snow cover affects the albedo of the Earth's surface; the capacity of the oceans to absorb certain GHGs is variable and there are sinks as well as sources of GHGs on the surface. The Intergovernmental Panel on Climate Change (IPCC) was established in 1988 by the WMO and UNEP to provide overviews on the scientific understanding of climate change and the related processes as well as information on the socio-economic implications of any predicted changes. The latest of these reports indicates that not only is it very likely[169] that recent increases in temperature are due to anthropogenic interference, but that the impacts of climate change on humanity will be felt most strongly by poor communities in developing countries[170]. Their vulnerability to such changes further magnifies their peril.

There must be near universal agreement that the overall effects of climate change will be bad – increased risk of extinctions; flooding; highly damaging extreme weather events and increased water stress[171] are all things that we usually wish to avoid. Seeing as emitting GHGs is intensifying the frequency of these events, the sensible solution is to attempt to reduce the amount of GHGs being emitted into the atmosphere as well as preparing for future events. However, it is not as simple (let alone economically or even physically possible) as ceasing to emit GHGs tomorrow. The current build-up of gases in the atmosphere will already inevitably cause more warming and even the oft cited 1990

[167] Note that 'near saturated' absorption bands (like those for CO_2) still give an increased contribution to greenhouse warming with increased gas density since the relationship between temperature and absorption is an exponential one, Houghton (2002, 2010).
[168] They both reflect and act as blankets – the impact of clouds remains a big factor in modelling climate scenarios (Le Treut, Somerville et al., 2007, especially §1.5.2).
[169] IPCC (2007), §2.4. See the report for a definition of 'very likely'.
[170] See especially IPCC (2007), §3.3 and §5.2. See also Thomas & Twyman (2005) and Tol et al. (2004).
[171] These are just some of the potential impacts of a changing climate, IPCC (2007).

levels of emissions are above the Earth's current capacity to remove the GHGs through natural processes[172]. Of course, the Earth finds no problem in a changing atmosphere: it is the species *Homo sapiens* and other vulnerable life forms who will. If we wish to avoid this suffering, then serious attempts must be made to avoid runaway climate change.

It seems apt for any legal regime attempting to minimise the impacts of climate change to be aware of the reality of the global nature of its causes and effects: it does not matter where any given package of GHGs are emitted in the world, the effects will be the same and there is no correlation between the location of emissions and the location of impacts on the Earth's climate system. The implication here is that a genuinely global response is needed to bring about success. If a global response is needed to an issue so tied up with almost every sector of human society (energy, water, transport and agricultural policies will all have huge impacts on future climate change), then there needs to be some guidance as to how such a response should be crafted and implemented across the world. EJ must surely play a role here: the distribution of the harms associated with climate change weighs heavily on the shoulders of those least able to deal with them and least responsible for the accumulation of GHGs in the atmosphere. Our construction of justice dictates that such unequal burdens are unacceptable, how then should the international community respond to this discrepancy and what progress has been made to date through the formulation and implementation of legal instruments?

(b) Requirements of a Climate Change Regime

As evidenced by the brief outline of the nature of climate change above, dealing with the issue on a global scale requires an involved and multifaceted approach and it is of no great surprise that attempts to deal with climate change throw up a cacophony of issues and complexities which are often intermingled and impossible to separate. What we must not let this do is muddy the waters to such an extent that overarching principles of justice are overlooked in place of political and economic compromises and technological

[172] Shue (1993)

solutions[173]. Coarse perspectives on the key issues can allow us to draw up some requirements of climate change legislation enforced by our construction of EJ[174].

Two primary areas for action can be identified: mitigation (that is, preventing further emission of GHGs) and adaptation (creating structures and institutions that allow the negative impacts of climate change to be minimised). It is a fair assumption that emitting GHGs has positive effects for those doing the emitting: it allows energy production, improved agriculture and the creation of infrastructures essential to the development and well-being of human societies. Given the current reliance of the global economy on fossil fuels, any changes to this structure will necessarily be costly and so the mitigation side of the climate change regime concerns two aspects of distributional justice: how much can each actor emit and how should the associated costs of GHG reduction be distributed? Adaptation measures can again be assumed to incur an additional burden in terms of cost on those carrying them out and the distribution of this cost is too of concern to ideas of distributional justice. Both aspects also require a considerable degree of expertise and technical knowhow which are currently distributed unequally across global societies. Without attempting to claim that acceptable measures to combat climate change are simply issues of how to distribute certain burdens[175], we can see how this is one dimension worthy of enquiry and to which our construction of EJ is particularly relevant.

What broad requirements then can we make of the regime in order for it to be considered just? Of primary concern is the situation of those most impoverished communities who will be damaged by climate change. We must not allow their basic needs and functionings to be impinged on through this form of environmental harm. Therefore, additional burdens in terms of restricted emissions should not fall on these communities and instead, any distribution should favour them and encourage their ability to alleviate poverty and obtain an acceptable standard of living. On the other hand, we see that there are a number of people whose standard of living would not be reduced to

[173] Friman & Linnér (2008).
[174] The following draws on the work of Henry Shue (1993), although Chukwurmerije Okereke (2010) aptly points out that there are many more detailed ways of conceiving climate justice.
[175] There is also a need for (e.g.) fair procedures, education programmes and changing lifestyle patterns.

below acceptable levels by a reduction in GHG emissions being imposed on them. The distinction being made here is one between *luxury* emissions and *subsistence* emissions[176] and this distinction is crucial to any attempt to mitigate climate change in a just manner: preferences do not all have the same urgency underpinning them, and this ought to be reflected by permitting *subsistence* emissions at the cost of *luxury* emissions, even if the economic cost of doing so is greater[177]. Essential to achieving this requirement is preventing the currently more powerful players from exerting their influence to engineer outcomes which favour them and their priorities[178] and engaging disenfranchised communities in solution forming[179].

Seeing as the mitigation of climate change ought to be considered an issue of common concern[180] for all humanity, the principle of common but differentiated responsibilities can assist us in determining how the costs for this should be distributed. That is, the entire global community has a responsibility to deal with the problem, but the nature and extent of this responsibility is to be *context dependent*. Legislation then must reflect this by channelling the costs associated with mitigation strategies appropriately according to the capabilities of the various actors. Essentially, what we are looking for then is a commitment by richer people and developed countries to cover the majority of the costs of mitigation, allowing a distribution in line with Rawlsian principles.

Who should pay for adaptation strategies can also be informed by notions of EJ. Adaptation measures are now inevitable and will need to be taken at local, regional and international levels by individuals, organisations and governments[181]. Financing them is by no means a simple operation but as guidance, Simon Caney's Hybrid Account of the PPP[182] outlined above suggests that those actors who can be best identified as responsible for past emissions who also have the ability to pay should bear this cost[183].

[176] Shue (1993).
[177] Shue (1993).
[178] Okereke (2010).
[179] Thomas & Twyman (2005).
[180] A view endorsed by the Preamble of the UNFCCC.
[181] Paavola (2005).
[182] Which is relevant here since we are talking about the costs incurred as a result of pollution.
[183] Emissions made before the harmful nature of GHGs was fully understood make this an even more complicated field (Heyward, 2007; Caney, 2005), perhaps some sort of discounting is in order.

Note that this justification is necessarily different from that above for mitigation costs, but reaches almost the same conclusion as to who must pay the most. In both cases, funding requirements are not about hand-outs or acts of kindness, but acts of justice.

The reality of enacting policies to prevent climate change is that currently much of the world does not have access to the specific knowledge and skills needed for effective action. There is limited point in drawing up ambitious proposals and even providing the financial assistance to effect such proposals if it will prove impossible for them to be done correctly. Thus it only makes sense for access to such knowledge to be shared globally.

Finally, it is important to recall the need for a cosmopolitan perspective when assessing the acceptability of any legal regime from an EJ point of view. Measures taken to combat climate change cannot be said to be just if rich countries pass their burdens on to their poorer members, and rich individuals in poor countries cannot be allowed to shirk responsibility premised on the poverty of their immediate geographical neighbours. The particularities of climate change hitting the poor hardest gives added force to the need for justice considerations to feature at all levels[184]. Hence, fail-safes must ensure that burdens and benefits are distributed appropriately to the relevant individuals within national communities as well as amongst states. A corollary to this is the necessity of a multiplex format for classifying states: the traditional developing/developed split simply does not provide an accurate enough depiction of the differences between (say) Germany, Russia, USA, China, Afghanistan and Mauritius.

In summary, EJ has allowed the identification of six requirements which must be fulfilled both in theory and in practice if the climate regime is to be a just one:

1) Special consideration must be given to the most impoverished communities and any burdens on them must not restrict their ability to fulfil their basic needs and functionings. To ensure this on a worldwide scale, aggregate global warming may need to be restricted to a suitable limit in line with intragenerational equity.

2) Subsistence emissions must not be sacrificed to allow luxury emissions to continue

[184] Thomas & Twyman (2005).

3) Costs of mitigation must fall equitably on all actors according to the principle of CBDR.

4) Adaptation to environmental change caused by climate change must be financed in line with a version of the PPP. Thus it is those who can be best identified as the polluters and who can afford to pay who should predominantly bear these costs.

5) Technological assistance must go hand in hand with financial assistance to avoid it being rendered useless.

6) Distributions between countries can only be considered valid if they also prevent further inequality within national communities.

At this stage, it is worth mentioning the possibility that current background injustices in the global system have caused (or at least reinforced) the vulnerability of certain communities to climate change and their inability to withstand the problem alone[185]. The proposal of the New International Economic Order (NIEO) by developing countries in the 1970's and 1980's and its subsequent failure demonstrates the tension present in the current state of affairs in international trade. It is difficult to isolate climate change policy entirely due to its interrelationships with almost all aspects of human society and so it is understandable that motivations and proposals may become tangled. Climate change does have the potential to exacerbate current inequalities as things stand[186], but this does not make it the appropriate vehicle to justify the correction of more fundamental inequalities in global structures. The claims for redistribution and the appraisal of existing institutions according to principles of justice may well be valid, but climate change negotiations do not provide the appropriate forum for doing so: to do so can only further confuse the debate[187]. Therefore, the remainder of this essay will evaluate how the six requirements above have been addressed by the international community. The discussion of the legal principles above as gateways for EJ will inform this.

(c) Taking Stock of The Current Legislation

To date, two major legal instruments have been drawn up to address the issue of

[185] Okereke (2010).
[186] Tol et al. (2004).
[187] See Posner & Sunstein (2008) for details of the potential pitfalls. It is of course possible for both goals to be pursued with equal vigour.

climate change: The United Nations Framework Convention on Climate Change (UNFCCC) and The Kyoto Protocol (KP). The stated ultimate objective of the regime is given in Article 2 of the UNFCCC – "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." It sets about achieving this aim through innovative mechanisms[188] and the endorsement of legal principles, most notably CBDR[189]. For the sake of clarity, the success of the regime in meeting the six criteria above will be discussed in turn, separating them out as far as possible.

1) Recognition of the special needs of those most vulnerable to climate change is clearly given in the text of the UNFCCC. Article 2(2) outlines this as a key principle and Article 4(8) details the nature of some high risk communities. However, this is done entirely in terms of countries, thus potentially overlooking the specific needs of certain communities who are geographically or socio-economically 'unusual' in the context of their nation-state. Additionally, no information is given as to what levels of impact on communities should be deemed unacceptable other than the vague commitments in Article 2 to 'allow ecosystems to adapt naturally to climate change, to ensure food production is not threatened and to allow economic development to proceed in a sustainable manner'. How the very specific needs of those communities listed in Article 4(8) will be met is left open and it has been claimed that their plight has been drowned out by a heavy focus on technological and economic solutions[190]. Neither vastly altered landscapes rendering traditional ways of life defunct nor the complete loss of the land which is home through sea level rise is deemed unacceptable. A global regime cannot be expected to detail the conditions for every single group on the planet, but progress could be made on this by endorsing a limit on the overall amount of warming deemed acceptable: by limiting warming to X°C, approximations can be made as to what proportion of the world will be so severely affected as to no longer be able to fulfil their basic needs and functionings.

[188] Birnie, Boyle & Redgwell (2009).
[189] Birnie, Boyle & Redgwell (2009). CBDR is mentioned in the Preamble and Articles 3(1) and 4(1).
[190] Friman & Linnér (2008).

So far, only the non-binding Copenhagen Accord[191] offers any suggestion that this approach may be adopted by the international community by taking "a view to reduce global emissions so as to hold the increase in global temperatures below 2 degrees Celsius and take action to meet this objective … on the basis of equity"[192]. A method for restricting warming to this level based on intragenerational equity must have at least roughly equal per capita emissions as its goal (although some variation may be reasonable according to needs and situations[193]), with flexibility built in to any transition based on current situations. Incorporation of total contribution to warming in terms of radiative forcing may provide a more equitable route than the use of an arbitrary baseline year of emissions alone[194], since historic emission rates (e.g. in 1990) reflect very different standards of living[195]. Further discussion of the nature of emissions reduction strategies will be included in **(2)**; for now, we have seen that although the climate regime is ready to accept that there are those whose position requires enhanced protection, not enough has yet been offered to them in terms of concrete safeguarding.

2) The climate change regime makes no formal distinction between different types of emissions. The closest we have in this regard is the vague commitment that developed countries "should take the lead in combating climate change"[196] which has transformed itself into the quantified emission reductions of the KP through the Berlin Mandate[197]. Although it is true that the majority of luxury emissions are in the Annex I countries and that Articles 3(3) and 4(14) of the KP talk of the need to minimise adverse effects on the most vulnerable countries, there is no assurance that these reductions will be made by eliminating some of the more superfluous activities associated with modern Western lifestyles. Article 2(1)(a) could have been a suitable home for some commitment to encourage the reduction of non-essential luxury emissions. In addition, the flexible

[191] FCCC/CP/2009/11/Add.1, Decision 2/CP.15.
[192] Article 2. Needless to say, this is a somewhat loose commitment.
[193] See *infra* and Soltau (2008) at pg. 117.
[194] In a style similar to the Brazilian Proposal (see den Elzen et al., 2005).
[195] It would be much harder for, say, Chad to provide suitable living standards throughout its territory based on its 1990 emissions than the USA. Friman & Linnér (2008).
[196] UNFCCC, Article 3(1). Note the use of *should* rather than *shall*.
[197] French (1998)

mechanisms for implementation endorsed by the KP may even have the effect of Annex I countries being able to sidestep the issue of addressing their GHG intensive institutions by finding cheaper and less transformative methods of GHG reduction overseas[198] on top of the inevitable outsourcing of production to states not bound by the KP[199]. The regime also fails to take into account the considerable luxury emissions profile of some developing countries (China and India are the lead candidates)[200], meaning once again that your passport rather than your predicament determines your treatment.

As mentioned above, the notion of per capita emissions may go some way to addressing these shortcomings: setting levels of emissions congruent with acceptable standards of living[201] (which may initially vary locally and/or regionally) and targeting only those emissions above these limits for elimination with an eye on reducing emissions in line with limiting radiative forcing to restrict overall warming by the necessary amount would help recognise the varying nature of GHG emissions. Commitments could thus be made by all states to restrict luxury emissions within their territory. A carbon tax is often suggested as a means for enacting such aims[202], although it is clear that such an arrangement is far from being politically palatable at the moment.

3) CBDR can be envisaged as one of the pillars of the climate regime and there has been a willingness by the developed countries to provide financial support for the monitoring and reporting elements of current commitments, as witnessed by Articles 4(3)[203] and 11 of the UNFCCC and Article 11 of the KP. Yet to be seen is how financing for mitigation by developing countries will take shape, since the regime to date has not enforced any emissions reductions on these countries. If we are to share Daniel Bodansky's[204] optimism about the Copenhagen Accord, then it is encouraging to see the intention of developed countries to providing US$100 billion a year by 2020 "[i]n the

[198] Friman & Linnér (2008) at pg. 342; French (1998) points out that allowing the enhancement of sinks to count towards emission reductions also de-incentivises industrial reform.
[199] Birnie, Boyle & Redgwell (2009).
[200] By most measures there is a significant population of affluent people in China, India and the rest of the developing world, Harris (2010), especially at pp. 123-7.
[201] Cf. The Extended Brazilian Proposal in den Elzen et al. (2005).
[202] Paavola (2005), Harris (2010), Stern (2007), Heyward (2007).
[203] The proviso that this funding must be "new and additional" is a welcome one.
[204] Bodansky (2010).

context of meaningful mitigation actions and transparency on implementation"[205]. The debate over whether financial assistance is provided as part of the responsibility of richer developed countries due to their enhanced capabilities (and so a quid pro quo linked to mitigation commitments by developing countries) or as payment for historical liability has yet to be settled[206] by the international community and the interpretation of CBDR in the climate change regime sheds no light on the matter, remaining silent on the justification for CBDR and thus allowing divergent views on its character. If we are to justify CBDR as primarily an issue of capability and hence relevant to mitigation strategies, then the historical responsibility element needs to come through more strongly through the PPP.

4) The PPP has received no formal recognition in the climate regime to date. It is probable that this is at least in part due to the difficulty in establishing who the polluter is, and the reliance on the loosely defined CBDR instead. Principle 16 of the Rio Declaration endorses the PPP, but its omission from the UNFCCC (adopted at the same time) may be due to the watering down of the PPP: "… without distorting international trade and investment"[207]. It is regrettable if the reaffirmation of existing inequities in the international trade system has taken priority over just allocations of burdens to deal with environmental harm. Despite the lack of any guiding principle, the UNFCCC does recognise the need for financial assistance for adaptation in poorer areas in Article 4(4) and the clean development mechanism (CDM) of the KP also demands that adaptation money be made available to those most in need (Article 12(8)). The weakness of these commitments can be seen by the declaration of several small island governments on signing the UNFCCC stating that it did not constitute a renunciation of rights concerning state responsibility for the adverse effects of climate change[208]. The creation of a number of funding bodies (e.g. the SCCF and the LDCF[209]) may have helped to allay these fears,

[205] Article 8.
[206] Bodansky (2010); Rajamani (2000).
[207] It would be difficult to have the PPP in the climate change regime *without* distorting these. Rio Declaration, Principle 16.
[208] Birnie, Boyle & Redwell (2009), n.187 at pg. 371.
[209] Special Climate Change Fund and Least Developed Countries Fund

although the amount supplied under them is considered by many to be inadequate[210].

Although the PPP is yet to make the impact it could on the climate regime, it has featured on the peripheries, including through the Brazilian Proposal. This proposed path for the climate regime used post-1840 contributions to global warming to determine future *emission allowances* based on principles of equity[211]. Many of the common complications arise too in this instance[212], and assigning future distributions based purely on past ones seems like an oversimplification: we must ensure that future emissions are in line with EJ considerations. We can see that this in not quite the PPP, but the (indirect) polluter paying indirectly – more in line with the PPP may be asking the (indirect) polluters to cover the costs of their pollution through financing adaptation measures. The latter stance, without such a clear justification for it rooted in established principles of international environmental law and without breaking free of statecentric approaches, has been and continues to be endorsed in theory by the climate regime[213].

5) Once again we find that provisions for technical assistance are included in the climate regime. Article 4(5) of the UNFCCC contains provisions for this, and the CDM has been heralded as another method for technology transfer[214]. However, the expert group on technology transfer, set up to enhance the implementation of Article 4(5) has come under criticism from developing countries[215] perhaps due to developed countries withholding full assistance, concerned instead about intellectual property rights[216].

6) There are no fail-safes in place to ensure that burdens do not fall disproportionately on the poor within national communities. The closest approximation to this that the regime can muster is Article 4(1)(f) of the UNFCCC which determines that national policies must be "with a view to minimizing adverse effects on the economy, on public health and an on the quality of the environment, of projects and measures undertaken

[210] Soltau (2008) §5.4; Harris (2010) pp. 82-3.
[211] Note that it is emissions that are being distributed, not funding for adaptation costs. den Elzen et al. (2005); Friman & Linnér (2008)
[212] See e.g. Müller et al. (2009) for discussion of the implications of the difference between 'contribution to' and 'responsibility for' climate change.
[213] The Copenhagen Accord broadened the applicability of assistance for adaptation from the particularly vulnerable to all developing countries (Article 3).
[214] Paulsson (2009).
[215] Okereke (2010).
[216] Okereke (2010).

by them to mitigate or adapt to climate change" which at least demonstrates the need for an awareness of the implications of policies on people and communities. It has rightly been pointed out that the climate regime leaves "a vacuum at sub-national levels with regard to the equitable nature of the impacts of adaptive strategies to climate change"[217] and the same is true for other strategies related to dealing with climate change[218]. The guidelines produced for preparing national adaptation plans of action (NAPAs)[219] once again begin to address the issue of addressing particular needs within countries by highlighting priority activities[220] through a "participatory process involving stakeholders, particularly local communities"[221] and with reasonable criteria for determining priority activities[222]. But the reach of the NAPAs is limited: it does not feed back into the international regime allowing the voice of local communities to be heard[223]. Again, the CDM has the potential for providing room for local community engagement with climate policy, but in reality has been criticised for failing to produce such outcomes[224].

Similarly, there is nothing to prevent the relatively poor in developed countries having to shoulder an inequitable share of their nation's burdens. The danger of 'those who can pay, may pollute' materialising in this context is a real one, especially as high premiums may end up being placed on basic necessities such as the heating of homes and food. A cross-level grievance procedure[225] may go some way to rectifying the problem of current climate change legislation potentially furthering inequalities within countries.

In sum then we have seen that climate change legislation on paper does tentatively begin to address many issues of EJ, but the full transformation and implementation of these into actions by states and individuals is yet to be seen[226]. The preamble of the UNFCCC contains the most prominent endorsements of fairness and justice, which seem

[217] Thomas & Twyman (2005) at pg. 115, see also Tol et al. (2004).
[218] Paavola (2005).
[219] FCCC/CP/2001/13/Add.4, Decision 28/CP.7 (NAPA Decision).
[220] NAPA Decision, Annex A(1).
[221] NAPA Decision, Annex D(7)(a).
[222] NAPA Decision, Annex F(4)(15-16).
[223] Paavola (2005).
[224] Okereke (2010).
[225] As endorsed by Paavola (2005).
[226] "To summarize, the Convention makes commitments regarding distributive justice between the states which have not been fulfilled", Paavola (2005) at pg. 317; Soltau (2008); Okereke (2010).

to have been somewhat lost in the operative elements of the text[227]. Deployment of several principles of international environmental law relevant to EJ can be used to more pithily justify approaches to climate policy. Allocation of future emissions can be done on the basis of equity: we should head towards a state where all have equal emissions, with a path to this shaped by current needs and situation[228]. The cost of mitigation action should be borne by everyone, but according to CBDR: those with more pressing concerns such as the raising of standards of living should focus on that, whereas those who have cash to spare should help out. The cost of adaptation measures should be in line with the PPP and thus covered by those who can be best identified as the polluters. The UNFCCC and KP do not constitute the end of the regime, and it is to be hoped that progress continues to be made in this field. Perhaps more collaborative approaches may produce fruitful outcomes, such as taking the lead from the Montreal Protocol which gave away some sovereign powers in order to achieve more environmentally sound outcomes[229].

V - Conclusion

Motivating the analysis and discussion in this essay has been the plight of the members of our global society who find themselves impoverished, disenfranchised and suffering from poor environmental conditions. We have seen how the state of the environment of such communities should be high on the agenda for local, regional and international bodies tasked with environmental and social governance and regulation. An understanding of EJ, its motivations and its implications can assist this, demanding as it does equal consideration to all through a global cosmopolitan outlook.

The potential of EJ for having an impact on international environmental law via legal principles has been demonstrated, with a suggestion that EJ has the capability of acting as a meta-principle akin to sustainable development. EJ may demand re-evaluation of Westphalian norms which may prove useful beyond climate change legislation: international (environmental) law needs to accept that international trade,

[227] Soltau (2008).
[228] A brand of 'contraction and convergence', cf. Meyer (2000) and www.gci.org.uk
[229] See Article 2(9)(c) of the amended Montreal Protocol on Substances that Deplete the Ozone Layer. French (1998).

communication, travel and thinking mean we now act as one global community as well as belonging to distinct societies and this must be reflected in its norms and procedures. EJ alone cannot solve all the intricate difficulties of international environmental law, but it can provide additional support and meaning to several facets therein.

It is almost impossible to avoid the justice dimensions of climate change especially because of the inevitably unjust distribution of harm it will cause. States may attempt to invoke just one of these dimensions as underlying the whole debate, but in reality all are needed to deal with the diverse nature of climate change. Understanding of these dimensions can be aided by encapsulating them as falling into three categories: equity, capability and responsibility[230]. In general, developed nations see the issue as one of equity, whereas to developing states the attribution of responsibility is key and this fracture in underlying motivations can begin to explain some of the difficulties experienced in climate change negotiations. Here, equity has been proposed as the best tool for allocating future emissions; capability for funding mitigation strategies and responsibility for facilitating adaptation. This triumvirate is not meant to be understood as a rigid one, but simply as guidance for interactions between EJ and climate change.

The use of climate change legislation as a vehicle to test the theory of the applicability of EJ as a meta-principle showed a need for EJ to be more fully actualised in treaty formation. The architecture of the regime, despite its strong rhetoric on justice[231], is yet to deliver action at the level scientists have suggested is necessary and there is a need to put a stop to the you-go-first mentality which is undermining progress. The continued existence of this mentality can only be deemed a peculiarity of the mismatch between the scientific and legal structures of climate change, seeing as there is no economic case for not acting[232]. More collaborative approaches and incorporation of the rights and obligations of individuals into the regime may help with this: it can allow both developed and developing country agendas to be met and so genuine progress to be made.

[230] Cf. Heyward (2007).
[231] Which is probably stronger than anywhere else in international environmental law, although it has been criticised as a description of justice most compatible with developed country ideologies (Okereke, 2008).
[232] See The Stern Review for a comprehensive analysis, Stern (2007).

VI - REFERENCES AND BIBLIOGRAPHY

Attfield, Robin (1987), "A theory of value and obligation", *Croon Helm Ltd.*

Attfield, Robin (2003), "Environmental Ethics", *Polity Press, Cambridge*

Babiker, Mustafa J. & Eckaus, Richard S. (2000), "Rethinking the Kyoto Emissions Targets" *MIT Joint Program on the Science and Policy of Global Change, Report no. 65, http://mit.dspace.org/bitstream/handle/1721.1/3580/MITJPSPGC_Rpt65.pdf (last accessed 23/8/11)*

Beckerman, Wilfred & Pasek, Joanna (2001), "Justice, Posterity and the Environment", *Oxford University Press*

Beitz, Charles R. (1975), "Justice and International Relations", *Philosophy & Public Affairs, Vol. 4, No. 4, Summer 1975.*

Beitz, Charles R. (1999), "International Liberalism and Distributive Justice: A Survey of Recent Thought", *World Politics, 51.2, 269-296*

Bentham, Jeremy (1843), "Anarchical Fallacies; Being an Examination of the Declarations of Rights Issued During the French Revolution", *The Works of Jeremy Bentham, vol. 2*

Biermann, Frank (1999), "Justice in the Greenhouse: Perspectives from International Law", in *(Tóth, Ferenc L., ed.) "Fair Weather? Equity Concerns in Climate Change", Earthscan Publications Ltd.*

Bierman, Frank & Dingwerth, Klaus (2004), "Global Environmental Change and the Nation State", *Global Environmental Politics, Volume 4, Number 1, pp. 1-22*

Birnie, Patricia; Boyle, Alan & Redgwell, Catherine (2009), "International Law & the Environment", *Oxford University Press*

Blum, Elizabeth D. (2008),"Love Canal Revisited: Race, Class, and Gender in Environmental Activism"*University Press of Kansas*

Bodansky, Daniel (2010), "The Copenhagen Climate Change Conference: A Postmortem", *104 Am. J. Int'l. L. 230*

Bortscheller, Mary J. (2010), "Equitable but Ineffective: How the Principle Of Common But Differentiated Responsibilities Hobbles The Global Fight Against Climate Change", *Sustainable Development Law & Policy, Volume 10, Issue 2 Winter 2010: Climate Law Reporter 2010*

Bullard, Robert D. (1990), "Dumping in Dixie: Race, Class, and Environmental Quality", *Westview Press, A Member of the Perseus Books Group*

Bullard, Robert D. (2005, ed.), "The Quest for Environmental Justice: Human Rights and the Politics of Pollution", *Sierra Club Books*

Bullard, Robert D.; Johnson, Glenn S. & Torres, Angel O. (2005), "Addressing Global Poverty, Pollution and Human Rights" in (*Bullard, Robert D., ed.), "The Quest for Environmental Justice: Human Rights and the Politics of Pollution", Sierra Club Books*

Brown-Weiss, Edith (1989), "In Fairness to Future Generations: International Law, Common Patrimony and Intergenerational Equity", *Dobbs Ferry, NY: Transnational Publishers*

Brunnée, Jutta (2007), "Common Areas, Common Heritage, and Common Concern", in *(Bodansky, David; Brunnée, Jutta & Hey, Ellen, eds.) "The Oxford Handbook of International Environmental Law", Oxford University Press*

Brunée, Jutta (2009), "Climate change, global environmental justice and international environmental law", in *(Ebbesson & Okowa, eds.) "Environmental Law And Justice In Context", Cambridge University Press*

Bugge, Hans Christian (2009), "The polluter pays principle: dilemmas of justice in national and international contexts", in *(Ebbesson & Okowa, eds.) "Environmental Law And Justice In Context", Cambridge University Press*

Cabrera, Luis (2004), "Political Theory of Global Justice", *Routledge, OX14 4RN*

Caney, Simon (2005), "Cosmopolitan Justice, Responsibility, and Global Climate Change", *Leiden Journal of International Law, 18, pp. 747-775*

Caney, Simon (2010), "International Distributive Justice", in *(Brown, Garrett Wallace & Held, David, eds.) "The Cosmopolitanism Reader", Polity Press*

den Elzen, Michel G.J.; Schaeffer, Michiel & Lucas, Paul L. (2005), "Differentiating Future Commitments on the Basis of Countries' Relative Historical Responsibility for Climate Change: Uncertainties in the 'Brazilian Proposal' in the Context of a Policy Implementation", *Climatic Change 71: 277-301*

Dobson, Andrew (1998), "Justice and the Environment: Conceptions of Environmental Sustainability and Theories of Distributive Justice", *Oxford University Press*

Ebbesson, Jonas (2009a), "Introduction: dimensions of justice in environmental law", in *(Ebbesson & Okowa, eds.) "Environmental Law And Justice In Context", Cambridge University Press*

Ebbesson, Jonas & Okowa, Phoebe (2009, eds.) "Environmental Law and Justice In Context", *Cambridge University Press*

Environment Canada (2010), "News Release: Canada Provides Support for Developing Countries to Participate in United Nations Climate Change Negotiations", *available at http://www.ec.gc.ca/default.asp?lang=En&n=714D9AAE-1&news=EC89ACED-DB7B-426C-87D9-178424E3BCAB (last accessed, 26/8/11)*

Falk, Richard (2009), "The second cycle of ecological urgency: an environmental justice perspective", in *(Ebbesson & Okowa, eds.) "Environmental Law And Justice In Context", Cambridge University Press*

Franck, Thomas (1995), "Fairness in International Law and Institutions", *Oxford University Press*

French, Duncan (1998), "1997 Kyoto Protocol to the 1992 UN Framework Convention on Climate Change", *10 Journal of Environmental Law 227*

French, Duncan (2000), "Developing States and International Environmental Law: The Importance of Differentiated Responsibilities", *49 Int'l & Comp. L.Q.*

Friman, Mathias & Linnér, Björn-ola (2008), "Technology obscuring equity: historical responsibility in UNFCCC negotiations" *Climate Policy 8 339-354*

Gaines, Sanford E. (1991), "The Polluter-Pays Principle: From Economic Equity to Environmental Ethos"*, 26 Tex. Int'l. L. J.*

Gillespie, A. (1997), "International Environmental Law, Policy And Ethics", *Oxford University Press.*

Harris, Paul G. (2010), "World Ethics and Climate Change", *Edinburgh University Press*

Hayden, Patrick (2005), "Cosmopolitan Global Politics", *Ashgate Publishing Limited*

Hayden, Patrick (2010), "The Environment, Global Justice and World Environmental Citizenship", in *(Brown, Garrett Wallace & Held, David, eds.) "The Cosmopolitanism Reader", Polity Press*

Heyward, Madeleine (2007), "Equity and international climate change negotiations: a matter of perspective", *Climate Policy 7 518-534*

Houghton, John (2002), "The Physics of Atmospheres", *Third Edition, Cambridge University Press*

Houghton, John (2010), "Global Warming: The Complete Briefing", *Fourth Edition, Cambridge University Press*

IPCC (2007), "Climate Change 2007: Synthesis Report" (AR4) *available at http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf, last accessed 31/7/2011*

Janssen, M.A.; den Elzen, M.G.J. & Rotmans, J. (1992), "Allocating CO_2-emissions by using equity rules and optimization" *RIVM, Report no. 222901012. Dutch National Institute for Public Health and the Environment, Bilthoven*

Kokott, Juliane (1999), "Equity in International Law", in *(Tóth, Ferenc L., ed.) "Fair Weather? Equity Concerns in Climate Change", Earthscan Publications Ltd.*

Levine, Adeline Gordon (1982),"Love Canal: Science, Politics and People" *Lexington, MA: D.C. Heath and Company*

Le Treut, Hervé; Somerville, Richard; Cubasch, Ulrich; Ding, Yihui; Mauritzen, Cecile; Mokssit, Abdalah; Peterson, Thomas; and Prather, Michael (2007),"Historical Overview ofClimate Change."*In (Solomon, S.; Qin, D.; Manning, M.; Chen, Z.; Marquis, M.; Averyt, K.B.; Tignor M.; and Miller H.L. (eds.)]. "Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change"Cambridge University Press.*

Linnerooth-Bayer, Joanne (1999), "Climate Change and Multiple Views of Fairness", in *(Tóth, Ferenc L., ed.) "Fair Weather? Equity Concerns in Climate Change", Earthscan Publications Ltd.*

Louv, Richard (2005), "Last Child in The Woods: Saving Our Children from Nature-Deficit Disorder", *Algonquin Books*

Magraw, Daniel Barstow & Hawke, Lisa D. (2007), "Sustainable Development" in *(Bodansky, David; Brunnée, Jutta & Hey, Ellen, eds.) "The Oxford Handbook of International Environmental Law", Oxford University Press*

Matsui, Yoshiro (2002), "Some Aspects of the Principle of "Common but Differentiated Responsiblities"", *International Environmental Agreements: Politics, Law and Economics 2: 151-171*

Meyer, Aubrey (2000), "Contraction and Convergence: The Global Solution To Climate Change", *Green Books for the Schumacher Society*

Morris, Michael W. & Leung, Kwok (2000), "Justice for all? Progress in Research on Cultural Variation in the Psychology of Distributive and Procedural Justice", *Applied Psychology: An International Review Vol. 49 Issue 1*

Müller, Benito; Höhne, Niklas & Ellermann, Christian (2009), "Differentiating (historic) responsibilities for climate change", *Climate Policy 9, 593-611*

Murphy-Greene, Celeste (2007), "Environmental Justice: a Global Perspective", *Public Administration and Public Policy, vol. 130.*

Neumayer, Eric (2000), "In defence of historical accountability for greenhouse gas emissions", *Ecological Economics 33, 185-192*

Okereke, Chukwumerije (2008), "Global Justice and Neoliberal Environmental Governance", *Routledge, Abingdon.*

Okereke, Chukwumerije (2010), "Climate justice and the international regime", *Wiley interdisciplinary reviews. Climate change (1757-7780). Vol. 1(3), 462*

Paradell-Trius, Lluís (2000), "Principles of International Environmental Law: an Overview", *RECEIL 9(2)*

Parsons, Michael (2009), "Integrating climate change and poverty reduction through spatial planning: Experiences from a UNDP project in Viet Nam and relevance for Asia", *report from the 3rd China-ASEAN Forum on Social Development and Poverty Reduction, 4th ASEAN+3 High-Level Seminar on Poverty Reduction, and Asia-wide Regional High-level Meeting on The Impact of the Global Economic Slowdown on Poverty and Sustainable Development in Asia and the Pacific, available at http://www.adb.org/documents/events/2009/poverty-social-development/WG6-integrating-climate-change-Parsons-paper.pdf, last accessed 22/8/11*

Paavola, Jouni (2005), "Seeking Justice: International Environmental Governance and Climate Change", *Globalizations Vol. 2 No. 3, pp. 309-322*

Paulsson, Emma (2009), "A review of the CDM literature: from fine-tuning to critical scrutiny?", *Int. Environ. Agreements 9:63-80*

Pogge, Thomas W. (1989), "Realizing Rawls", *Cornell University Press*

Pogge, Thomas W. (2008), "World Poverty and Human Rights", *Polity Press*

Posner, Eric A. & Sunstein, Cass R. (2008), "Climate Change Justice", *96 Geo. L. J. 1565 2007-2008*

Rajamani, Lavanya (2000), "The Principle of Common but Differentiated Responsibility and the Balance of Commitments under the Climate Regime", *RECEIL 9(2)*

Rawls, John (1972), "A Theory of Justice", *Oxford University Press.*

Regan, Tom (1988), "The Case for Animal Rights", *Routledge.*

Sachs, Wolfgang (2001), "The EcoEquity Interview: Wolfgang Sachs", *http://www.ecoequity.org/2001/05/the-ecoequity-interview-wolfgang-sachs/#more-242 last accessed 08-08-11*

Schlosberg, David (2004), "Reconceiving Environmental Justice: Global Movements And Political Theories", *Environmental Politics, vol. 13, no. 3, pp. 517-540.*

Schlosberg, David (2007), "Defining Environmental Justice: Theories, Movements, and Nature", *Oxford University Press*

Sen, Amartya (1993), "Capability and Well-Being" in *(Nussbaum, Martha & Sen, Amartya, eds.) "The Quality of Life" Oxford University Press*

Shelton, Dinah (2007), "Equity" in *(Bodansky, David; Brunnée, Jutta & Hey, Ellen, eds.) "The Oxford Handbook of International Environmental Law", Oxford University Press*

Shelton, Dinah (2009), "Describing the elephant: international justice and environmental law", in *(Ebbesson & Okowa, eds.) "Environmental Law And Justice In Context", Cambridge University Press*

Shue, Henry (1993), "Subsistence Emissions and Luxury Emissions", *15 Law & Policy 39 No. 1*

Shue, Henry (1999), "Global environment and international inequality", *75 Inter'l Aff. 533-540*

Singer, Peter (1976), "Animal Liberation", *Granada Publishing*

Singer, Peter (1993), "Practical Ethics", *Cambridge University Press*

Singer, Peter (2009), "The Life You Can Save: Acting Now to End World Poverty", *Picador*

Smith, Kirk R.; Corvalán, Carlos F. & Kjellström, Tord (1999) "How Much Global Ill Health Is Attributable to Environmental Factors?", *Epidemiology 10:573-584*

Soltau, Friedrich (2008), "Fairness and Equity in Climate Change", *Dissertations & Theses. Paper 4 http://digitalcommons.pace.edu/lawdissertations/4*

Stern, Nicholas (2007), "The Economics of Climate Change", *Cambridge University Press*

Stone, Christopher D. (2004), "Common but Differentiated Responsibilities in International Law", *98 Am. J. Int'l L. 276*

Stone, Christopher D. (2007), "Ethics and International Environmental Law" in *(Bodansky, David; Brunnée, Jutta & Hey, Ellen, eds.) "The Oxford Handbook of International Environmental Law", Oxford University Press*

Swaney, James A. (1994), "So What's Wrong with Dumping on Africa?", *Journal of Economic Issues, 28, 2*

Thomas, David S.G. & Twyman, Chasca (2005), "Equity and justice in climate change adaptation amongst natural-resource-dependent societies", *Global Environmental Change 15 115-124*

Timoney, Kevin P. & Lee, Peter (2009), "Does the Alberta Tar Sands Industry Pollute? The Scientific Evidence", *The Open Conservation Biology Journal* 3, 65-81

Tol, Richard S.J.; Downing, Thomas E.; Kuik, Onno J. & Smith, Joel B. (2004), "Distributional aspects of climate change impacts", *Global Environmental Change 14 259-272*

Tornblom, Kjell (1992), "The social psychology of distributive justice" in *(Sherer, Klaus R., ed.) "Justice", Cambridge University Press.*

Twining, William (2009), "Law, justice and rights: some implications of a global perspective", in *(Ebbesson & Okowa, eds.) "Environmental Law And Justice In Context", Cambridge University Press*

Wenz, Peter S. (1988), "Environmental Justice", *State University of New York Press*

WHO (2009),"Global Health Risks – Mortality and burden of disease attributable to selected major risks", *available at http://www.who.int/healthinfo/global_burden_disease/GlobalHealthRisks_report_full.pdf, (last accessed 22/8/11)*