

GLOBAL WARMING, CLIMATE CHANGE AND JUSTICE

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As an international instrument on climate change, the United Nations Framework Convention on Climate Change embraces a general obligation to protect the climate system, from which some specific obligations for developed countries fall off from. In this paper, I discuss three of such obligations. Firstly, the obligation to address the causes of climate change and to mitigate its adverse effects, next, the obligation to assist developing countries that are vulnerable to the adverse effects of climate change in meeting the costs of adaptation to those adverse effects and finally, the obligation to support other developing countries by providing them with appropriate resources in order for them to mitigate and adapt to the adverse effects of climate change. I show that these obligations are framed in the treaty as obligations of beneficence and suggest that the first two can be expressed as obligations of justice. I argue for the soundness of expressing the obligations this way and that doing so may have the added virtue of addressing both the egoistic and performance problems since it introduces some incentive for taking the obligations seriously and the possibility for their realization.

INTRODUCTION

Two topics have dominated discussions of global warming (GW) and climate change (CC) in the last couple of decades. The first concerns the extent and scope of GW. And the second relates to the connection between GW and CC. Although discussions about the level of GW are not yet a settled matter, there generally is consensus among scientists (notably climatologists) that GW is occurring and is mainly due to human activities. If GW is occurring and is largely brought about by human activities, and if there is connection between GW and CC, then surely it stands to reason that humans can and ought to do something about GW. The coming into existence of the United Nations

Framework Convention on Climate Change (UNFCCC) constitutes as one of such endeavors at doing something about it, namely, an attempt at the international level to address issues of GW and CC.¹

The UNFCCC is an instrument that provides updates, called protocols; the principal one being the Kyoto Protocol which came into existence in 1997 (signed on December 11, 1997) and which is now much better known than the treaty itself. Its principal aim is to stabilize the concentrations of greenhouse gases (GHGs) “in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system” (UNFCCC 1994: Article 2, p4).² The framework provided by the Convention seeks to synergize global actions insofar as they are instrumental to the reduction of GHGs emissions. This framework establishes a general obligation on the part of member nations to protect the climate system (CS) for the benefit of present and future generations. This obligation targets more generally developed countries and can be parsed out into more specific ones. In this paper, I shall examine three of them: the obligations to (i) address the causes of CC and mitigate its adverse effects; (ii) assist developing countries that are vulnerable to the adverse effects of CC in meeting the costs of adaptation to those adverse effects; (iii) support other developing countries by providing them with resources³ so that that can mitigate and adapt to the adverse effects of CC. I show that these obligations are framed in the Convention as obligations of beneficence (OOB) and suggest that the first two can be expressed as obligations of justice (OOJ).⁴ I argue for the soundness of expressing the obligations this way, i.e. as obligations of justice and that doing so may have the added virtue of addressing the problem of the lack of an effective compliance and enforcement mechanism in the UNFCCC (hereinafter, the performance problem) and the problem of the egoistic dimensions associated with high energy use or of GHG emissions (henceforth, the egoistic problem) since it introduces some incentive for taking the obligations seriously and the possibility for their realization.

My aim of the paper will be developed as follows. Firstly, after I provide what I consider the philosophical grounds for the concepts of beneficence and justice (I), I begin by unpacking the three obligations concerning GHG emissions and CC as contained in the UNFCCC. Here I examine what may be considered the ground for the three obligations and what is entailed by them (II-III). Next, I discuss some problems commonly raised for the UNFCCC particularly in relation to the obligations, emphasizing that the egoistic problem makes the performance problem more acute (IV) in the sense that they highlight why countries may not take seriously their commitments to reduce GHGs emissions given the substantial benefits accruing to them and the small loss they suffer. Thirdly, I examine on the one hand, whether the obligations as framed in the UNFCCC are those of beneficence or justice and, on the other, why some of them ought to be expressed as OOJ (V-VII). Lastly, I take up a few objections that could be raised for this approach (VIII).

I. PHILOSOPHICAL GROUNDS FOR BENEFICENCE AND JUSTICE

Before I begin, I want to say something briefly about how one might think of the

philosophical grounds for the sort of project that I am engaged in here. That is, for the sort of move that I make according to which the obligations in the UNFCCC that I discussed can be taken as obligations of beneficence and those of justice.

The principle of beneficence is a well-established one in the literature in ethics and beneficent actions occupy a central place in morality (Hurley 2003; Arneson 2004; Miller 2004; Cullity 2007; Beauchamp 2019). In moral discourse, beneficent actions are generally good and kind acts that are oriented toward the good of others. On an individual level, they can be said to be instantiated paradigmatically in charitable and philanthropic acts, and on a government level, in things such as welfare and social programs and international aids (Hurley 2003; Arneson 2004; Cullity 2007).

As for justice, it too has a long history in philosophy. In Western philosophy, Plato provides some of the more important engagements with the notion of justice in *The Republic* (Plato, circa 380 BC). In this book, he takes justice to be an ideal state that rest on four cardinal virtues: wisdom, courage, moderation, and justice, whereby justice *qua* virtue arises from a harmony of all the other three virtues (See Plato, Book V: also Etieyibo 2011, 37-44). Building on this notion of justice, Aristotle who also took justice as a virtue broadly conceptualizes it in terms of giving each person his or her due or giving you and I what we individually *do* deserve (Aristotle 1998; see Ober 1998, pp. 161-187; Etieyibo 2020, 57-74). But in the contemporary period in the Western philosophical tradition, it was John Rawls that provides one of the most forceful formulations and defence of justice both in *A Theory of Justice* (1971 and revised in 1999) and in *Political Liberalism* (1993) (Etieyibo 2011, 37-44; Etieyibo 2020, 57-74).

In this paper, my use of beneficence and justice does piggyback on some of the above discussions and understandings of both terms. So, when reference is made to countries having an obligation of beneficence as framed in the UNFCCC the reference is to suggest that, as far as the Convention is concerned, countries have a moral duty to engage in some acts that may be said to be good, kind, charitable and philanthropic and that generally targets the good of countries. This, as I argue in the paper, may be said to be deficient, as it does not have enough force to bring countries to compliance. As a way around this and to elicit compliance, I suggest that the obligations ought to be framed and understood as those of justice, where my reference to justice concerns fairness and giving others what is due them. In this understanding, countries have a duty to engage in acts that are fair and provide other countries a fair share of accessing the common resources of the climate system.

II. THE GROUND OF THE THREE OBLIGATIONS

The basis of the three obligations can be summed up by the following ideas: *the CS is a shared resource and the principle of equity obligates its common protection*. The UNFCCC is grounded on these ideas, for it advocates for the distribution of the burden and benefits of GHGs emissions according to the idea of “common but differentiated responsibilities and respective capabilities” (UNFCCC 1994: Article 3(1), p4). Thus the UNFCCC takes a distinctive position as far as the debate about the best

and just way to distribute the costs and benefits of GHG emissions and abatement is concerned.⁵ This is just but one of the four major positions in the literature with regards to distributions of GHGs emissions. One position, the “equal per capita entitlements view” proposes for an equal division of an acceptable overall level of emissions among the world’s population (See Jamieson 2001, 301 and Singer 2010, 181-199). A second stance is the “rights to subsistence emissions view,” which advocates for inalienable rights to the minimum emissions necessary for survival or some minimal quality of life (See Shue 1995, 385–92 and Shue 2010, 101-111). A third is the “equalizing marginal costs view,” which proposes for a fair chore division among countries aiming to prevent CC (Taxler 2002, 129). And the fourth, which is close to the one that the UNFCCC adopts is the “priority of the least-well off view.” There are several versions of this, but the central theme is that whereas industrialized countries should bear the costs of dealing with CC, less industrialized ones should be offered generous economic assistance (Lomborg 2001, 322).⁶

In various places in the Convention, the UNFCCC speaks of protecting the CS for present and future generations of humans.⁷ In the preamble, it acknowledges that the CS is a common resource and that changes “in the Earth’s climate and its adverse effects are a common concern of humankind” (UNFCCC 1994:1). But what does the CS really mean and in what sense can it be construed as a common resource?

The UNFCCC defines the CS as “the totality of the atmosphere, hydrosphere, biosphere and geosphere and their interactions” (UNFCCC 1994: Article 1(3), p2). According to the Intergovernmental Panel on Climate Change (IPCC 1988), the CS is an interactive system consisting of five major components: the atmosphere, the hydrosphere, the cryosphere, the land surface and the biosphere. Simply put then, the CS refers to how the atmosphere, hydrosphere, biosphere, cryosphere and geosphere relate to and impact one another. Each of the five components can be forced or influenced by various external forcing mechanisms, and consequently can impact the other components. Let us take for example, the relationship between the cryosphere, hydrosphere, and biosphere. The cryosphere including the ice sheets of Greenland and Antarctica, store a large amount of water. Variations in their volume have been recognized as a potential source of sea level variations and sea level variations, on the other hand, are a potential source of variations in flora and fauna. So if certain human activities affect the ice caps and their geography, we can expect that this will impact vegetation, plants and animals in certain regions, which in turn will affect the quality of human life in those regions.

To construe the CS as a common resource is to simply think of it as a “service” that provides global benefits for everyone. The biosphere not only supports plant, animal, or organism, including humans but it plays an important role in regulating gases and climate. Large quantities of carbon dioxide are regularly exchanged between it and the atmosphere as plants take in carbon dioxide and give off oxygen, and animals inhale oxygen and exhale carbon dioxide. The cryosphere contains the world’s largest supply of freshwater that is vital for life. In addition, since ice has insulating properties the cryosphere can be said to play an important role in regulating climate.

Since the CS is a “service” it can be depleted in the sense that the totality of its functioning or the operation of its components can be affected. One of the most common human activities that affect its functioning is the emissions of GHGs (carbon, methane, nitrous oxide, halocarbons, etc.). As a “service,” any human activity that affects its functioning denies humans the service and function that it provides. And consequently when the functioning of the CS is affected by the GHGs emissions, human life is impacted negatively.

III. THE THREE OBLIGATIONS IN THE UNFCCC

In extending the general and specific obligations to protect the CS, the UNFCCC divides member countries into three categories by trifurcating them into developed, industrialized and developing countries. The first category is what it calls Annex I countries. These are industrialized countries and economies in transition. Second, Annex II countries, which are developed countries, that is a sub-group of Annex I countries and made up of members of the Organization for Economic Cooperation and Development, excluding countries that were economies in transition in 1992. And the third is Non Annex I countries, namely, developing countries, which are countries that are exempted from any sort of duty with regards to the reduction of GHG emissions and to which Annex II countries pay or ought to pay GHG emissions related costs to.

Obligation 1 (the Mitigation Obligation)

The first obligation contained in the UNFCCC is *the obligation for developed countries to address the causes of CC and mitigate its adverse effects*. Developed countries, it says, need to take immediate action to combat CC and its adverse effects. In order for this to be effective, the UNFCCC recognizes that the actions have to be taken “in a flexible manner on the basis of clear priorities, as a first step towards comprehensive response strategies at the global, national” and local levels (UNFCCC 1994: 2). This point is later reiterated in Article 3(1) with the emphasis on developed countries taking “the lead in combating climate change and the adverse effects thereof” (UNFCCC 1994: Article 3(1), p4). The argument for this obligation can be outlined thus:

- P1. We have an obligation to protect the CS (for present and future generation) (UNFCCC 1994: Article 3(1), p4).
- P2. The CS is a shared resource whose stability can be affected by GHGs emissions (UNFCCC 1994: Article 1, pp1 and 2.).
- P3. Historically, per capita emissions in developing countries are relatively low compared to the per capita emissions in developed countries (UNFCCC 1994: Article 1, p1).
- P4. Developed countries have moved on to luxury consumption and associated lifestyles, but the consumption of developing countries are (more generally) for basic needs (UNFCCC 1994: Article 1, pp1-3; see also Shue 2010:200-214).
- C1. Therefore, the share of global emissions of developing countries in the foreseeable future will grow to meet their social and development needs (the ‘general permissibility provision’) (UNFCCC 1994: Article 1, pp1 and 3).

C2. Therefore, developed countries have a responsibility to reduce their share of global emissions in order to mitigate the adverse effects of CC (*OB1*).

P2 of the argument simply reiterates the point that the functioning of the CS can be affected by the emissions of GHGs. If it is the case that the CS is vulnerable to global emissions and if we are to ensure that it is stable in the future, then one could argue that there exists an obligation to do something about emissions, which is exactly what P1 and C2 assert. Given that present emissions and their impact on CC are futuristic it is clear that the obligation is forward-looking. That is, it is an obligation to prevent future harms.

But who has this obligation? According to C1 and C2, the obligation falls primarily on developed countries, and they alone. Developing countries have no such obligation. In fact, not only do they not have such obligation, they are permitted to increase their shares of global emissions in the foreseeable future (from P3 and C1). We shall call this the “general permissibility provision” and shall take this as roughly expressed by the UNFCCC’s principle of “common but differentiated responsibilities and respective capabilities” (UNFCCC 1994: Article 3(1), pp1 and p4). P3 states that developed countries have polluted more than developing countries and P4 claims that the consumption pattern in the developed and developing countries is different. Whereas, consumption has shifted to luxury for the former it has remained at the basic level for the latter. If we accept these claims, and in particular take P4 to be tied to GHGs emissions, then in conjunction with P1 and P2 we can get to C1 and C2.⁸

Obligation 2 (Adaptation Cost Assistance Obligation)

The second obligation is *the obligation for developed countries to assist developing countries that are vulnerable to the adverse effects of CC in meeting the costs of adaptation to those adverse effects*. The UNFCCC expresses the obligation this way: “The developed country Parties and other developed Parties included in Annex II shall also assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects” (UNFCCC, Article 4(4), p8). The reasoning for this obligation goes something like this:

- P5. Some developing countries are more vulnerable to the emissions of GHG or the adverse effects of CC (UNFCCC 1994: Article 3(2), p4).
- P6. Some developing countries bear and would shoulder a disproportionate cost of the adverse effects of CC (UNFCCC 1994: Article 3(2), p4).
- P7. Countries that suffer the adverse effects of CC have a right to existence. And in conjunction with P2-P4
- C3. Therefore, developed countries have a responsibility to *assist* countries that suffer the adverse effects of CC in order that they meet the costs of adaptation to those adverse effects (*OB2*) UNFCCC, p8, 4(4), p8).

There is consensus among commentators about the inequity of the distribution

of the benefits and burdens of CC. For example, Joel Smith, et al (2001, 957) note that the impacts of CC across world populations will not be distributed evenly. According to them, some peoples, regions, and sectors are expected to experience benefits while others will experience costs. Similarly, Stephen H Schneider, et al (2007, 781) note that low-latitude and less developed areas are probably at the greatest risk from CC. CC, they say would likely result in reduced diversity of ecosystems and the extinction of many species (Schneider, et al 2007:792). As well, the IPCC says that the most vulnerable areas to CC are the Arctic (because of the impacts of high rates of projected warming on natural systems and human communities); Africa (because of low adaptive capacity and projected CC impacts); Small islands (where there is high exposure of population and infrastructure to projected CC impacts); Asian and African megadeltas (due to large populations and high exposure to sea level rise, storm surges and river flooding) (see United Nations Foundation, IPCC 1988; United Nations Foundation, IPCC 2007a: 48; United Nations Foundations, IPCC 2007b).

The imbalance in the distribution of the benefits and burdens of CC calls for different actions. First, that developed countries do something about CC. Second, that since they are the primary beneficiary of GHGs emissions they ought to assist developing countries that are vulnerable and would be vulnerable to the adverse effects of CC. These actions are what the second obligation expresses. The idea simply is that if developed countries are primarily responsible for a very large percentage of historical emissions and if the likely costs of those emissions are expected to be visited on less affluent countries, then, it seems just to ask them to provide assistance to those that will suffer those costs.⁹

As an example of a country that is potentially a subject of this kind of assistance consider the Republic of Vanuatu located in the South Pacific Ocean, a country that consist of over 80 relatively small islands. As with other small island developing states, it is highly vulnerable to CC and sea level rise owing partly to its small land masses surrounded by ocean, and their location in regions prone to natural disasters (GEF/UNDP/SPREP: 3). Studies suggest that this island archipelago is already experiencing the adverse effect of CC.¹⁰ Weather watchers point to the event in late 2005, when an entire coastal village in northern Vanuatu was relocated to higher ground as instance of these effects.¹¹ Indeed, the effect of GW on climatic conditions in Vanuatu is one thing but the effect of rising sea levels, bleached coral reefs and turbulent weather on the nation's economy is another thing. Reports show that its tourism and main export, coconuts have been taking a hit as a result of these climatic conditions. The people of Vanuatu and its government have been in the forefront on the issue of climatic conditions in the country. They have been speaking with one loud voice on GW, calling on developed countries to take responsibilities with regards to immediate carbon cuts.¹²

Vanuatu provides an example of the sort of countries that *OB2* targets in two ways: firstly, it is vulnerable to GW and CC, and secondly, it is taking on disproportionate costs of their adverse effects. The Vanuatuan government relies heavily on foreign aid for its environmental projects. Its economy is centered on tourism and agriculture,

making its economy quite vulnerable to CC.¹³ As an island nation and like many developing countries, adaptation to those effects is quite expensive, and is unable to meet the costs of such adaptation. The money available to it is spent mostly on development and education and not much on the environment.¹⁴ With an eye on countries like Vanuatu *OB2* could be said to have placed the matter right where it should be placed.

Obligation 3 (Mitigation and Adaptive Capacity Enabling Obligation)

The third obligation is *the obligation for developed countries to support other developing countries by providing them with resources so that they can mitigate and adapt to the adverse effects of CC*. Speaking about the provision of financial resources, including the transfer of technology the UNFCCC states severally:

The developed country Parties and other developed Parties included in Annex II shall provide new and additional financial resources to meet the agreed full costs incurred by developing country Parties in complying with their obligations under Article 12, paragraph 1 (UNFCCC 1994: Article 4(3), p4).

The developed country Parties and other developed Parties included in Annex II shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention (UNFCCC 1994: Article 4(5), p8).

The reasoning for the obligation can be outlined as follows:

- P8. Mitigation and adaptation to the adverse effects of CC is expensive.
- P9. Adaptive capacity is closely linked to social and economic development Schneider (2007, 779–810).
- P10. The global distribution of resources and technologies (and environmentally friendly technologies) is disproportionate with developed countries having more access to these Schneider (2007, 779–810).
- P11. Adaptive capacity is unevenly distributed across different regions and populations with developed countries having more of such capacity than developing countries Schneider (2007, 779–810).
- C4. Therefore, developed countries have a responsibility to *support* developing countries by providing them with those resources (environmentally sound technologies and know-how, financial means) that will enable them mitigate and adapt to the adverse effects of CC (*OB3*) (UNFCCC 1984: Article 4(3 and 5), p8).

What is it that justifies *OB3*? Unlike *OB1* and *OB2* that appeal directly to the strict idea of equity within the context of global emissions and their effects on CC and humans, *OB3* does seem to appeal to something quite different—resources and technologies and how some global distribution or redistribution could help developing

countries mitigate and adapt to the adverse effects of CC and consequently, minimize the causes of CC.¹⁵ The UNFCCC takes this assistance to be important if developing countries are to meet their commitments under Article 12(1) and to implement the provisions of the Convention.¹⁶ One should point out that *OB3* does not target directly CC's effects but rather the prevention or minimization of the causes of CC. Given that it may be hard to establish a direct correlation between resources and technologies available in developed countries and the state of affairs in developing countries it is possible to question why developed countries should have this obligation in the first place. Perhaps one way to defend *OB3* is to tie it to the interests of developed countries in the sense that they benefit indirectly by assisting developing countries to manage their own share of GHGs emissions. By providing support to developing countries they are helping to protect the CC. The point is that whatever developing countries do that negatively affects the CS¹⁷ harms everyone and whatever they do that positively affects the CS benefits everyone. Accordingly, by providing assistance to them developed countries are helping to protect the interests of everyone in virtue of supporting them to do a number of things: cope with GW, deal with their GHGs emissions, and avoid messing up with the CS.

IV. SOME PROBLEMS WITH THE UNFCCC

The UNFCCC has been criticized as deeply flawed by many commentators. Here I will discuss three of such criticisms. The first concerns the general permissibility provision, according to which developing countries are permitted to increase their shares of GHGs emissions in the foreseeable future. The criticism is that the UNFCCC is not equitable in excluding certain developing countries, notably China and India from the obligation to impose minimal costs of emissions. George W. Bush well expresses the sentiments of those that question this provision. Following the US withdrawal from the Kyoto Protocol in 2001 he claims that impartiality forbids the exclusion of China and India from the obligation.

I'll tell you one thing I'm not going to do is I'm not going to let the United States carry the burden for cleaning up the world's air, like the Kyoto Treaty would have done. China and India were exempted from that treaty. I think we need to be more even-handed.¹⁸

But many have dismissed Bush's claim as a misguided sense of impartiality on the ground that it fails to take into account the disproportion in historical emissions between industrialized countries and China and India. For example, while the per capita emissions of the US is more than 5 tonnes and that of some other industrialized countries (Japan, Australia, Western Europe) hovers around 1.6 - 4.2 tonnes, that of China and India have only recently risen to 0.76 and 0.29 tonnes respectively (Gardiner 2004a, 586).

The general permissibility provision can also be defended from the point of view of the relationship between industrial capacity and development and GHGs emissions. The point is that since industrial capacity and development are closely tied to GHGs

emissions and since developing countries historically have had a smaller share of emissions it will be just to permit them to increase their share of emissions in the near future in order for them to meet their social and development needs. By contrast, given that developed countries are historically the biggest polluters and since their global emissions are not tied to their social and development needs (but luxury consumption and associated lifestyles) they have an obligation to impose minimal costs of emissions on others. To this extent, setting no immediate restrictions under UNFCCC for developing countries serves three purposes: one, it avoids restrictions of their development since GHGs emissions are strongly linked to industrial capacity and development; two, they can sell emission credits to nations whose operations have difficulty meeting their emissions targets; three, they get resources for low-carbon investments from developed countries.¹⁹

The second criticism is that the UNFCCC does not bind parties, that is, it is a legally non-binding treaty since it sets no mandatory limits on GHGs emissions and contains no enforcement provisions (Barrett 2003; Gardiner 2004a and 2004b). As a legally non-binding treaty, the UNFCCC is an instrument concerning joint statements of policy which establishes the intentions of the parties about certain course of actions rather than some legal obligations. Since the obligations in UNFCCC are not of the legal sort, no party can be sued for failing to discharge them. The case of dispute resolution among parties as stated in the UNFCCC does highlight this quite well, “In the event of a dispute between any two or more Parties concerning the interpretation or application of the Convention, the Parties concerned shall seek a settlement of the dispute through negotiation or any other peaceful means of their own choice” (UNFCCC 1994: Article 14). This means that when some disagreement arises whether with regard to interpretation, applicability and performance parties can neither go to court nor war. They simply have to resolve such differences by negotiations and other peaceful procedures.

To be fair the Kyoto Protocol provides some important updates, most significantly in the area of setting compulsory emission limits. Although the Protocol commits countries to binding targets for GHGs emissions²⁰ it is still relatively weak; for it contains no effective compliance and enforcement mechanism. Stated differently, the treaty is plagued by the performance problem. To put this more trivially it lacks the power to deal with countries that overshoot their emissions levels or fail to meet their obligations. Thus, it still lacks in a fundamental aspect. For although countries are committed to binding targets for GHG emissions without any real performance mechanism it is always easy for countries to (a) pull out completely from the treaty, as the recent case of Canada in 2011 demonstrates, or (b) not to commit to the obligations by refusing to ratify it, as is the case with the US in 2001, or (c) do less than one has committed to, as is the case with many signatories of the treaty, notably the Russia, the US and Canada (See Burck et. al 2012).

The third criticism is that the UNFCCC does not take into account the egoistic problem. This criticism amplifies the performance problem. The egoistic problem is generally framed as the intragenerational or intergenerational aspect of global emissions. The intragenerational aspect is understood in the game-theoretic terms of prisoner

dilemma and the intergenerational aspect is understood in terms of relationship between different generations. On both aspects, the idea is that insofar as high energy use is (or is perceived to be) strongly connected to self-interest, countries would have strong egoistic reasons to ignore the worst aspects of CC, and consequently abdicate whatever specific obligations they have committed themselves to (in the UNFCCC). If nations are self-interested with regards to carbon cut and are driven by the benefits of high energy use, then the absence of performance mechanism makes the egoistic problem more acute. On both problems, the reasoning for individual countries boil down to this: GHGs emissions produce substantial benefits through the production of energy, however, such activities expose humanity to the risk of huge costs of CC, but the costs and benefits are distributed disproportionately to everyone. There is no performance mechanism to prevent me (as a nation) from polluting, namely, I won't be punished by others for reaping the benefits of GHGs emissions and displacing its costs on others. Since I won't be punished for polluting it is beneficial for me to do so. Therefore, I will go on polluting.

The utility of the UNFCCC is queried by the egoistic and performance problems. Because they bother on the issue of one taking advantage of others by benefiting from a common resource both are best thought of as species of the problem of the tragedy of the commons. The tragedy of the commons refers to the absence of rights or the presence of common rights to a common resource. In the tragedy of the common, the motivation to take care of a capital in common is incongruent with the use of such capital. That is, the common resource will always be destroyed because the benefit that individuals derive from overexploiting it will offset the loss they suffer from its overexploitation.²¹ One general solution to this problem is to privatize the common. Another is to calibrate the performance mechanism that is to introduce appropriate regulations concerning the use of the resource combined with some effective enforcement instruments.

The calibration of performance mechanism and its importance in circumscribing rational self-interest has long been recognized centuries ago when Thomas Hobbes (1651: XVII, ¶2) first tersely remarked: "Covenants without swords are but words, and of no strength to secure a man at all." There are various regulations in the UNFCCC and the obligations I have discussed highlight how the regulations are tempered. However, it is plagued by the egoistic and performance problems and thus open to the possibility of big GHGs emitters taking advantage of others. Thus, because it does not wield the "sword" to back up the obligations the Convention could be said to turn them into empty "words".

V. BENEFICENCE, JUSTICE AND THE THREE OBLIGATIONS

Given the egoistic problem and given that the calibration of some performance mechanism is one solution to the problem of the tragedy of the common why does the UNFCCC not have such a device? Various explanations could be advanced for this, but one cynical explanation (which seems to be largely correct) is that it is because developed countries are unenthusiastic to follow through on emission targets due to the beneficial aspect of high energy use. The point is that if high energy use is advantageous developed

countries would feel less inclined to take their obligations seriously or bind themselves up with some enforcement provisions. To expect them to do so is akin to expecting Dracula to guard the blood bank and not take advantage of the blood in the bank. If the benefits that developed countries derive from GHGs emissions outweigh the costs they suffer it is more likely that they will be reluctant to exercise the political required to address the egoistic problem.

Raising concerns about the commitment of developed countries to the UNFCCC or to the obligations expressed therein is not misguided. And to raise such concerns within discussions of the performance mechanism should lead us to ask two related questions. How are the obligations framed in the UNFCCC? Should they be expressed otherwise? I now want to show, on the one hand, that the obligations in the UNFCCC are framed as OOB and, on the other, that some of them rather ought to be expressed as OOJ.

The approach that expresses the obligations as OOB has one important virtue. The advantage is that it preserves the norm of sound argumentation, according to which one appeals to logic rather than emotions or some other extraneous considerations. That is, the approach situates discussions of GW and CC rightly where they belong—within the context of justice.²² There is another possible virtue of this approach if it does indeed succeed. Given that actions that follow from OOJ are generally stronger than those that follow from OOB we would have circumvented the egoistic and performance problems if we can show that at least some of the obligations are those of justice. The point is that since it is now possible for other countries to take actions against derelict parties some incentives for taking the obligations seriously or the possibility for their realization would have been introduced.

VI. OBLIGATIONS OF BENEFICENCE (OOB), OBLIGATIONS OF JUSTICE (OOJ), AND THE COMPULSION PRINCIPLE

OOB is simply a duty to help those in need and to act for the benefit of others. Suppose you are rich and well fed and I am poor and hungry. You may have an OOB here, a duty to *help* me. But surely it would be preposterous to suggest that should you refuse to help me I can force you to discharge this duty. This is different from OOJ for which others can take further actions if the obligation is not realized. OOJ prohibits unfairly treating others and may require that one make right some previous acts of wrongdoing. Stated otherwise, the obligation gives those that have suffered harm or wrong from some other parties the moral space to seek some form of redress or rectification.²³

Notwithstanding this difference between OOB and OOJ both embody what might be called the *compulsion principle*. That is they compel some particular actions. For example, if one has an OOB, then one is *morally compelled* to perform specific actions that benefit others. And if one has an OOJ, then one is also *morally* (and may be non-morally) *compelled* to perform specific actions that are non-harming or rectificatory.²⁴ Rectificatory actions are actions that are performed by an agent in response to the

requirement to rectify some harm or wrong that their prior actions have caused to others. For the *compulsion principle* the actions compelled can simply be forwarding-looking or both backward and forwarding-looking. It is forward-looking when the actions that an agent is compelled or required to perform are evaluated in terms of how they benefit or fail to benefit some other party. It is both backward and forwarding-looking when the actions that an agent is compelled or required to perform are evaluated both in terms of how they benefit or fail to benefit some other party and their rectificatory value.

Justice (restorative) is concerned with restoring some wrongdoing. Restoration means putting things back as they were; thus may include some act of contrition to demonstrate that the perpetrator is genuinely sorry for their wrongful acts. To get to the backward and forward-looking compulsion (for any putative violations of justice) two conditions are said to hold:

Condition 1: a harm, loss, or damage, or injury has to occur (to a party)

Condition 2: the act that caused the harm, injury, loss or damage has to be an intentional or negligent one.

Unlike OOB that is a forwarding-looking compulsion in virtue of being concerned with how certain actions benefit or fail to benefit some other party OOJ is a backward and forwarding-looking compulsion because in addition to being concerned with actions that benefit or fail to benefit some other party the obligation calls for the realization of specific actions that are rectificatory. Saying that OOJ is a backward and forwarding-looking compulsion simply means that the *compulsion principle* compels actions that seek a fair state of affairs and, if necessary, remedying violations of the principle by making right some previous acts of harm or wrongdoing. Thus, if one has an OOJ, and if one fails to perform the requisite actions, by one's failure one has caused some harm, hence not performing the requisite action or failure to perform the action is to perform some harm-causing actions. The performance of such harm-causing actions calls for the performance of other actions, namely, the rectification of the harm that one's harm-causing actions brought about. The backward and forward-looking compulsion opens the space for some kind of introduction of some incentives for taking the obligations seriously or the possibility for their realization, or to put it crudely, the enforcement of the dereliction of OOJ. This is in virtue of the obligation compelling the performance of specific actions that rectify the harm or injury that one's prior actions or inactions have caused.

VII. OBLIGATION 1, OBLIGATION 2 AND OBLIGATION 3 AS OBLIGATIONS OF BENEFICENCE OR OBLIGATIONS OF JUSTICE

How are the three obligations framed in the UNFCCC and how do they fare with regards to justice? *OB1*, *OB2* and *OB3* are framed as OOB. I think that the treaty is right framing *OB3* this way. However, with regards to *OB1* and *OB2* I think it is mistaken. These obligations are framed as OOB. Conversely, they should be framed as OOJ.

OB3 is framed rightly given that above all it is expressed in terms of assistance. It is also about the state of affairs of the holding of resources, how their distribution

affects adaptive capacity, and how some kind of redistribution may empower developing countries to mitigate and adapt to the adverse effects of CC. This obligation states that developed countries have a responsibility to support developing countries by way of the provision of necessary resources that will enable them mitigate and adapt to the adverse effects of CC. Clearly, this is how we have cashed out OOB.

That *OB1* and *OB2* are expressed in the UNFCCC as OOB can be seen from the fact that they are routed through the language of beneficence. *OB2* speaks of the responsibility of assistance, which again is how OOB is generally understood—as *a duty to assist others*. *OB2* states that developed countries have a responsibility to assist countries that suffer the adverse effects of CC so that they too can meet the costs of adaptation to those adverse effects. Although *OB1* is not explicitly stated in the UNFCCC in exactly the same way it too can be read as an OOB. *OB1* states that developed countries have a responsibility to reduce their share of global emissions in order for them to mitigate the adverse effects of CC. The reason that this obligation can be read as OOB is that although the responsibility that developed countries are said to have is stated in terms of the reduction of GHG emissions the language expressing the responsibility is similar to those of *OB2* and *OB3*. *OB1* requires developed countries to cut back on GHGs emissions since doing so would benefit everyone. The justification for *OB2* and *OB3* is beneficence. That is, it benefits other countries if developed countries provide some form of assistance to them. For *OB2*, this benefit results when the necessary support is provided to countries that suffer the adverse effects of CC so that they can meet the costs of adaptation to those effects. And for *OB3*, this outcome obtains when developing countries are provided with resources that enable them to mitigate and adapt to the adverse effects of CC. Similarly for *OB1*, present and future generations are benefited when appropriate emission cuts are made.

In other words, it is because *OB2* and *OB3* require the performance of actions by developed countries that are positive and beneficial to other countries that it is considered good for them to perform them and bad when they don't perform them. *OB1* embodies similar requirement as well. Cutting back on GHGs emissions is advantageous for everyone. It will be good for developed countries to reduce their share of emissions and bad not to. What happens if developed countries do not cut back on emissions or fall short of respective emission targets? As it is with *OB2* and *OB3*, the dereliction of *OB1* incurs no definite penalty. And when this is placed within the context of the egoistic and performance problems then the sense in which all three obligations can be interpreted as OOB becomes clearer.

Now, suppose that I am right that *OB1* and *OB2* are framed in the UNFCCC as OOB and that this is mistaken. Suppose also that I am right that these obligations should be understood as OOJ. How may one go about expressing them as such? One way would be in terms of harm, prevention of harm and restoration of previous acts of wrongdoings. One may do so by claiming to begin with that some countries have suffered harm, are suffering harm, and will suffer harm with regards to GHGs emissions (call this the “harm suffering state”) for which developed countries are responsible (and may have benefited, are benefitting, and will benefit—call this the “benefit receiving state”). Consequently,

prevention of these harms and restoration of previous acts of wrongdoings will require rectificatory actions, namely, compensatory payments.

The argument that I am offering here is one that holds developed countries responsible for the harm or suffering state of developing countries. Since developed countries are primarily responsible for this state they have an obligation to perform rectificatory actions. Performing these actions may be interpreted partly as cleaning up the mess that their prior actions have caused, which is simply righting prior wrongful actions or restoring those that have been harmed to some prior un-wrongful actions. In this instance, Vanuatu, as are some other countries, would be good candidates for such compensatory payments since clearly GHGs emissions have worsened or are worsening their condition. If the people of the island nation is one of those bearing a disproportionate share of GHGs emissions, then displaced costs are being passed on to them and if this is the case, then justice demand that they receive compensatory payments.

There are some suggestions that the above line of reasoning is mistaken and thus should be jettisoned. There are two justifications often advanced for this. The first is that there were no international conventions that prohibited GHGs emissions at the time these countries were polluting. The idea is that it makes little sense to say that developed countries acted unjustly and consequently should perform rectificatory actions when they have not violated any conventions on justice. The second is related to the first and this is that “until comparatively recently, developed countries were ignorant of the effects of their emissions on the climate and so should not be held accountable for past emissions (or at least those prior to 1990, when the IPCC issued its first report) (See Gardiner (2004a, 585).

I think both views should be taken seriously; they object forcefully to my approach and line of argumentation since they anticipate in some form the ideas espoused by the two conditions of the backward-looking compulsion of justice. Hence, in order for me to be successful in my attempt to express *OB1* and *OB2* as *OOJ1* will need to attend to the two conditions given their assume centrality to the backward-looking compulsion (for any putative violations of justice). Whereas, condition 1 states that a harm, loss, or damage, or injury has to occur (to a party), condition 2 states that the act that caused the harm, injury, loss or damage has to be an intentional or negligent one. The objection then seems to be that at least one of these conditions has not been satisfied by GHG emissions and thus there is nothing to restore.

But I think the objection is somewhat flawed. This is because as Gardiner has noted, and, rightly in my view, “if the harm inflicted on the world’s poor is severe, and if they lack the means to defend themselves against it, it seems odd to say that the rich nations have no obligation to [compensate them], especially when they could do so relatively easily and are in such position largely because of their previous causal role” (Gardiner (2004a, 585). I don’t think that the idea that ignorance excludes one from an obligation or culpability can be defended in a context where the action in question, albeit done from ignorance leads to substantial harms and benefits for different parties. This line of reasoning suggests that condition 2 need to be weakened in such a way that what matters is *not* that the act that caused the harm, injury, loss or damage is intentional,

negligent but simply *beneficial in some form to one that caused the harm*. In other words, suffice for the condition is that the act is directly or indirectly beneficial to the party that caused the harm. On this version of the weakened condition, condition 2' will read thus: the act that caused the harm, injury, loss or damage has to be an intentional or negligent or *connected to some other acts that are directly or indirectly beneficial to the party that caused the harm*.

As a justification for weakening condition 2 and for the appropriateness of condition 2' consider the example of the "Purple Island People" (PIP) and the "Blue Island People" (BIP). The PIP live up north and the BIP live down south of one big island. Suppose that both peoples have no idea that the other exists. Suppose also, that the PIP are very affluent and the BIP very poor. Suppose finally, that the wealth of the PIP have come from some agribusiness that has left most of the part inhabited by the BIP damaged (that is, the poor condition of the BIP has come about because of the damage caused by the wealth-producing activities of the PIP). What would one say if both peoples eventually discover that the other exist and come to realize that the wealth of PIP directly or indirectly brought about the poor condition of the BIP? The BIP are likely going to feel wronged and may demand some compensatory payments for their condition. I do suspect here that the intuition of most people would be at sync with those of the BIP.

The idea that people should be restored to their prior state via compensatory payments by those that brought about action-harming actions, particularly when such individuals directly or indirectly benefited from such actions and could restore those that are harmed to some prior state with minimal cost to themselves is not uncommon. We seem to see this today in the way individuals, people and communities pursue claims against oil companies for harms and damages caused by oil spillages or activities of oil companies.²⁵ This seems to certainly be the case with the British Petroleum (BP) Deepwater Horizon Disaster in 2011. The US Government named the company the responsible party, held it accountable for all clean-up costs and damages, compensatory payments to those that suffered economic loss, and other harms.²⁶ For its part, BP accepted the responsibility to meet all proper claims.²⁷

The cases of suits brought against oil companies and the talk of BP's responsibilities, the obligations to clean open the gulf coast and payments of damages to those that have suffered economic loss didn't seem to require the stronger condition (condition 2). In these cases intentionality or negligence were not considerations in the complaint about harm, loss or damage. This is certainly true in the case of the BP Deepwater Horizon Disaster (See BBC News, 2010 and National Public Radio, 2010). On the contrary, what seems to be appealed to in these cases is the idea that the harmed caused by the companies is directly linked to their business activities which are (directly or indirectly) beneficial to them, which is exactly what condition 2' states. If this is right, and as our example of the BIP and PIP shows, it could be said that although developed countries were ignorant with regards to GHGs emissions but insofar as the harm suffering state of developing countries and benefit receiving state of developed countries are outcome of these emission actions the latter has an obligation to indemnify the former.

Expressing *OB1* and *OB2* as *OOJ* reflects the thought that what matters about the harms of GHGs emissions is the harm suffering state of developing countries and benefit receiving state of developed countries. Thus, for *OB2* we would express the obligation as “Developed countries have an obligation to compensate countries for their harm suffering state” (*OOJ2'*) rather than “Developed countries have a responsibility to assist these countries that are vulnerable to the adverse effects of CC and that will bear a disproportionate cost of the effect of CC to meet the costs of adaptation to those adverse effects we would have to express it as “. As for *OB1* rather than framing it as “Developed countries have a responsibility to reduce their share of global emissions in order to mitigate the adverse effects of CC” we would have frame it as “Developed countries have an obligation to mitigate future harm suffering state” (*OOJ1'*).

The rationale for expressing *OB1* as *OOJ1'* and *OB2* as *OOJ2'* simply is that others cannot be harmed by our actions (and for which some benefits accrue to us) without such actions not violating justice. This is based on the *compulsion principle*, which have three aspects. Firstly, the performance of specific actions that prevent the state of harm. Secondly, the requirement to rectify the harm that one’s actions have caused. Thirdly, the opening up of the necessary space for some enforcement of the injury caused by one’s harm-causing actions, or failure to rectify the effects of one’s harm-causing actions. In simple terms, *OOJ1'* and *OOJ2'* could modestly be stated as the obligations for rectificatory actions by developed countries, which would amount to all kinds of payments to countries for their harm suffering state.

Some objections could be raised against my expressing *OB1* as *OOJ1'* and *OB2* as *OOJ2'*. I consider one for each and then try to provide some responses to them.

VIII. SOME OBJECTIONS TO *OBLIGATION OF JUSTICE 1'* AND *OBLIGATION OF JUSTICE 2'* AND SOME RESPONSES TO THEM

One retort to expressing *OB1* as *OOJ1'* would be that the harm causing actions of GHGs emissions were performed by others so *we* (our generation) cannot be held responsible for such harms. That is present emissions are not responsible for any present harms that some countries may now be experiencing, so the norms of justice have not been violated by *we*. Given that emissions responsible for the present CC happened centuries ago and it would seem unfair to hold the present generation responsible for the emissions caused by their forbears (who when they were polluting did not intentionally set out to cause harm).

As appealing as this argument is it seems to me unconvincing. Suppose that your present injuries were caused by my forbears can’t I as a descendant of my forebears be held responsible for your situation? On condition 2, it seems that it would be difficult for me to do so. But we have already made a case for weakening this condition. On our weakened condition (condition 2’), what suffice is that there was direct or indirect benefit by me from the actions of my forbears that caused you harm. Thus, if your present injury is caused by things that my forbears did some generations ago it appears odd to say that I have no obligation to indemnify you especially if I benefitted (directly

or indirectly) from those activities and if I could indemnify you with minimal costs to myself. And as Shue argues, the case for compensatory payments obligations to others who are deprived of certain goods is made stronger if one's overuse both effectively denies others the means of extricating themselves from the problem caused by the overuse and further reduces the likelihood of fair outcomes on this and other issues Gardiner (2004, 585).²⁸

Another objection, one that relates to the first one can be started thus: Whatever 'wrongs' and 'harms' that were committed by the PIP and developed countries were done in a time of complete ignorance of the wrongs and their actions bringing about such harms.²⁹ Stated differently, given that there is an epistemic gap in the past actions of developed countries and the wrongs and harms of those actions, it would (a) be unfair to punish them, and (b) irrational, in light of new knowledge, for both developed and countries to continue polluting. There are two parts to this objection. The first is that given the issue of epistemic gap in the past actions of developed countries they should not be held responsible for what they did in the past. The second part is that responsibilities for regulating the CS should be equally shared between developed and developing countries (even if it is the case that doing so jeopardizes the developmental aspirations and goals of developing countries).

My response to the first part of the objection is a very simple one and in some way similar to my response to the first objection. And this is that given that developed countries benefited from their past actions it does seem fair to ask them to share some of these benefits with developing countries even if they were ignorant of the wrongs and harms of their actions in the past. And there are many ways of sharing their resources with developing countries which may include transferring technology and 'capital' to developing countries, fair international trade practices with developing countries, and having in place international mechanisms to foster and enhance developmental goals in developing countries, among others. But in all of such sharing, the obligation is one of justice and not of beneficence. That is, developed countries share their resources with developing countries because it is the just and fair thing to do and motivated by the need to right the injustices of their past actions (even if they acted in sheer ignorance in the past).

Regarding the second part of the objection, one might simply respond by saying that since the differential obligations, which allow developing countries a bit of leeway regarding pollution is meant to facilitate their development, asking them to stop embarking on activities that advance their development is to treat them unfairly (even if it is the case that such activities create problems for the CS). Furthermore, one may argue that the point about having in place international mechanisms to foster and enhance developmental goals in developing countries, as part of developed countries sharing their resources with developing countries is precisely meant to address the past instances of injustices brought about by the actions of developed countries. The point is that since the polluting activities that take place in developing countries are minimal compared to those of the developed countries, requiring them to quit practices that jeopardize the CS does not take into account the broader issues of past wrongs and

harms. Of course, the differential obligations would become otiose as soon as developed countries discharge their obligations including sharing their resources with developing countries. But until we have a world that is fully committed to the implementation of a regime of fair international reallocation of resources, as part of developed countries sharing their resources with developing countries, polluting activities from the developing countries seem to be, that moment, in line with the demand of justice.

Expressing *OB2* as *OOJ2'* could be objected to on the ground that the dereliction of the obligation does not violate any account of justice. That is future harm causing actions of GHGs emissions are not proper subject of justice. This is because harms from present GHG emissions are futuristic and since present emissions cause only future harms it is wrong that anyone be required to pay for any harm that have not yet occurred. The point is that since present emissions are not responsible for any present harm that some countries may now be experiencing, one cannot say that justice has been violated. Since the harm for present emissions is not being borne by anyone at present it will be preposterous to require that someone or some countries that haven't suffered any harm be indemnified for harms that are centuries away.

There are two possible responses to this argument. The first is that since present emissions negatively affect the future state of the CS and since this will be borne by future generations and since they have a right to a habitable planet justice is violated when countries refuse to cut back on emissions levels. Some may be unconvinced by this argument especially within the context of the vagueness of the rights of future generations. However, given that our actions are for the most part shaped by thoughts about future generations I don't think stating an argument in terms of their interests or taking their considered preferences into account is entirely misguided. In any case, since the UNFCCC takes the interests of future generations along with those of the present as justification for the obligations for caring about the CS I simply go along with it in this respect (UNFCCC 1994: Article 3(1), p4). This takes me to my second response. One might argue that since big GHGs emitters would not be here in the future to pay the appropriate compensation and given the possibility that our progeny may refuse to take on such responsibility, it would be just to require big emitters to "pay" now. There are two ways to make such compensatory payments. One is to "punish" them for violating GHG emissions target and ceilings that have been internationally agreed to. Another is to require that they compensate those that will suffer from the effects of global emissions in the future. Both aspects of compensatory payments are comparable to an auto issuance policy. When one takes an insurance policy for one's vehicle one pays regular (monthly) premiums. The premiums are invested and expected to be used to pay for future repairs and compensations such as accidents that result from one's future actions. Although one hasn't brought about the state but by signing on to an auto insurance policy and paying regular premiums one already takes on some obligation to indemnify any possible future events (damages, accidents, victims, etc.). The "GHGs insurance program and policy" could be said to work the same way.

CONCLUSION

In this paper, I have discussed the three obligations in the UNFCCC and what they entail. I have made a case for why one may think that the obligations are framed in the treaty as OOB and why some of them ought to be expressed as OOJ. *OB3* is rightly expressed as OOB since it is primarily about the state of affairs of the holding of resources, how their distribution affects adaptive capacity, and how some kind of redistribution may empower developing countries to mitigate and adapt to the adverse effects of CC. But not so with *OB1* and *OB2*, which lend themselves to being expressed as *OOJ1'* and *OOJ2'*. As OOJ, they embody the *compulsion principle* by compelling certain actions; proscription of harm-causing actions, rectification of the damages brought about by the harm-causing actions, namely making right some previous acts of wrongdoing. Since any imposition of harms on others violates justice, a duty is imposed on developed countries, an obligation for compensatory payments to countries for their harm suffering state from GHGs emissions.

One virtue of this approach is that it offers some way of addressing the egoistic and performance problems since it introduces some incentives for taking the obligations seriously. One of the problems that confront the UNFCCC is the performance problem which is linked to the egoistic problem. For the most part, developed countries have not been particularly good with regards to assistance to developing countries—they do seem to have a poor record with regards to financial contributions to them, as can be seen from their commitments to the Millennium Development Goals. Given such poor record it doesn't seem oddly surprising in the way that they have gone about GHG emissions cut. Thus, it is not particularly surprising that they are lukewarm and not following through re assistance to developing countries to help them deal with GHGs emissions (See Singer (2002, 44-45)). By introducing some incentive for the performance of the obligations my approach introduces something akin to the appropriate performance mechanism required to solve the problem of the tragedy of the common. The incentive is simply a motivation for developed countries to realized *OOJ1'* and *OOJ2'* by preventing or mitigating any harm suffering state. With *OOJ1'* and *OOJ2'* the issues of reduction of GHG emissions is now a matter of *justice* hence, developed countries can be held both accountable (both morally and non-morally) for global emissions and for bringing causing some harm suffering state. Because countries now reserve the right to take actions against other countries or now able to seek for ways of enforcing these obligations including imposing economic sanctions on errant or derelict countries it is no longer likely to be beneficial or in the self-interest of countries to go on polluting or to refuse to realize these obligations.

NOTES

1. As an international environmental treaty, the UNFCCC emerged from vigorous discussions by about 154 participating governments at the United Nations Conference on Environment and Development (which informally is known as the Earth Summit) in

2. The treaty notes that atmospheric concentrations of GHGs have increased considerably by human activities and that these increases enhance the natural greenhouse effect which will “result on average in an additional warming of the Earth’s surface and atmosphere and may adversely affect natural ecosystems and humankind” (UNFCCC 1994: 1).

3. These include finance, environmentally sound technologies and knowledge.

4. The November/December 2012 Doha Climate Change Conference, which extends the Kyoto Protocol from 1 January 2013 to 31 December 2020 and discussed provisions to compensate developing countries for loss and damage from climate-related events is a movement in the direction of thinking of obligations to cut carbon emissions in terms of justice.

5. For a summary discussion of these four positions, see Gardiner (2004, 583-589).

6. See also, Bloomfield (2013, 283-304).

7. For example, it says on p3 that the parties to this Convention are “Determined to protect the climate system for present and future generations” and in Article 3(1), p4 that “The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity...”

8. If we use the financial system’s metaphor of debit and credit to mark the impact of GHGs emissions on CC, where debit is loss and credit is gain and if we take the CS as being in loss then our planet is in “climate deficit.” Given that developed countries have polluted more than developing countries we could say that they have zero or negative emissions credits left. Stated otherwise, they have “climate debts” and by contrast, developing countries have “climate credits.” Because they have “climate debts,” developed countries have a stronger obligation to reduce their share of global emissions. Contrarily, because they have “climate credits” developing countries have little obligation to reduce their share of global emissions.

9. The idea is that if affluent countries are primarily responsible for a very large percentage of historical emissions and if the likely costs of those emissions are expected to be visited on less affluent countries, then it seems just that they be required to provide assistance to those that will suffer those costs. For some argument along this line see Gardiner (2004a, 584) and Gardiner (2004b, 23–39).

10. See some studies on (a) how climates in the Vanuatu chain of islands are linked to global warming, and (b) the southern Pacific region that show the increase in the annual and seasonal ocean surface and island air temperatures since 1910 throughout a large part of the South: *The Island Climate Update* 134 (2011, 11); United Nations Foundation, IPCC (1988); United Nations Foundation, IPCC (2007a, 48); United Nations Foundations, IPCC (2007b); Revell (2004, 4); Australian Government, Bureau of Metrology; Laj (2004,15-31); Hay et al. (2003); Griffiths et al. (2003, 847-869); Folland et al. (2002); Fitzharris (2001, 537); Salinger et al. (2001, 1705-1721); GEF/UNDP/SPREP).

11. See Caldwell (2005); Bohane (2006).

12. In a warning often repeated by environmental activists and campaigners, the Vanuatuan president (in 26 September 2008) told the UN that entire island nations, including that of Vanuatu could be submerged. Such a tragedy, according to him, would

be a failure on the part of UN and its members in their first and most basic duty to a member nation and its innocent people. Lomborg (2009).

13. Tourism contributes to about 72 per cent of Vanuatu's Gross Domestic Product and coconuts make up about 31 per cent of exports.

14. Lomborg (2009) notes that the 2007 environment budget of Vanuatu is 7 million vatu, which is approximately \$66,000 Australian, Lomborg (2009).

15. Article 4(7) of the UNFCCC (p8) states: "The extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology and will take fully into account that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties."

16. These commitments, which are stated in Article 12(1) of the UNFCCC (1994) are related to the communication to the Conference of the Parties, through the secretariat, the following elements of information:

- a. A national inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, to the extent its capacities permit, using comparable methodologies to be promoted and agreed upon by the Conference of the Parties;
- b. A general description of steps taken or envisaged by the Party to implement the Convention; and
- c. Any other information that the Party considers relevant to the achievement of the objective of the Convention and suitable for inclusion in its communication, including, if feasible, material relevant for calculations of global emission trends."

As well, the commitments include proposing projects for financing, including specific technologies, materials, equipment, techniques or practices that would be needed to implement such projects, along with, if possible, an estimate of all incremental costs, of the reductions of emissions and increments of removals of greenhouse gases, as well as an estimate of the consequent benefits." (UNFCCC 1994: Article 12(4), p16).

17. Some of which includes slash and burn and the clearing of land for agricultural purposes, commercial logging, overgrazing, fuel-wood or firewood for energy, poor agricultural and harvesting techniques, improper and expansive mining activities—activities that may result in deforestation, desertification, pollution, soil erosion and degradation.

18. Quoted by Singer (2010, 30).

19. The rationale for the general permissibility provision has been beautifully articulated by Henry Shue. He writes: "Even in an emergency one pawns the jewellery before selling the blankets. . . . Whatever justice may positively require, it does not permit that poor nations be told to sell their blankets [compromise their social and development needs] in order that the rich nations keep their jewellery [continue their luxury consumption and associated life styles]." Shue (1992, 397).

20. Under the Protocol, 37 industrialized countries and the European Community, that is 15 states in the European Union at the time of the Kyoto negotiations committed

themselves to binding targets for GHG emissions.

21. The tragedy of the commons is the title of an article by Garret Hardin that was published in the journal of *Science* in 1968, where he describes the dilemma posed for the use of a common property in the absence of individual rights to that property (Garret 1968). The tragedy of the commons (Hardin 1968, 1243-1248). For a discussion of this dilemma, see Hardin (2010, 434-442).

22. Expressing the obligations as OOJ is consistent with various aspects of issues of international justice that writers like Dale Jamieson, Paul Harris, Paul Baer, Henry Shue, Peter Singer, Paul Harris have suggested in connection with CC and the environment. See Jamieson (2010, 263-283); Harris (2003, 149–56); Baer (2010, 247-262); Shue (1992 & 1995, 385–392); Singer (2010, 181-199).

23. There are four different accounts of justice that are generally discussed in the literature. (1) Distributive justice (sometimes called social and economic justice), which is concerned with fair share of distribution. This type of justice is first and foremost interested in the allocations of goods or the benefits and burdens of an economic activity, broadly construed, and secondly, with whether such distribution is fair or not; (2) Procedural justice (also called rule justice) is concerned with fair play and the fair process in deciding what is to be distributed; (3) Restorative justice (sometimes called reparative or corrective justice), which is about restoring some wrongdoing; (4) Retributive justice (also called revenge justice) concerned with making the guilty party suffer in return for the harm that they caused. Restorative justice is the focus of this paper.

24. My argument for recitificatory actions for harm -causing actions does presuppose some form of the harm and precautionary principles. It should not be taken that the argument I make ignores or discounts the controversies associated with these principles. Notwithstanding this, I follow the Wingspread Statement which states thus: “When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically” Wingspread Statement (1998).

25. For some of these claims and suits see (1) *Reuters* (2012), (2) *Huffington Post* (2012), (3) Smith-Spark (2012), and (4) Mason (2011). For (1), the filling of the suit against Chevron and the drilling firm Transocean by Brazil’s largest oil workers union is over a spill in November 2011 that leaked an estimated 2,400 barrels of oil in the Atlantic. As for (2) Tony Merchant, a Regina-based lawyer is responsible for organizing the claim for the community. The suit is seeking more than \$75 million from Plains Midstream Canada, for their pipeline that leaked up to 475,000 liters of light sour crude into the Red Deer River earlier in June 2012. Regarding (3), the four Nigerian farmers and the environmental group Friends of the Earth that took the oil giant Shell to court in October 2012 in the Netherlands are demanding a proper cleanup and compensation for pollution in the Niger Delta, particularly in the three villages of Goi (hit by a spill in 2004), Oruma (affected by a spill in 2005), and Ikot Ada Udo (hit by various spills in 2007). And as for (4), the Bodo community of Nigeria is suing Royal Dutch Shell in London for the devastation that the community has suffered from an oil spill resulting from a key

pipeline burst in the summer of 2008.

26. As part of their initial response to the disaster, BP agreed to create a \$20 billion spill response fund administered by Kenneth Feinberg. They also decided to set aside a further \$847m (£540m) for compensatory payments, thus raising the potential cost to \$38bn. The \$38bn already includes \$14bn in costs to restore 4,375 miles of shoreline and \$8.8bn in compensation payments. See Capitol News Company (2010); National Public Radio (2010); Weisman and Chazan (2010); BBC News (2010).

27. After the meeting with the US President Barack Obama, the BP Chairman Carl-Henric Svanberg said that BP would “live up to all *responsibilities* ... and all proper *claims*” (National Public Radio 2010); emphasis added.

28. See also Shue (1992, 397).

29. I thank one of the anonymous reviewers for directing my attention to this objection.

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Submitted: 6 December 2018; revised: 14 November 2019