C5 | CLIMATE CRISIS

A great deal of fog has come to surround discussions on climate change, some of it created deliberately to cast doubt on the reality or origins of the man-made crisis or to divert public attention away from the crux of the problematic and potential solutions. This chapter presents an overview of the core issues pertaining to the climate crisis and its resolution. The chapter deals with the current status of the crisis, the main problematic in this scenario, the state of play in global negotiations and the broad prognosis given present and foreseeable trajectories of greenhouse gas emissions.

Unambiguous Evidence

Scientific understanding of climate change has improved enormously in recent years. While the IPCC's (Intergovernmental Panel on Climate Change) Fourth Assessment Report (IPCC 2007a) did not contain any unexpected revelations, it marked a sharp departure from its predecessor IPCC Reports in three important ways.

Firstly, IPCC/AR4 put an end to the constant debate with sceptics over whether or not climate change is attributable to anthropogenic (man-made) emissions of greenhouse gases or GHGs. The Report revised IPCC's assessment of human-activity-induced climate change from just 'likely' or having 68 per cent probability in the Third Assessment Report (IPCC 2001) to 'very likely' with over 90 per cent probability, and declared that 'warming of the climate system is [now] unequivocal' (IPCC 2007a: 3).

Secondly, IPCC/AR4 pronounced that atmospheric greenhouse gas (GHG) concentrations, then at around 425 ppmv (parts per million by volume), were extremely close to a 'tipping point' beyond which changes in climate could become irreversible. The Report held, however, that even at this late stage, it was still possible to pull back to a stabilisation level of around 450 ppmv provided concerted and decisive steps were taken very soon (IPCC 2007b: 14–18). By concluding that the world was confronting not just climate change, but an impending climate *crisis* calling for drastic and virtually immediate action, IPCC/AR4 decisively changed the tenor and urgency of global climate negotiations.

Finally, IPCC/AR4 made specific recommendations as regards mitigation trajectories required to prevent runaway climate change. The Report stated that global GHG emissions should peak and start declining by 2015, and reduce by 50 per cent by 2050, which, in turn, would require Annex-I developed

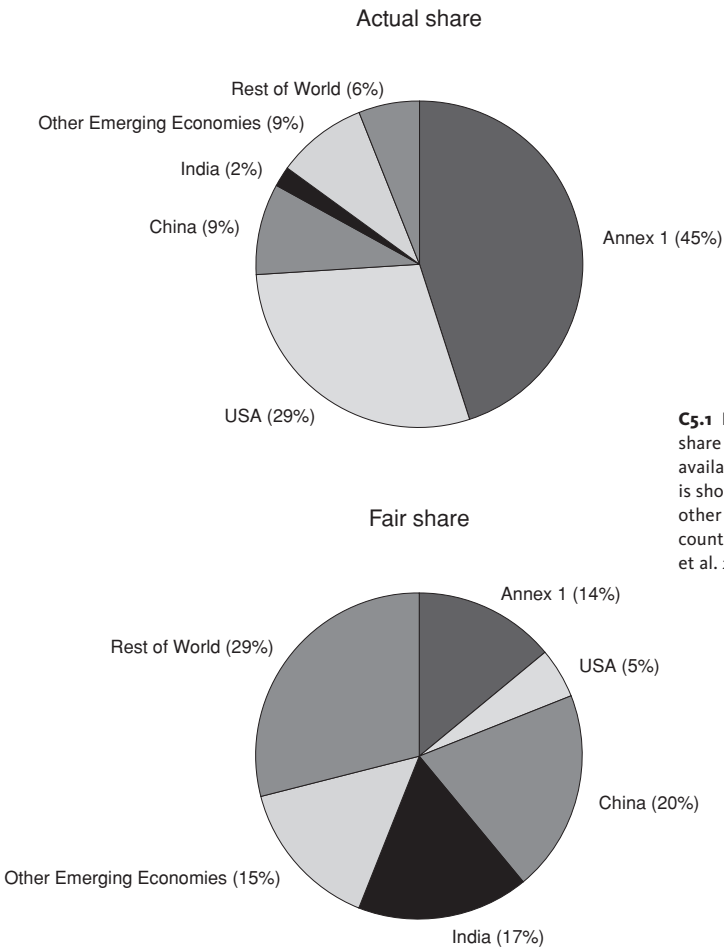
31 Dry and barren landscape (Evgeni Dinev/FreeDigitalPhotos.net)

countries to reduce their emissions by around 40 per cent by 2020 and 90–95 per cent by 2050 (ibid.: 38–9, 90ff.). So the science clearly demanded, for the second commitment period of the Kyoto Protocol currently under negotiation, a steep upward revision of the emission reduction targets set for the first commitment period – that is, around 5.6 per cent reduction by developed countries from 1990 levels.

Political economy of atmospheric GHGs – the 'carbon budget' approach

It is clear today that cumulative emissions are a better indicator for limiting temperature rise than emissions trajectories or stabilisation pathways (Matthews et al. 2009; Allen et al. 2009; Meinshausen et al. 2009). This means that we need to look at stocks of GHG gases and not just flows. This is the carbon budget approach – the world has a definite carbon budget within which it has to live if it has to limit global temperature rise. It specifies more clearly what the world as a whole needs to do to limit the global average temperature rise to below 2°C. The world has already emitted 332 GtC (giga tons of carbon) between 1850 and 2009. Of these emissions, 74 per cent have been emitted by only 19 per cent of the global population residing in the developed countries (Annex-I countries). If the world wants to limit temperature increase to under 2°C with at least a 50 per cent probability, then the budget for the period 2010–50 is a further 300 GtC.

We present here (Chart C5.1) one of the results of an exhaustive modelling exercise (Kanitkar et al. 2010) that arrives at a global average budget based on



C5.1 Fair and actual share of carbon budget available. *Note*: The US is shown separately from other developed (Annex-I) countries (*source*: Kanitkar et al. 2010)

population, which projects what a 'fair share' of the carbon 'space' available would look like.

As energy is a prerequisite for human development, an equal amount of *energy availability per capita* is the right of all human beings living in the developed as well as the developing world. The early developers have been able to access this energy from high-carbon, low-cost sources, whereas the late developers might have to use high-cost, low-carbon sources to access the same levels of energy owing to the constraints imposed by the carbon budget. Thus, equitable access to energy naturally leads to an argument about equitable access to carbon space. If population is used as a measure of each country's share of the total budget (Historical 332 GtC + Future 300 GtC), it appears that Annex-I countries have used their emissions and now actually owe carbon emissions to the world (a 'carbon debt'). This is the concept of 'carbon debt' – it is not a mythical figure but concretely measures the cost of carbon space grabbed by the rich countries over and above their share.

32 Electric Lines criss-cross over a remote village in India; access to energy is still a huge problem in developing countries (Amit Sengupta)

However, even if the Annex-I countries reduce emissions to zero in the next year (which, of course, they will not), the budget remaining for the rest of the world will still be less than what they are entitled to. While some countries such as China might still acquire their fair share of carbon space, others such as India and most of the Least Developed Countries (LDCs) will have to live within a share of carbon space much smaller than their fair share.

The carbon space available to the developing world (and consequently the cost that they will have to pay for later development) will be greatly reduced if the Annex-I countries do not undertake *deep and immediate cuts* in their emissions. While a number of countries use the concept of equitable space in global negotiations, they do very little to reduce the inequity that exists with respect to energy consumption internally. The budget approach is therefore not only a measure of global carbon debt but also a measure of the carbon debt owed by the rich to the poor in each country: the fair-share concept must be used not only externally but also internally.

Despite the grave warnings by the IPCC about the depth of the climate crisis, the developed nations of the global North led by the US cynically manipulated the international negotiations in such a way as to shift the onus for tackling the climate crisis on to the already overburdened shoulders of the developing countries of the global South while maintaining their own economic dominance, regardless of the impact of these actions, especially on vulnerable sections mainly in developing countries. In one sense, the global North has behaved in the climate negotiations much as it has done in trade

negotiations or other multilateral fora, advancing its own geopolitical and economic interests, and pursuing its hegemonic goals.

In the fossil-fuel-based capitalist mode of production, space in the global atmospheric commons for the 'parking' of GHG emissions is an important factor of production and, therefore, occupation of the atmospheric commons, analogous to control over industrial raw materials, is an integral part of efforts to maintain global capitalism and the dominance of the political-economic forces that control it.

Global attention has been fixed on controlling future *flow* of GHGs, not only because it is emission flows which can be controlled or regulated and are therefore the focus of the Kyoto Protocol and the global negotiations, but also because the global North has succeeded in framing the issue in this way, chiefly in order to divert attention away from the accumulated *stock* of GHGs and so as to evade responsibility for its historical responsibility for the present crisis. It is not the present *flow* of GHGs which is primarily responsible for climate change but the *stock* of GHGs, especially long-lasting carbon dioxide, which keeps accumulating in the atmosphere after all the processes of absorption, decay and so on are accounted for. It is for this reason that the chief metric for gauging the current status of the climate problem, and for its stabilisation as delineated above, is atmospheric concentration of GHGs.

It is well known that developed countries contribute around 46 per cent of global emissions today despite having less than 20 per cent of global population, and that the contribution of developing countries is projected to rise to around 75 per cent by 2050 since developed-country emissions have plateaued while those of developing countries are growing as they progress. But it is less appreciated that over 77 per cent of the stock, i.e. GHGs accumulated in the atmosphere, has been caused by the economic activities and lifestyles of the developed countries since the beginning of the industrial era, nominally taken to be c.1750 ACE (IPCC 2007a: 15–17). Because of this legacy of historical emissions, whatever the reductions in emissions of developed countries going forward, or limits on emissions growth from developing countries, developed nations will continue to be responsible for the greater part of the accumulated stock of GHGs in the atmosphere. The efforts of the US and its Northern allies in global negotiations have been directed at maintaining their dominant share of the atmospheric 'carbon space'.

Rigging the global negotiations

In the months leading up to the Copenhagen Climate Summit in 2009, the US (along with the EU and other developed countries) made a planned and systematic effort to kill the Kyoto Protocol and its fundamental basis. (The Kyoto Protocol enunciated the principle of 'common but differentiated responsibilities', with developed countries taking on binding emission cuts while developing nations undertook mitigation actions, including low-carbon

33 Climate change demonstration in Copenhagen, December, 2009 (© Ricardo Esplana Babor | Dreamstime.com)

development pathways supported by financial and technological assistance from developed nations.) The US now insisted that large developing countries, especially China and India, also take on binding absolute cuts in emissions regardless of their need for economic growth and poverty eradication, which would necessitate some increase in emissions in the short to medium term.

The Copenhagen Accord that was crudely parachuted into the Summit and hence was not endorsed by the Conference introduced a 'bottom-up' pledge-and-review system in place of the Kyoto Protocol. Regrettably, this new framework was later formally endorsed by COP16 (Conference of Parties) at Cancun in 2010 with a fig-leaf explanation that this was not being advocated as a substitute for Kyoto but as an interim measure till the next Summit. Several commentators have argued persuasively that this pledge-and-review framework appears likely to be given *de jure* status at COP17 in Durban (Martin 2010; Raghunandan 2010).

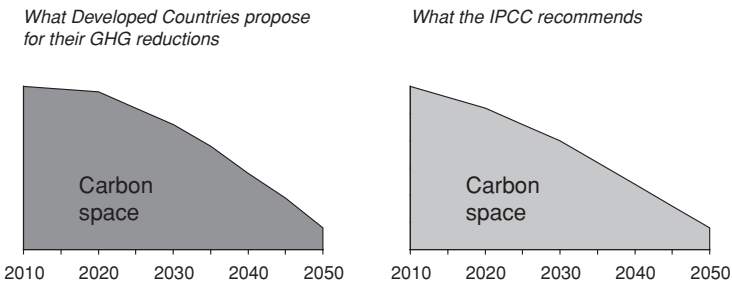
The pledges made by the US and other developed countries at Copenhagen fall far short of the 40 per cent reduction from 1990 levels as called for by the IPCC and are certainly not enough to keep global warming below 2°C. A leaked confidential draft document prepared by unnamed UNFCCC officials during the Copenhagen conference revealed that pledges made by the developed nations including the US amounted to only 11 to 18 per cent

emissions reduction from 1990 levels (UNFCCC Secretariat Confidential Draft Note 2009: 8). The effort was clearly to continue occupation of the atmospheric carbon space, disengage from as little as possible while compelling the developing countries to cede space in the global commons.

One of the big stories of the Copenhagen Summit, almost totally missed in commentaries owing to the collapse of the Summit and because it was virtually blanked out by Western media, was the significant initiative and the enormous emission reductions volunteered by developing countries. Under severe pressure from the US and its allies, China, India, South Africa, Brazil, Mexico and Indonesia made significant commitments leading up to the Summit to cut back on emissions. While these declarations may appear to have enabled these developing countries to seize the moral high ground, it became clear that they were duped by the developed nations. The US and its allies kept pushing developing countries to cut more, while themselves not only refusing to increase their emission reduction commitments but even in some cases diluting them further, as was done, for example, by the EU, Japan and Australia.

Numbers were also juggled to make it appear that it was large developing nations which were intransigent and were demanding the 'right to pollute', whereas, in actual fact, the advanced capitalist states were seeking to perpetuate their occupation of the global atmospheric commons and aggrandisement of carbon space so as to extend their economic dominance. The leaked UNFCCC Note drafted during Copenhagen estimated that the mitigation actions volunteered by developing countries amounted to 5.2 billion tonnes of GHGs, considerably more than the emissions cuts pledged by the developed countries, which amounted to a reduction of just 2.1–3.4 billion tonnes (ibid.: 3)! In other words, the US and its allies in the global North, by keeping their own emission cut pledges low and pressurising large developing countries to undertake mitigation actions not binding under the Kyoto Protocol, had succeeded in ensuring that the developing nations took on a larger share of the burden of reducing global emissions and thus ceding the carbon space required for development.

Developed countries have developed a strategy that includes accepting higher emission cut targets for later periods while keeping to lower targets in



C5.2 Control over the carbon budget by delaying deep cuts in emissions

the near term. The pathway to emission reductions is crucial, not just the end point. For instance, if one nation keeps to a high rate of emissions for most of the period but reduces its emissions by 80 per cent by 2050 abruptly in the last few years, while another nation gradually reduces its emissions every year till it reaches the same level in 2050, the former would have emitted far more GHGs than the latter. If plotted as a graph (Chart C5.2), the former would show a straight line abruptly dropping off almost vertically at 2050, while the latter would be a gradually downward-sloping curve reaching the end point, with the area under the former curve being clearly larger than the latter. The pledge, by the US, of a 3 per cent cut by 2020 rising to an 80 per cent cut by 2050 is precisely a way in which the US, by avoiding higher cuts in the early period while accepting the higher cuts much later, actually ensures it retains a greater share of the global carbon space.

An 'Emissions Gap Report' released by the United Nations Environment Programme on the eve of the Cancun Summit (United Nations Environment Programme 2010) estimates that, even if all the pledges made at Copenhagen and after by 85 developed and developing nations are fulfilled, global emissions would reach 53 $GtCO_2$ by 2020 compared with the desirable level of 44 Gt, leaving a large gap of 9 Gt and resulting in temperature rise of the order of 3–4°C.

Finally, the Cancun Agreements put the seal on the long-cherished neoliberal dream of commoditisation of the global atmospheric commons. The idea of developed countries transferring finances and technology to developing countries to assist the latter in coping with climate impacts caused by the former has been largely abandoned. The REDD (Reduction of Emissions from Deforestation and forest Degradation) scheme provides for funding to developing countries for preserving forests and permitting developed countries to offset costly emissions cuts against what would be cheaper carbon sinks. Fund transfers will henceforth include private investment, loans, multilateral funding and project assistance, including for offsets, but only if developing countries behave properly and ensure 'meaningful mitigation actions and transparency on implementation' (UNFCCC Cancun LCA 2010: para. 98). In other words, market mechanisms will henceforth have free rein and atmospheric carbon space will be bought and sold obviously at prices determined by the global North.

Conclusion

The climate crisis is the direct result of the globalised capitalist mode of production hitherto based on fossil fuels. The ongoing struggle in the global climate negotiations over emission trajectories clearly reflects the determination of the advanced capitalist countries led by the US to maintain their hegemony by continued occupation of the atmospheric carbon space and shifting much of the burden of emission reductions to developing countries to perpetuate

existing inequities. Thus, the global struggle around the climate negotiations is a struggle for 'climate justice'. This struggle has to be multidimensional, embracing political-mobilizational, scientific-technological and legal-regulatory aspects.

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