Climate Debt: A Primer

A wealthy minority of the world's countries and corporations are the principal cause of climate change; its adverse effects fall first and foremost on the majority that is poor. This basic and undeniable truth forms the foundation of the global climate justice movement.

Climate change threatens the balance of life on Earth and with it human communities everywhere. Addressing climate change requires urgent actions by all peoples, rich and poor, and all countries, developed and developing.

But to be effective our response to climate change must also be fair. Poor countries and communities are unlikely to sit by while a wealthy minority continues to consume an excessive proportion of the Earth's limited environmental space. Nor are the likely to ignore the wealthy's historical responsibility for the causes and consequences of climate change. Nor should they.

Responsibilities of the rich

Atmospheric concentrations of greenhouse gases are higher today than anytime in millennia. Emitted since the industrial revolution, they have built up in the atmosphere, blanketing the Earth and causing considerable warming.[1] Responsibility for these emissions lies principally with the developed countries. With less than one quarter of the world's population they have grown wealthy while emitting more than two thirds of all historic GHG emissions into an atmosphere they share with all life on Earth.

Problems of the poor

The excessive emissions of the wealthy have destabilized the climate, harming the poor and threatening our future. Already, climate change is causing the oceans to rise and acidify; melting ice caps, glaciers and permafrost; damaging forests, coral reefs and other ecosystems; and intensifying fires, floods, droughts and other extreme weather events. It is increasing water stress, hindering the production of food, altering disease vectors and threatening the infrastructure and resources that are the life-blood of millions of people. Poor countries and communities that have done least to cause climate change suffer first and worst from its adverse effects.

The concept of climate debt

For their disproportionate contribution to the causes of climate change and its adverse effects, developed countries owe a two-fold climate debt. For over-using and substantially diminishing the Earth's capacity to absorb greenhouse gases – denying it to the developing countries that most need it in the course of their development – the developed countries have run up an "emissions debt" to developing countries. For the adverse effects of these excessive emissions – contributing to the escalating losses, damages and lost development opportunities facing developing countries – the developed countries have run up an "adaptation debt" to developing countries. The sum of these debts – emissions debt and adaptation debt – constitutes the "climate debt" of developed countries.

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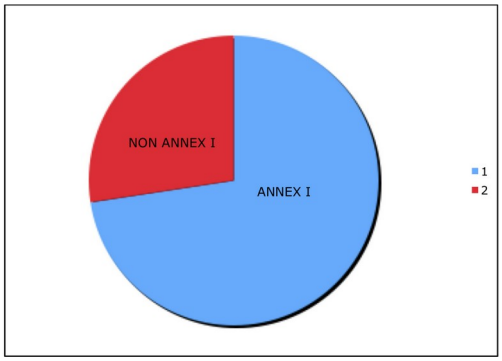
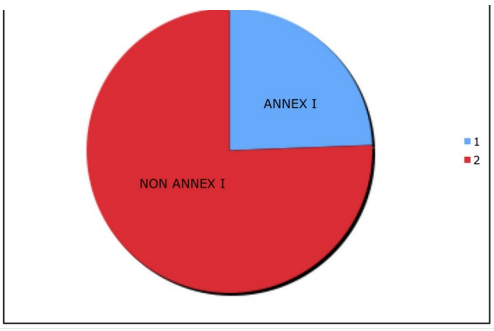
1 IPCC Fourth Assessment Report, Synthesis Report, page 72

Emissions debt

The extent of developed countries' emission debt reflects their excessive past, present and proposed future use of shared environmental space. With less than 20% of the population, developed countries have produced more than 70% of historical emissions since 1850 (Figure 1), far more than their fair share based on equal per-person emissions (Figure 2).

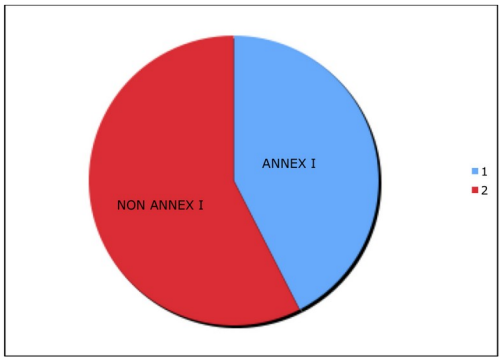
Figure 1: Actual historical emis **Figure 2: Equal individual shares (past)**

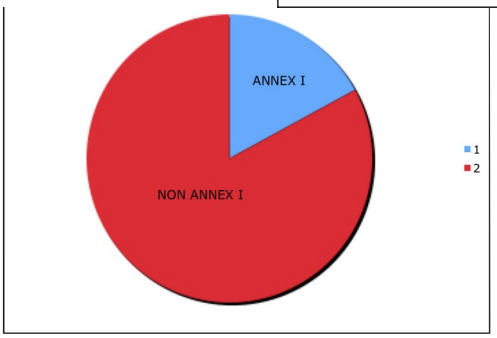




After diminishing the Earth's environmental space – denying it to poor countries and communities – the same rich countries now propose consuming a disproportionate share of the remaining space through until 2050 (Figure 3) when compared to an equal per-capita share (Figure 4). [2]

Figure 3: Proposed future emi **Figure 4: Equal individual shares (future)**





Developed countries representing a minority of people have appropriated the major part of a shared global resource for their own use – a resource that belongs to all and should be fairly shared with the majority of people. By basing their future "assigned amounts" on their past excessive emissions levels, they are effectively proposing to write-off the full amount of their historical emissions debt (figures 1 and 2), and to simultaneously appropriate trillions of dollars[3] of remaining atmospheric space which should rightfully be allocated to the South (figures 3 and 4).

Their proposals, if adopted, would lock developing countries into low and rapidly decreasing per-capita shares, denying them the environmental space needed to build the houses, schools, roads and infrastructure that developed world already has.[4] Their

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2 This analysis focuses on emissions from fossil fuel use and assumes Annex I countries reduce by around 30% by 2020 (as proposed by the EU) and 85% by 2050, and that global emissions reduce by around 80% by 2050.

3 Nicholas Stern, The Global Deal (2009) at page 154 (stating that the negotiation of emission rights "involve substantial financial allocations: at $40 per tonne CO2e a total world allocation of rights of, say, 30Gt (roughly the required flows in 2030) would be worth 1.2 trillion per annum").

4 Under proposals by the European Union for a proposed reduction by Annex I countries of 30% from 1990 levels by 2050 and a 15-30% deviation by non-Annex I countries from so-called "business as usual" emissions, the United States would continue polluting at around 14 tonnes per-person in 2020 and India would be locked in at around 3 tonnes per-person. Transfers of technology and financing may alleviate some part of the burden of such an

proposals would deepen the debt of developed countries rather than honoring it, leveraging past injustices into a future climate regime, and proposing a system in which the "polluter profits" and the "poor pays" for the excessive historical and current consumption of the rich countries.

Adaptation debt

As well as freeing up environmental space, developed countries must accept responsibility for the adverse effects of their historical and continuing high per-person emissions on poor communities and countries. Among the hardest hit are:

- *Farmers and farming communities*. In some countries rain-fed agriculture is expected to drop by up to 50% by 2020, leaving millions of people without food.
- *Indigenous and local communities*. Indigenous and local communities world-wide are harmed by changing ecosystems and threats to their traditional livelihoods.
- *Women*. 70% of the world's poor are women. Women provide half of the world's food. They are the hardest hit by climate change and must be at the heart of any solution.
- *Poor communities.* At particular risk are those concentrated in high-risk areas, such as coastal and river flood plains, or areas prone to extreme weather events.
- *People relying on scarce water resources.* Between 75 and 250 million of people are likely to face increased water stress by 2020 due to climate change.
- *Communities susceptible to health impacts.* The health of millions of people will likely be affected through increased malnutrition, increased disease burden and death and injury due to extreme weather events.

These impacts are caused by the historical emissions that have led to current levels of warming, and that will lead to considerable future "committed" warming as the Earth's oceans and other systems warm. The very existence of some countries is threatened while others face serious impediments to their efforts to lift billions of people out of poverty and to promote development.

There is no way to predict the full extent of future adverse impacts and costs – emission pathways are uncertain and the climate system is too complex. However, any just approach to climate change must ensure that those who have benefited in the course of causing climate change compensate the victims of climate change. They should cover the full costs of avoiding adverse impacts and provide compensation for those harms that cannot be avoided. This constitutes their adaptation debt to developing countries and communities.

Climate debt as a component of ecological debt

Climate debt is a component of a larger ecological debt, reflecting the excessive pollution and over-use by the wealthy of the goods and services provided by nature (see figure 5). As in the case of climate change, over-consumption of food, water, minerals, forests, fisheries and other goods by a minority is contributing to excessive use of limited resources. The United States' ecological footprint per person (measured as the productive land and sea required to provide resources and to absorb wastes) is more than four times the globally sustainable level, more than four times China's and more than nine times India's.[5]

Globally, our ecological footprint exceeds the Earth's capacity to regenerate by about 30%. If present trends continue, by mid-2030s we will require the equivalent of two

unjust allocation of environmental space by improving efficiency; but the burden of demonstrating this is possible should remain with the developed countries.

[5] WWF Living Planet Report (2008) at page 14 onwards

planets. Of this, our carbon footprint forms a large and growing part. As a consequence, any effort to advance the cause of climate justice must be rooted in a broader effort to promote ecological and social justice between rich and poor, developed and developing countries.

Fig. 23: **ECOLOGICAL FOOTPRINT BY COMPONENT,** 1961-2005

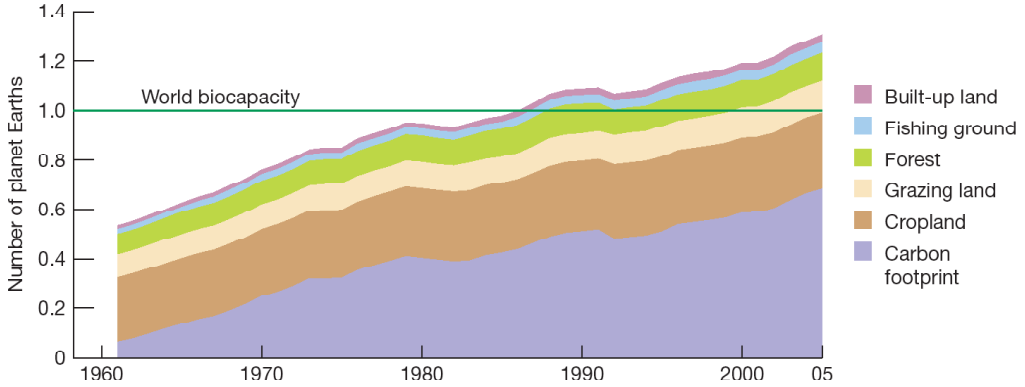

Figure 5
(Source: WWF Living Planet Report)

Repaying climate debt

Developed countries must take responsibility for repaying the full measure of their climate debt. Doing so is not merely right; it also provides the basis of an effective climate solution. A fair and effective climate solution requires at a minimum that:

- *Developed countries repay the full measure of their adaptation debt* to the developing countries and communities who did little to cause climate change and are its first victims. They must provide financing and technology to ensure full compensation for losses suffered, and the means to avoid or minimize future impacts where possible. They should commit to fully repay their adaptation debt to developing countries, commencing immediately.
- *Developed countries must repay the full measure of their emission debt* to developing countries and communities. Reflecting their debt, their assigned amounts of atmospheric space in any future year should reflect this (and thus be negative).[6] To avoid deepening their debt, developed countries must seek to become carbon neutral (and ultimately carbon positive). There will be no sustainable climate solution if developed countries seek to continue polluting at 70% or more of their 1990 levels all the way through until 2020 (consistent with 30% cuts). They must rather take a lead in cutting emissions through deep domestic reductions, and by accepting assigned amounts that reflect the full extent of their historical emissions debt.
- *Developed countries must provide the financing and technology* required by developing countries to live under the twin constraints of a more hostile climate and restricted atmospheric space. They must honor their obligation to provide the full incremental costs of emission reductions undertaken in developing countries, so that these countries can play their part in curbing climate change, while still meeting the needs and aspirations of their people.[7]

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[6] Nicholas Stern, The Global Deal (2009) at page 154 (stating "if the allocation of rights to emit in any given year took greater account both of history and of equity in stocks rather than in flows, then rich countries would have rights to emit which were lower than 2 tonnes per capita (possibly even negative)".

[7] This note was prepared by Matthew Stilwell (stilwell@me.com). The views expressed are the author's and do not necessarily reflect those of any institution with which he is affiliated.