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# Climate Change and Compensation

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**Abstract.** This paper presents a case for compensation of actual harm from climate change in the poorest countries. First, it is shown that climate change threatens to reverse the fight to eradicate poverty. Secondly, it is shown how the problems raised in the literature for compensation to some extent are based on misconceptions and do not apply to compensation of present actual harm. Finally, two arguments are presented to the effect that, in so far as developed countries accept a major commitment to mitigate climate change, they should also accept a commitment to address or compensate actual harm from climate change. The first argument appeals to the principle that if it is an injustice to cause risk of incurring harm in the future, then it is also an injustice to cause a similar harm now. The second argument appeals to the principle that if there is moral reason to reduce the risk of specific harms in the future, then there is also moral reason to address these harms if they materialize now. We argue that these principles are applicable to climate change, and that given the commitment of wealthy countries to a “common but differentiated responsibility,” they lead to a commitment to address or compensate harm from climate change in poor and vulnerable developing countries.

**Key words:** harm, risk of harm, injustice, developing countries.

In the discussions within the United Nations Framework Convention on Climate Change (UNFCCC) about what to do about global climate change, the focus is on how to mitigate climate change and to some extent on how we as humans should adapt to future climate change. Even though the issue of addressing losses and damages associated with climate change in developing countries (that are particularly vulnerable to the adverse effects of climate change) has been on the agenda of a work programme since COP 16 in Cancun 2010, the prospect of reaching agreement on this topic looks somewhat bleak – mainly because developed countries have concerns related to liability or compensation.

The aim of this article is firstly to briefly describe the linkage between the issues of mitigation and poverty eradication that make compensation important. In the ethical literature, however, compensation has been met with skepticism. Secondly, we argue that this skepticism tends to frame the issue mistakenly and that it does not affect compensation for currently occurring losses and damages, which is our interest. Thirdly, we present and investigate two arguments to the effect that the commitment of the wealthy countries to mitigation also obliges them morally to commit to providing compensation for losses and damages related to anthropogenic climate change.

Please note that throughout the article we distinguish between and generalize across two groups of countries: the poor countries (the so-called developing countries<sup>1</sup>) and the wealthy countries (the so-called developed countries<sup>2</sup>).

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1] The notion “Developing Countries” refers to the definition used by the World Bank: “Developing countries are countries with low or middle levels of GNP per capita.” (World Bank 2004)

2] The notion “Developed Countries” refers to the definition used by the World Bank: “High-income countries, in which most people have a high standard of living” (World Bank 2004).

## I. BACKGROUND

The background is twofold. First, climate change is already a reality (e.g. UNFCCC 2011; IPCC 2007). The average global temperature at the Earth's surface has increased by 0.74°C during the last 100 years (e.g. European Commission 2011), which has brought serious consequences to part of the world's population. The World Health Organization (WHO 2005) thus estimates that

the effects of the climate change that has occurred since the mid-1970s may have caused over 150,000 deaths in 2000. It also concluded that these impacts are likely to increase in the future.

The causes of these deaths include heat waves, severe weather phenomena such as hurricanes, floods and declining availability of food and clean drinking water (WHO 2005).

Secondly, there appears to be a conflict between the goals of mitigating climate change and the eradication of poverty. It might be thought that a reduction in greenhouse gas emissions would benefit all, including the world's poor. This may be true in the long term, but not in the short term. Even in the scenario where the goal of the UNFCCC is to keep the average global temperature rise below two degrees Celsius relative to pre-industrial times is fulfilled, the temperature will continue to rise in the present century with considerable consequences.

According to the IPCC and WHO, there is a clear tendency that the World's poor are experiencing and will continue to experience the most serious consequences of climate change. This is due to two main reasons. First, the population in developing countries often lacks the necessary resources to be able to adapt and protect themselves from even the smallest fluctuations in climate. Secondly, because of their geographical location in subtropical or tropical climate zones where climate changes have and are predicted to have the biggest impact, the World's poor are and will be more exposed to changes in the climate (e.g. IPCC 2007; UNFCCC 2011; European Commission 2011). This means that climate change will probably counteract the goal of eradicating severe poverty and increase vulnerability to further poverty (Ahmed et al. 2009; Nelson et al. 2010). Moreover, there will be an increased tendency for the extremely poor<sup>3</sup> to remain in poverty.

The other side of this coin is the observation that the relative success of fighting severe poverty since 1990 appears to be unsustainable in the sense that it has been accompanied by increased emissions in greenhouse gases. In 2008, in spite of the population growth, both the number of people living in extreme poverty and the poverty rates fell in every developing region compared with 2005 (UN 2012). In developing regions, the proportion

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<sup>3</sup>] The notion "extremely poor" refers to the definition used by the World Bank: "Extreme poverty is defined as average daily consumption of \$1.25 or less and means living on the edge of subsistence." (World Bank 2012)

of extremely poor fell from 47% in 1990 to 24% in 2008. However, with estimates of a poverty rate just below 16% in 2015, there is still some way to go. Moreover, the proportion of undernourished has not decreased at the same rate as income poverty and has even stalled in many regions.

A major factor underlying the relative success of poverty eradication is the economic growth experienced in many developing countries. Perhaps not surprisingly, this growth has been accompanied by an increase in greenhouse gas emissions. Thus, emissions from developing countries more than doubled from 1990 to 2008. In 2009, when the economic crisis hit, emission levels in developing countries slowed down. The total level of greenhouse gas emissions in developing countries in 2009 became, however, nevertheless larger than the total level of emissions from developed countries. Still, the *per capita* level of emissions remains far higher (more than a factor 3) in developed countries.

Another problem, also related to climate change, is decreasing forest areas. Forest areas in Asia increased from 2000 to 2010, but continue to decrease in Africa and South America, resulting in a worldwide net loss. Hence, climate change threatens to counteract poverty eradication, while the mitigation of climate change conflicts with economic growth in poor countries. In the latter case, the wealthy countries have accepted not to burden the poor countries, but in the former case, the adverse effects of climate change on poverty eradication seem to have been accepted. It is this mismatch that we wish to focus on.

## II. UNFCCC: MITIGATION, ADAPTATION AND COMPENSATION

Since 1992, the UNFCCC has facilitated international negotiations and discussions on climate change. It is through the UNFCCC that the 195 member countries agree on and define the global priorities and objectives for the climate, which the member countries subsequently are required to implement in national policies. Since the establishment of the UNFCCC in 1992, the main objective of the international climate negotiations has been to limit the average global temperature increase and the resulting climate change. UNFCCC's main focus has thus initially been on the mitigation of climate change.

In the early 1990s, climate scientists claimed – despite limited scientific evidence – that the experienced global temperature rise was probably associated with an increase in the level of greenhouse gases in the atmosphere. On this basis, UNFCCC member countries formulated and signed the Kyoto Protocol in 1997, which committed all wealthy countries to stabilizing and reducing their greenhouse gas emissions to approx. 5% below the 1990 level during the first “commitment period” 2008-2012. The poor countries were not included in the Kyoto Protocol:

The Kyoto Protocol was structured on the principles of the Convention. It only binds developed countries because it recognizes that they are largely responsible for the current high levels of greenhouse gas emissions in the atmosphere, which are the result of more than 150 years of industrial activity. The Kyoto Protocol places a

heavier burden on developed nations under its central principle: that of “common but differentiated responsibility.” (UNFCCC 2011)

In 2007, the alleged cause of global temperature rises was reinforced to the world’s population. In the wake of an unusually high number of serious weather-related disasters and an almost unbroken series of heat records year after year, the IPCC published a report firmly stating that climate change is largely due to increased concentrations of greenhouse gases in the atmosphere caused by human activity (IPCC 2007; UNFCCC 2011). Furthermore, the IPCC report stated that the concentration of greenhouse gases in the atmosphere is most likely directly linked to the average global temperature on Earth, as the concentration of greenhouse gases has increased steadily along with the average global temperature since the time of the Industrial Revolution.

Thus, the main objective of the international climate negotiations within UNFCCC framework is continually to limit countries’ emissions of greenhouse gases in an effort to limit climate change: “At the very heart of the response to climate change lies the need to reduce emissions.” (UNFCCC 2011)

Previously, the question of adapting to climate change was not high on the UNFCCC list of priorities. However, during the international climate meeting COP 16 in Cancun in 2010, the UNFCCC member countries signed the CAF (Cancun Adaptation Framework), which committed each member country to the prioritization of adaptation to climate change so that it received equal importance alongside the mitigation of climate change. According to the UNFCCC’s website, this new focus on adaptation is a result of the serious consequences that climate change has already had for the world’s population, as well as the need to prevent some of the serious effects on human life which climate change is predicted to have in the future: “Adaptation to the adverse effects of climate change is vital in order to reduce the impacts of climate change that are happening now and increase resilience to future impacts.” (UNFCCC 2011)

Furthermore, recognizing once again their larger responsibility and the fact that many developing countries are vulnerable to the adverse effects of climate change, the UNFCCC’s wealthy member countries have through the CAF committed themselves to supporting developing countries in their adaptation to climate change. This support includes funding, technology transfer and capacity building (UNFCCC 2011).

Since 2008, the world’s poor countries, led by the Philippine government as well as a number of government officials from several African countries, have tried to raise the issue of compensation in the UNFCCC framework (UNFCCC 2008; Climate-Justice Now 2010). At COP 16 in Cancun in 2010, a work program on approaches to addressing loss and damage from climate change in particularly vulnerable developing countries was launched, but so far little progress has been made. Ironically, the Philippines recently became victim of a major disaster caused by an unusually powerful typhoon. However, even though this led to an intense focus on the issue of compensation at the latest COP (19 in Poland), the prospect of an agreement in this matter looks bleaker than ever.

### III. THE ETHICS OF CLIMATE CHANGE

Our point of departure is a very elementary and widely accepted moral principle:<sup>4</sup>

(1) You should not do something for your own benefit if it harms another person.

A corollary to this principle is:

(2) Whenever you cause harm (by doing something for your own benefit), you should normally compensate the victim.

John Broome (2008; 2012) and Paul Baer (2006), to name a few, consider this principle to be applicable to anthropogenic climate change, and so do we. The idea is that greenhouse gas emissions will cause large scale harm in the future; as a matter of fact, such harm is already occurring on quite a large scale, as illustrated by the estimates of the WHO (2005). Broome (2012) points out a number of conditions for the principles to apply to climate change: The harm is the result of acts, not omissions, and these acts are (in most cases) done with harm as the foreseeable consequence; the harm is serious; we (i.e. the rich) normally make emissions for the benefit of ourselves, and we could easily reduce our emissions. We (the rich) harm each other, but since this harm is reciprocal, we could not plausibly say that we are doing an injustice to each other. But the harm we (the rich) inflict on the poor is not reciprocal. The small reciprocal harm done by the poor is not plausibly an injustice to the rich. Hence, Broome concludes, the rich do an injustice to the poor.

Moreover, this injustice is not compensated. It might be said that we compensate future generations, at least to some extent, because they are likely to be better off than we. But to the extent we deprive them from important environmental goods, economic growth may not count as compensation for the injustice. And clearly, the future and the present poor are not even compensated in this way.

There are, however, some complications when applying the principle to climate change. One concerns uncertainty, in that we do not know for sure the exact harm that greenhouse gas emissions will cause in the future. It is quite certain that greenhouse gas emissions result in an increased greenhouse effect, while it is also relatively certain that this leads to global warming. However, it is more uncertain how much the temperature will rise for a given scenario of current and future emission levels. It is also uncertain how the climate will react, and how changes in the climate will affect people in the future. The latter also depends on how people in the future are able to cope with climate change. However, it is very likely that continued emissions will have dramatic effects on the climate, and that this further is very likely to severely affect people in the future. Hence, it is more precise to say that greenhouse gas emissions cause (severe) risk of future harm. However, we believe that authors like the above-mentioned are well aware of this complication, and that they just use 'harm' as a shorthand for the more precise 'risk of harm' or better 'very likely harm.'

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4] Quoted from Broome 2008, 69.

Another complication is the *Non-identity Problem* (Parfit 1984). This is relevant for climate change if we consider the choice between two overall strategies such as "doing nothing" or "reducing greenhouse gas emissions considerably." Since this choice is very likely to make a huge difference on peoples' lives, it can be considered a *Different People Choice*, i.e. the choice affects the identity of future people, such that the people that come into existence in the two alternatives will be different people. According to the normal understanding of "harm," i.e. being made worse off than one otherwise would have been, choosing to "do nothing" will not harm future people, since if the alternative strategy is chosen instead, these particular people will never come into existence. Many authors do not mention the *Non-Identity Problem* when they speak about harm resulting from anthropogenic climate change. But what they may mean by "harm" could be something like "the people living in one scenario are overall worse off than the people living in the other scenario."<sup>5</sup>

A further complication is connected to the causal link between acts and harm. In the case of climate change, this link is long and winding. Multiple causal factors underlie the ultimate harmful effects of climate change. However, though the causal complex here probably is more complex than for many other phenomena, multi-causality and uncertainty about the exact structure of the causal complex is not unusual. Dealing with a set of correlations, there are statistical methods to estimate the contribution of individual factors in the creation of an outcome. The WHO's estimate quoted above exemplifies this.

Whereas Broome (2008; 2012) is mostly concerned with reducing greenhouse gas emissions to mitigate climate change, Baer (2006) deals with adaption, more precisely the duty to provide financial aid to the poor in support of their adaption to climate change. This can be seen as *ex ante* compensation now for envisaged future harm. We want to deal with the issue of *ex post* compensation of materialized harm,<sup>6</sup> and in particular, we consider it necessary to highlight the relation between principles (1) and (2). Within the UNFCCC, developed countries have accepted a duty to mitigate climate change for the sake of future generations through reductions in emissions, to prioritize adaptation as another means of reducing the risk of harm from climate change, and further to commit to supporting vulnerable developing countries with adaptation measures. However, although the need to compensate vulnerable countries is recognized in principle, developed countries have been more reluctant to commit themselves to action in this case. This seemingly fails to draw the consequences of (2) which are implied by (1).

Meyer and Roser (2011), Caney (2005) and Miller (2009) all discuss the issue of compensation. However, they all discuss it in the context of determining a fair way of

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5] This is what Parfit (1984) calls "an impersonal view." Broome (2004) takes the view. Lukas Meyer (2003) has framed a threshold notion of harm: A person brought to exist with a welfare level below the threshold is harmed.

6] Baer (2006) explicitly talks about "adaptation," but he uses the language of "liability" and "compensation." It is not entirely clear how he distinguishes between adaptation and compensation, if he considers this distinction important at all.

allocating the costs of mitigating and adapting to climate change. This leads them to assume that there is *some* justified or fair level of present emissions, so that only if this level is exceeded will compensation be relevant. But from the fact that there is an issue about the fair allocation of costs, or the fair allocation of emission permits within the internationally agreed objective of reducing emissions, it does not follow that the resulting level of emissions is fair or justified in itself. If emissions (for the benefit of the emitter) lead to uncompensated harm, they are simply unjust. In other words, presently *no* level of avoidable, uncompensated emissions can be justified (or at least no emissions above the *per capita* level in developing countries). Broome (2012) is perhaps the first to clearly recognize this.<sup>7</sup>

Meyer and Roser (2011), Caney (2005), and Miller (2009) discuss compensation in terms of the so-called *Polluter Pays Principle*. They are mostly concerned with compensation for historical emissions. Thereby, they seem to imply that historical emissions are the most important cause of climate change and that the present generation cannot be held responsible for the actions of their predecessors. For instance, Caney (2005, 127) writes:

It is, for example, widely recognized that there have been high levels of carbon dioxide emissions for the last 200 years, dating back to the industrial revolution in Western Europe.

Apart from the fact that our focus is on present emissions, this seems to overestimate the importance of historical emissions with regards to present harm. Looking at the historical data, greenhouse gas emissions only began to increase steeply in the 1950s, with the climate being apparently largely unaffected up until then. At least the IPCC (2007) dates the *anthropogenic* temperature rise to approx. the mid-1950s. The WHO (2005) appears to date the first damage from climate change to the mid-1970s. Hence, we suggest the hypothesis that anthropogenic climate change only began to cause harm around the mid-1970s. However, if this goes back to the increased levels of emissions starting in the 1950s, then it is *largely the current generation's emissions that have been harmful*.

The role of preceding generations is thus mainly that they exhausted the earth's capacity to absorb greenhouse gasses without harmful effects and thereby brought about a situation whereby greenhouse gas emissions suddenly started to be harmful. This might be considered a historical injustice. Developed countries can be said to have been compensated to some extent through their economic growth, whereas developing countries have not been similarly compensated. But this injustice is not our concern in this paper.

Another problem for compensation raised in the literature is the *Non-Identity Problem*. Victims of climate change might be said not to be harmed, if they owe their existence to past generations' policies. However, if we look at harm from present emissions, then

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<sup>7</sup>] Broome himself takes this observation to be most important for private individuals. We believe it is also important for governments.

even though there is some delay between emissions and harmful effects, the *Non-Identity Problem* is largely irrelevant. Moreover, as we stress in the next section, even though the *Non-Identity Problem* applies to harm in the distant future, it is not considered relevant when considering whether or not to mitigate.

A final problem raised in the literature is ignorance. The first question is whether ignorance about unintended adverse side-effects of an act exempts from paying compensation. In some cases of pollution at least, it clearly does not. However, at least from 1990 onwards, putting forward ignorance as an argument for not paying compensation is out of the question. Hence, ignorance at best only exempts for the harm caused before 1990, which is likely to be the least serious.

Hence, the problems raised for compensation do not target compensation for present harm from present emissions, something which Miller (2009, 137) and Caney (2005, 135) at least appear to concede to.

#### IV. TWO ARGUMENTS FOR WEALTHY COUNTRIES COMMITTING THEMSELVES TO COMPENSATION

Intuitively, it seems more evident that causing harm for your own benefit is wrong and calls for compensation than to say the same about causing risk of harm. Nevertheless, developed countries appear to accept the latter, but not the former. We shall therefore attempt to show that this is ethically incoherent.

Consider the following principle:

(3) If it is an injustice to cause risk of a specific harm occurring in the future, then in a relevantly similar context it is also an injustice to cause this harm now.

We consider this principle to be obvious. This is so, even if the risk is that the harm may occur more times in the future than now. If we assume that it is an injustice to do something for your own benefit that harms another person, then, according to (2), you should normally compensate the victim for the injustice.

The Kyoto Protocol recognizes that “developed countries [...] are largely responsible for the current high levels of greenhouse gas emissions in the atmosphere, which are the result of more than 150 years of industrial activity” (UNFCCC 2011). We take this to imply that developed countries, because of their *current high levels of emissions* (as of 1997), accept that they have largely caused climate change, and therefore, if these current levels of emissions are not reduced, the developed countries will be the major cause of increased risk of harm in the future.

Next, we claim that being the major cause of increased risk of harm from climate change in the future is an injustice. This follows from principle (1), together with the discussion in the previous paragraph (and the qualification that the risk of harm from climate change counts as harm as we maintain in the previous section). Most people appear to accept this as the starting point of ethical consideration concerning climate

change. Applying principle (3), we then reach the obvious conclusion that it is an injustice to cause (similar) harm from climate change now.

Next comes the question of whether this is a “normal” case that requires compensation. The multi-causal nature of the harm does not appear to make the case abnormal. Moreover, the *Non-identity Problem* can largely be ignored because the effects of the acts which possibly affect the identity of people only materialize with some delay. Hence, the harm in question to be compensated is harm in the ordinary sense. Other things equal, this may imply a stronger and more convincing obligation to compensate than to mitigate, where the harm in question is not defined in the ordinary sense.

It appears that the wealthy countries accept the premises of liability for climate change, but seemingly fail to act accordingly in practice. At least many wealthy countries have, through previous climate agreements in the UNFCCC, accepted that climate change is causing damage, and that the wealthy countries bear the greatest share of the blame, and thereby the greatest responsibility for climate change, as they currently emit the largest per capita amount of greenhouse gases, and there exists a causal link between greenhouse gas emission and climate change. Still, the wealthy countries do not wish to discuss the issue of compensation for the damages and losses which climate change has caused.

One possible objection could be that, while the principle of *common but differentiated responsibility* applies to the cases of mitigation and adaptation, it does not necessarily apply to the case of compensation. After all, developing countries are themselves contributing to the harm through their own emissions and lack of adaptation. Another objection could be that developing countries are in a better position to deal with compensation within their own territories. However, in both cases, it is not clear why there should be a difference between the cases of mitigation/adaptation and compensation. So the objection appears arbitrary.

As compared with the present generation’s relation to future generations, where the injustice is clear, the relation between developed and developing countries within the present generation is more complex. It is not only developed countries which are emitting greenhouse gases, but also developing countries, and the harm not only falls on developing countries, but also on developed countries themselves. But as we pointed out earlier, at least to the extent that their *per capita* emissions exceed the *per capita level* of developing countries, the developed countries do unjust harm to developing countries. Moreover, when it comes to the injustice by causing increased risk of harm in the future, the contribution of developing countries is *not* considered to require action.

We now present another argument, which is not based directly on compensation, but rather on being in a position to accept an obligation. Consider a different principle:

(4) If there is moral reason to reduce the risk of some specific harm in the future, then in a relevantly similar context there is also moral reason to address this harm if it materializes now.

By “address” we mean rectifying the situation and restoring the victim, as far as possible, to the same level of welfare as before the harm occurred. We also believe this principle to be fairly obvious. The fact that a harm is serious seems to be a necessary condition for having reason to reduce the risk of it occurring. But if a harm is serious, there is certainly reason to address it when it occurs. It seems to be a defining characteristic of serious harm that it induces an obligation to do something about it. It is hard to understand how potential harm can be serious if it can simply be ignored.<sup>8</sup>

Consider an example. If there is reason to reduce the risk of harm from car accidents in the future, then there is also reason to address harm from car accidents happening now. It would seem very strange to claim that there is strong reason to reduce the risk of harm from accidents on the roads, but at the same time claim that if a car accident happens now, there is no reason to do anything for the victim, or only reason to do a little. This is so, even if the risk in question over time in the long term may involve more accidents than are occurring this year.

As the example shows, the obligations apply to everyone in a relevant position. Each individual has responsibility for reducing the risk of harm from traffic. But a government also has responsibility for coordinating action through laws and other means, and for running agencies such as the traffic police, etc. The case is similar for actual harm: anyone who encounters a car accident is obliged to help, although there are also professionals in hospitals, ambulances, etc. Hence, the obligations are a matter of your position vis-à-vis the risk or the harm. Some might object that we may not be responsible for outcomes we do not ourselves bring about. But the argument only applies, *if* the reason to reduce risk is accepted.

How to address death or other situations that cannot really be rectified is of course a complicated problem which we cannot do justice to in the present context. Since we are primarily concerned with compensation in the context of climate change, we assume that in practice, most compensation will have to be of a financial nature. Hence, we refer to the principles used by courts and the insurance industry on how to compensate for harm in general, and death in particular. Thus, we imagine that compensation could be managed by an international system of insurance, paid by developed countries.

If we apply principle (4) on climate change, we get the following argument. From the fact that (many) developed countries have committed themselves to the Kyoto Protocol, we infer:

(5) There is moral reason for developed countries to reduce the risk of future harm from Climate Change.

With the help of principle (4), it then follows that:

(6) There is moral reason for developed countries to address the harms derived from Climate Change.

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<sup>8</sup>] Deserved harm, if there is such a thing, may be an exception. So we take “harm” to mean *undeserved harm*.

The developed countries are seemingly reluctant to accept this conclusion, while accepting the first premise and not giving any reason to reject the second (i.e. principle (4)).

Since (many) developed countries, at least in principle, have accepted a commitment to support adaptation, i.e. a sort of *ex ante* compensation for future harm, we believe two parallel arguments based on what follows from this commitment could be made.

## V. DISCUSSION

Climate change is a reality with serious consequences which tend to harm people in poor countries most. Mitigating climate change represents a cost, which takes resources away from the present generation. In this case, wealthy countries have accepted the commitment to bear the costs. This means that, within the goal of the overall reduction of emissions, economic growth is permitted in developing countries. When it comes to compensation for actual harm in poor countries, developed countries are reluctant to accept a similar commitment. There is no serious effort on their part to address the harms from climate change that threatens to prolong and aggravate severe poverty. We have presented two arguments intended to show that this difference in attitude is, from a moral point of view, incoherent.

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