

OXFORD HANDBOOK OF CLIMATE CHANGE AND SOCIETY

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Expected publication: 2011

Chapter I.2.4: Discourses – the Global South

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(Version 0.2)

Introduction

The global South is not a monolith. And, as such, no single discourse can faithfully reflect its varied perspectives and interests. “The South,” for the purposes of the UNFCCC, has come to mean a diverse assemblage of 150 states, cast together into the indirectly created “non-Annex 1” category of Parties¹. At its core is the “Group of 77,” created in 1964 and since expanded into a caucus bloc for developing country engagement across the multilateral system. G77 countries account for 95% of non-Annex 1 population². It includes the Least Developed Countries (LDCs), as well as major emerging economies such as China and the Asian “Tigers”. It encompasses the Alliance of Small Island States (AOSIS), forest-rich countries such as Brazil, the Congo, and Indonesia, and the oil-rich OPEC nations. It spans the political spectrum from democracy to dictatorship.

Eclipsing its diversity, however, is the unifying fact that it is home to the overwhelming majority of the world’s poor, and is the locus of the world’s most profound development challenges. Even while the South witnesses an acceleration of economic growth in some regions, its average individual income is still only one-sixth that of the average Annex 1 citizen. More to the point, the South contains virtually the entire global population of people living in extreme poverty, and virtually its entire under-nourished population. It is home to every country with life-expectancy below 65 years, and to several countries with life-expectancy below 50 years. It is home to every country with under-5 mortality rate exceeding 2.5%, and several with rates *ten times* higher.

It is against this backdrop that the South, in spite of its diversity, has hung together as a coherent force within the UNFCCC. One cannot say that the positions and tactics of non-Annex 1 countries have been rigorously consistent, nor deny that vigorous debate sometimes rages within the G77. Still, its overarching strategy has remained consistent. From the Rio Earth Summit in 1992 where the UNFCCC was adopted, up to the ongoing negotiations in preparation for the 16th Conference of Parties in Cancun, the South has remained unified in its primary objective: to compel the industrialized countries to bear principal responsibility for addressing the climate crisis. If it can be said that the many Southern discourses share a core tenet, this would be it.

To be sure, this tenet is aggressively challenged by the industrialized countries. In fact, the UNFCCC negotiations have been contentious precisely because of this

North/South antagonism, much more so than because of any particular differences of opinion within each bloc. (Such as, for example, the comparatively mild disagreements among Annex 1 nations regarding the centrality of market mechanisms, or even the relative ambitiousness of their mitigation efforts or financial contributions. Or, among non-Annex 1 nations, disagreements about how funding for adaptation should be allocated, and the relative validity of the OPEC-favored notion of compensation for the impacts of “response measures.”)

As countries of the North are quick to point out, the South is, after all, the source of virtually all recent growth in emissions, and is already responsible for nearly two-thirds of annual global GHG emissions. The implication is indisputable: no climate regime can be effective if it does not bring about considerable abatement activity in the South. In the words of Northern government actors, (expressed with various levels of bluntness), this is taken to mean that the South cannot be exempted from “specific scheduled commitments to limit or reduce greenhouse gas emissions,” “meaningful participation,” “a symmetrical legally binding treaty,” “appropriate actions,” or, most generously, “contribut[ing] adequately according to their responsibilities and respective capabilities”³. To divine the actual meaning of these oblique phrases, one need only examine the actions of the Annex 1 countries.

The most recent and illuminating actions follow from COP-15 in Copenhagen in December 2009, which led Annex 1 countries to formally put forward quantitative mitigation pledges. In aggregate, these pledges amount to a reduction of between 9 - 16% below 1990 levels⁴, a level of effort remarkable only in its inadequacy⁵. The only way it can be interpreted to be consistent with the position of these same Annex 1 governments, that warming should be held below 2°C, is if a far larger overall mitigation effort is expected from the South.

To support the South in this efforts, the governments of the North have coupled their mitigation pledges with a “commitment ...to provide ... resources... approaching USD 30 billion for the period 2010-2012...” (UNFCCC, 2010) This sum, spread across both mitigation and adaptation needs, is not large, especially considering that the stated objective is to hold warming below 2°C, which, after all, would require a global mobilization that would force emissions to peak by roughly 2015. And considering further that this sum is the outcome not only of Copenhagen, but of the eighteen years of negotiations since Rio, the \$30 billion seems barely significant, especially with no guarantee that it will truly be “new and additional” finance, rather than existing aid streams relabeled or diverted (Stadelmann, Roberts, and Huq, 2010). Indeed, Tuvalu’s lead negotiator bitterly dismissed it as “thirty pieces of silver to sell our future.”

1. The Right to Development

The South does not, and cannot, advance a single coherent and consistently articulated discourse. Nevertheless, certain arguments and persistent memes do resonate deeply within the many Southern discourses, and thus arise in various forms in the rhetoric and strategies of the South. One of these, firmly imbedded in the Southern perspective, is the *right to development*.

In both the North and the South, it is understood that climate change impacts, if left unmitigated, are a challenge to fulfillment of the right to development. What is more keenly felt in the South, however, is the threat that climate change *action* poses to the right to development. A simple thought experiment illustrates the nature of that threat. Imagining that a global consensus emerged to keeping warming below 2°C, Figure 1 shows (in red) a scientifically realistic assessment of the sort of emission pathway that would be required. The efforts implied by this 2°C pathway are heroic indeed; global emissions are kept within a total budget of 1,000 billion tons of carbon dioxide (GtCO₂) for the 21st century, by forcing the annual emissions to peak before 2015 and decline to 80% below 1990 levels by 2050. This path is enormously ambitious, and could only be realized under circumstances of a true, global, emergency mobilization. Yet, even this

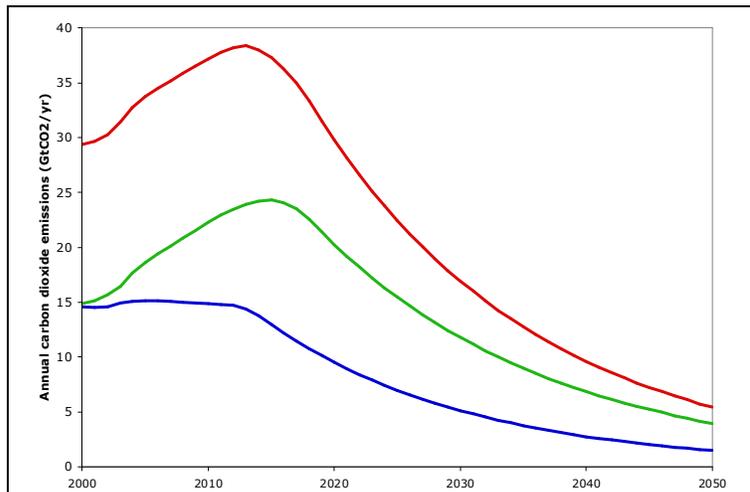


Figure 1: The South's Dilemma. The red line shows a global emission pathway consistent with a 2°C goal, in which global CO₂ emissions peak by 2015 and fall to 80% below 1990 levels in 2050. The blue line shows under an ambitious mitigation future for the North, in which emissions decline to 90% below 1990 levels by 2050. The green line shows, by straightforward subtraction, the emissions space that would remain for the South.

scale of effort would not mean we were “safe.” Society would still suffer major climate impacts and risk potentially catastrophic impacts. Not only would we be virtually certain to exceed 1.5°C, but would face a 15-30% chance⁶ of exceeding 2°C. Thus, this is what the Intergovernmental Panel on Climate Change would refer to as a pathway that was “likely”, but not “very likely” to keep warming below 2°C (IPCC, 2007).

If we next imagine that Annex 1 countries undertook bold efforts, starting immediately, and

were able to virtually eliminate their emissions by 2050, Figure 1 shows (in blue) the path they would follow and the portion of the small available global emissions budget they would consume. It shows Northern emissions declining at more than 5% annually, falling 40% below 1990 levels by 2020, and 90% by 2050. The emission path shown here is far more aggressive than even the most ambitious of current pledges from Annex 1, and in fact matches the demands made by many of the non-Annex 1 countries.

Having stipulated a global trajectory and an Annex 1 trajectory, simple subtraction reveals the carbon budget (shown in green) that would remain to support the South's development. Despite the apparent stringency of the Annex 1 trajectory, the atmospheric space remaining for developing countries would be alarmingly small. Developing country emissions would have to peak only a few years later than those in the North – still before 2020 – and then decline by more than 5% annually through

2050. And this would have to take place while most of the South's citizens were still struggling out of poverty and desperately seeking a meaningful improvement in their living standards.

It is this precise point – one that is not fully appreciated in the North – that animates much of the Southern discourse. For the only proven routes to development – to water and food security, improved health care and education, secure livelihoods – involve expanding access to energy services, and, consequently, a seemingly inevitable increase in fossil fuel use and thus carbon emissions. Indeed, in the absence of environmental constraints, emissions in the South would rise much more rapidly than the North's. This would be the route by which the South's citizens finally gained access to basic energy services, built the infrastructure that they have so long needed, and, eventually, moved toward some sort of parity with the citizens of the North. As a recent report from the United Nations Development Programme and the World Health Organization (UNDP/WHO, 2009) underscores once again, access to energy services is fundamental to the fulfillment of Millennium Development Goals.

None of this is to suggest that the Southern discourse around the term “development” is not fraught. The South, like the North, is dominated by proponents (including most states, and the elites with whom they are generally aligned) of the view that development is more or less equivalent to macroeconomic growth. They would be quite content if the South were to follow a development path that mirrored the North's. But alternative voices, often from indigenous and other grassroots movements, can of course also be heard, raising issues of distributive justice and critiquing the fixation on GDP growth to the exclusion of alternative dimensions of human welfare and empowerment. Some go further, asserting that just and sustainable development is inconsistent with capitalism (People's Agreement, 2010). But even across these widely varying conceptions of development, it is difficult to identify a vision in which lives improve significantly, especially for the impoverished majorities, that does not entail the dramatic expansion of access to energy services.

And so, the Southern discourses underscore the very real fear that the imperatives of climate stabilization will deprive the South of access to the cheap fossil energy sources that made development possible for the North. Both China and India have long counted on their vast coal reserves to fuel their long-awaited growth, but as they ponder a future with climate policies stringent enough to spur a rapid, low-carbon energy transition, they have analyses such as those of the International Energy Agency to consider. Reporting on his organization's analysis of carbon pricing policies that would be serious enough to spur an energy transition, Executive Director Nobuo Tanaka warned: “this is the price of carbon [necessary] to make this historic change possible, but, it means a very high price of energy for consumers. So, we are saying, ... [the] cheap energy age is simply over. And we have to accept that. And we have to live with these higher prices” (Tanaka, 2010).

Unfortunately, higher prices, for the poor majority in developing countries, may well mean the difference between access and no access. Which is exactly why, in the absence of a proven alternative route to development, it is extremely difficult for the South to imagine an equitable future in which its emissions decline as

precipitously as Figure 1 suggests. The South is deeply and justifiably concerned that an inequitable climate regime will force a choice between development and climate protection. It is for this reason that developing countries remain unambiguous in their insistence that, as important as it is to deal with climate change, a solution cannot come at the expense of their right to development.

That poverty – rather than climate change – is foremost in the minds of southern negotiators is of course unsurprising. The development crisis has shown itself to be not merely a challenge but an intractable crisis, badly in need of greater resources and political attention. To make matters worse, the impacts of climate change are now directly affecting the world's poor, not as some abstract future threat, but as a tangible force undermining food security, water security, and livelihoods. With even the minimal Millennium Development Goals being treated as second-order priorities, and little demonstrated interest in meeting them on the part of the North, the South has little reason to assume that the North would not willingly allow the exigencies of the climate crisis to eclipse the poverty crisis.

Thankfully, the conflict between climate protection and the right to development is not irreconcilable. After all, clean energy alternatives exist – but the point is that they still exist only in potential, as “alternatives” that have not been seriously pursued. The North has not led the world in developing them, and indeed continues to pursue measures that inhibit their development and that further entrench the conventional options (through, for example, subsidies to fossil fuel exploitation). As things stand, these alternative paths are not yet real, certainly not for the poor.

With respect to the negotiations and the politics surrounding them, the key point is that the right to sustainable development is not merely ethically justifiable. It is also, fundamentally, a non-negotiable foundation of greenhouse-age geopolitical realism. Unless Southern negotiators are offered a global climate deal that explicitly preserves such a right, they may quite justifiably conclude that their countries have more to lose than to gain from any truly earnest engagement with a global climate regime that, after all, must significantly curtail access to the energy sources and technologies that historically enabled those in the industrialized world to realize their right to development.

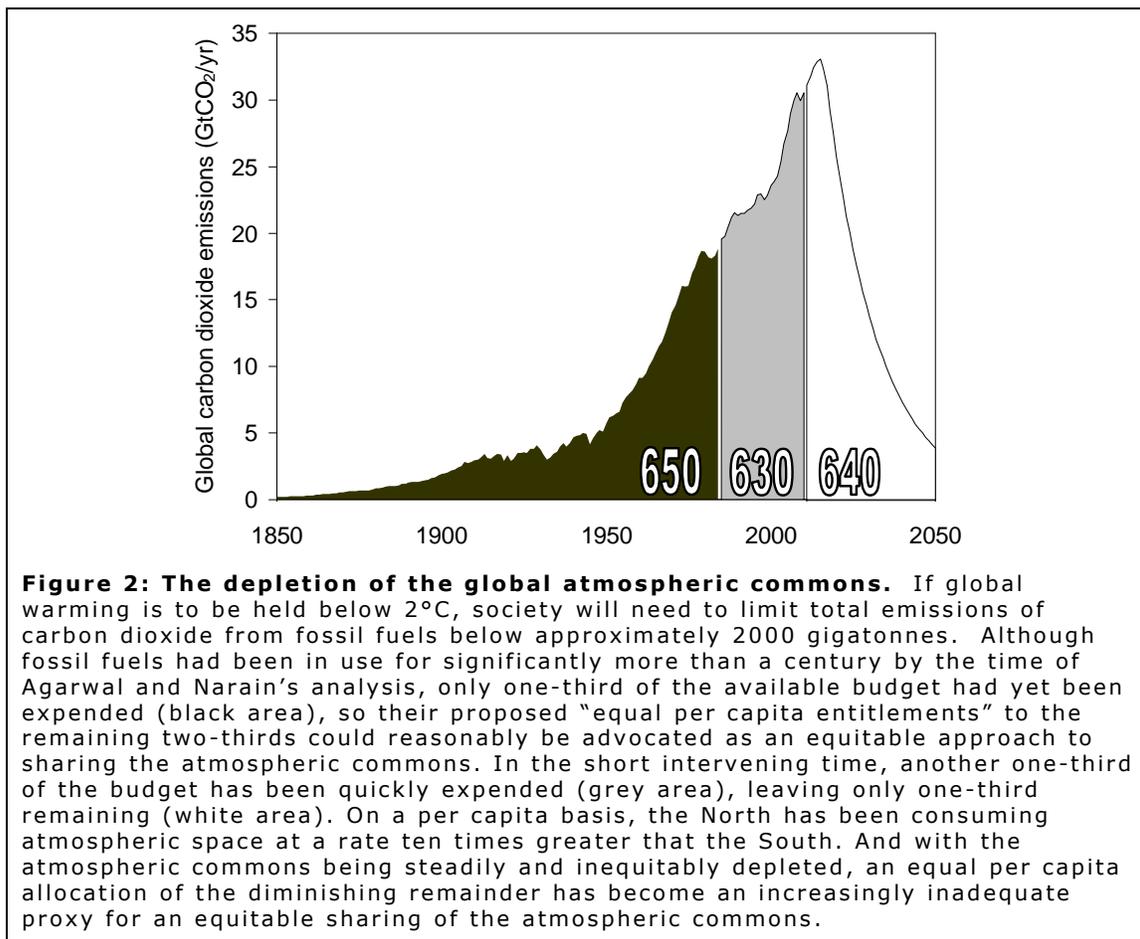
This, precisely, is the problem that lies at the core of much of the Southern discourse. A solution must be offered before any true global climate mobilization can begin.

II. Equality

A second persistent element of Southern discourses is, not surprisingly, *equality*. It has been framed in various ways, perhaps none more influential than the seminal piece by Anil Agarwal and Sunita Narain (1991), *Global Warming in an Unequal World*, which introduced many in the climate community to the argument for equal per capita emission rights. The global climate system is, after all, a public commons, as is the atmosphere into which our GHG emissions flow. As such, the privilege of using the finite atmospheric commons, they argued, must be shared equally among all people.

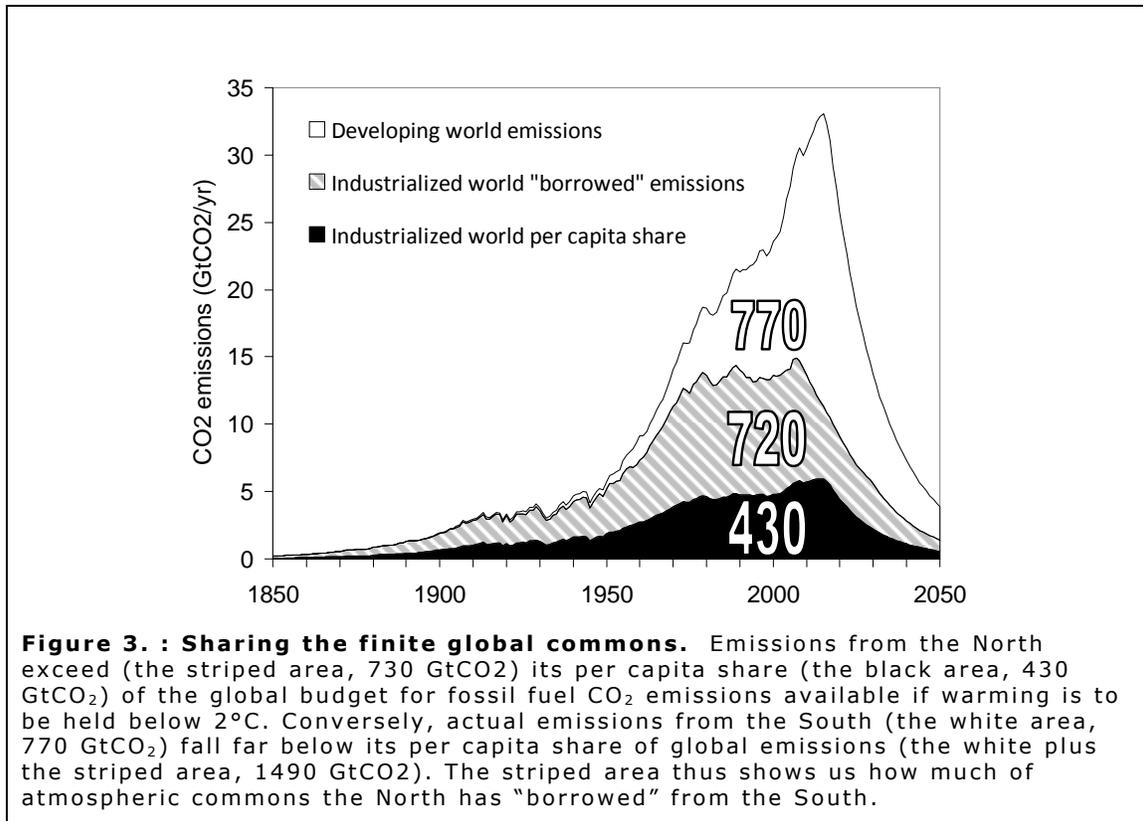
One can measure the atmospheric commons in terms of its total capacity to accept our carbon dioxide emissions, starting from the dawn of the industrial age (say 1850, when fossil fuel burning began in earnest) and ending in, say, the middle of the 21st century (by which time the fossil era must be essentially ended). Based on a path that maintains a reasonable chance of holding warming below 2°C (as in Figure 1), the total available global emissions budget, over this entire period, amounts to somewhat less than 2,000 gigatonnes of fossil fuel carbon dioxide (GtCO₂). When Agarwal and Narain proposed that emissions rights should be allocated henceforth on a per capita basis, only one-third of the atmospheric commons (~650 GtCO₂) had already been appropriated⁷. (In Figure 2, see the black area.) As there was still two-thirds remaining, the notion of equally sharing access to the remaining space could reasonably be advocated as a fair enough way to share the atmospheric commons.

Over the intervening years, the situation has markedly changed. The depletion of the atmospheric commons has not slowed, as Agarwal and Narain had optimistically



proposed, but rather has accelerated. Whereas it took more than 130 years to consume the first one-third of the atmospheric commons, the next one-third has taken barely twenty years. If these past two decades had been spent weaning our societies from fossil-fuels, it might not be a great problem that so little of the atmospheric commons

remains. But, in fact, we have not made substantive progress toward decarbonization; we remain as dependent on fossil fuels as twenty years ago. Moreover, the urgency of the climate problem has in the meantime become only more firmly supported by the scientific evidence. It was until recently thought by many that climate protection could be achieved by stabilizing temperatures at 2°C and atmospheric carbon dioxide concentrations in the 450 – 500 ppm range (e.g., Stern, 2006). Now, the need to keep warming below 1.5°C and concentrations below 350 ppm is increasingly cited by scientists (Hansen, 2008; Pachauri, 2009), UNFCCC Parties (AOSIS/LDCs, 2009), and civil society (350.org, World Council of Churches, 2009). The remaining atmospheric



commons is shrinking not only as we consume it, but also as we learn that our earlier estimates of its size were overly optimistic.

For these reasons, Agarwal and Narain’s notion of equality is no longer fair enough⁸. In its place has arisen the notion that equality means an equal sharing of the *entire* atmospheric commons, both the remaining portion (as Agarwal and Narain proposed) as well as the portion already consumed. Such an approach, of course, draws attention to the past and ongoing overconsumption of the industrialized nations. On a per capita basis, the North has consumed atmospheric space at a rate ten times greater than the South, accruing a large and still growing *carbon debt*.

Figure 3 illustrates the extent of this carbon debt⁹. The black area shows what the North would have emitted if it had kept within its equal per capita share of global emissions throughout the two hundred year period shown. What the North has actually emitted has been, of course, much greater than its per capita share, and is shown here

by the black area *plus* the striped area. Conversely, the actual emissions of the South (the white area) have been much less than its per capita share (the white area plus the striped area). The striped area thus shows us how much of atmospheric commons the North has “borrowed” from the South. It is significant – the *overconsumption* of the North is nearly equal to the entire *consumption* of the South. And this is true even though there is only one consumer in the North for every five in the South.

The purpose of drawing attention to the carbon debt is not to suggest that the North should now reverse course, implementing massive geoengineering schemes to extract all its excess carbon dioxide back from the atmosphere. Nor is it simply to demand reparations for a historical injustice, which would only further entrench North-South antagonisms. The purpose is, rather, to underscore the fact that the North has gained its wealth by way of depleting a common resource that is therefore no longer available for others who need it. It is to provide a further justification for, and perhaps a means of quantifying¹⁰, the North’s obligation to provide the technological and financial resources that the South needs in order to survive and develop within the limited atmospheric space that the North has left it. The North has greatly overexploited a shared resource, but the salient point is that by doing so it has gained the financial and technological wherewithal to enable – in the North and the South – the necessary global climate transition.

III. The North takes the lead

From the perspective of the South, a politically viable and equitable global climate regime means even more than an agreement that genuinely safeguards a right to development and preserves equal access to the atmospheric commons. Any agreement that would legally curtail its emissions still appears too big a risk to take. Nor is this reluctance hard to understand. To this point, industrial development has been almost entirely driven by fossil fuels, and why, without the North’s demonstrated willingness to help chart out, and indeed pave an alternative course, should the countries of the South sign away their rights to follow along this proven pathway?

The North, it must be said, has thus far wholly failed to demonstrate such a willingness. Quite the contrary, given Annex 1’s neglect of its Rio promise to return emissions to 1990 levels by 2000 (notwithstanding its formal compliance, unwittingly delivered by virtue of the Soviet economic collapse), and given the past decade of half-hearted efforts to meet Kyoto commitments (and, in the case of the United States, of entirely shunning them). Indeed, the South’s distrust of binding commitments is directly linked to the North’s inattention to its own emission constraints.

No less importantly, the North has also neglected its UNFCCC and Kyoto commitments to provide technological and financial support for mitigation and adaptation in the South. Here, at the risk of appearing pedantic, it is useful to review the promises formally made by developed countries under the UNFCCC. In particular, and unambiguously, the developed countries agreed (UNFCCC, Art. 4.3)¹¹ that they shall “provide such financial resources, including for the transfer of technology, needed by

the developing country Parties to meet the agreed full incremental costs of implementing measures” including, inter alia, taken to fulfill obligations to:

“Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change.” (UNFCCC, Art. 4.1(b))

and

“Promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol in all relevant sectors, including the energy, transport, industry, agriculture, forestry and waste management sectors;” (UNFCCC, Art. 4.1(c))

The UNFCCC underscores that the provision of necessary funding “shall take into account the need for adequacy and predictability in the flow of funds and the importance of appropriate burden sharing among the developed country Parties” (UNFCCC, Art. 4.3). Critically, it emphasizes that developing country implementation is contingent on the availability of developed country funding:

“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.” (UNFCCC, Art. 4.7)

Notwithstanding the fact that these same agreements were reiterated in the Kyoto Protocol (Article 11.2(b)), the amount of financial support for mitigation, adaptation, and technology transfer delivered over the past seventeen years has been wholly inadequate, and certainly insufficient to support any argument that the developed countries have made a good faith effort to fulfill their UNFCCC and Kyoto Protocol financing and technology-transfer commitments¹².

This all implies that progress in the next phase of the global climate regime hinges on the willingness of the Annex 1 countries, finally and definitively, to “take the lead in combating climate change and the adverse affects thereof,” as UNFCCC Article 3.1 legally obliges them. In particular, this is Annex 1’s last best chance to earnestly work toward building confidence in the possibility of a fair and adequate global climate transition. Through aggressive and sweeping mitigation initiatives at home, and through good-faith support to non-Annex 1 countries seeking financial and technological resources to mitigate and to adapt, it can still launch the transition to a post-carbon world.

Just as clearly, it will be extremely disruptive if the coming negotiations feature countries of the North trying to minimize their own responsibility by pointing fingers at the South, or attempting to make their own efforts contingent on the efforts of the South. Nor would it be helpful if countries of the North plead hardship amidst the current financial crisis, while pressuring much poorer nations to take on commitments. Annex 1 must simply reaffirm its acceptance of the “full incremental costs” of climate actions, globally, during the coming period. From the perspective of the South, only this is consistent with the UNFCCC, with Kyoto, and with Bali. In the words of Yvo de Boer, Executive Secretary of the UNFCCC for the tumultuous past five years, asking for action before the Annex 1 countries came up with funding plans and their own targets “was like jumping out of a plane and being assured that you are going to get a parachute on the way down” (de Boer, 2009)

This does not excuse the South from earnestly engaging. Indeed, solving the climate problem is only conceivable if the South is deeply involved. It will need to be developing and implementing adaptation strategies, and transitioning to carbon-free development paths. But the point is it cannot be expected to bear the costs, and that, for the meanwhile, its actions will be voluntary rather than binding. Legally-binding, principle-based southern commitments might ultimately be necessary, but the time for them has not yet come. This next period will be one in which the developing countries, though they must act, aggressively and in many ways, will do so under agreements that are softer and more implicit than many in the North might wish. Nor should this be seen as unfair and unreasonable. The South, though it insists on latitude unavailable to the industrialized countries, is not (as many believe) obstinately persisting in an outdated and legalistic interpretation of the UNFCCC and the Kyoto Protocol, in the hopes of indefinite free-riding. Rather, its wariness is fully understandable, confronted as it is by both a climate crisis and a development crisis, and skeptical that both poverty and carbon-based growth can be simultaneously left behind. And consider that the North has for the past seventeen years shown a comparable wariness, despite its much less compelling justification. It is for just this reason that it must now decisively take the lead.

References

- AGI (American Geological Institute) (1998). Global Climate Change Update. Government Affairs Program 29 December 1998. (<http://www.agiweb.org/legis105/climate.html>)
- AOSIS (2009). Aggregate Annex-I reductions for 2020, in: Compilation and Analysis presented by the Alliance of Small Island States to the Ad Hoc Working Group on Further Commitments for Annex 1 Parties under the Kyoto Protocol. 11 June 2009.
- AOSIS/LDCs (2009). Small Islands and Least Developed Countries Join Forces on Climate Change Press release, www.independentdiplomat.org/documents/joinforces
- Bode, Sven (2003). Equal Emissions per Capita over Time – A Proposal to Combine Responsibility and Equity of Rights. Discussion Paper 253, Hamburgisches Welt-Wirtschafts-Archiv (Hamburg Institute of International Economics), ISSN 1616-4814
- CDIAC (Carbon Dioxide Information Analysis Center), 2009. National CO₂ Emissions from Fossil-Fuel Burning, Cement Manufacture, and Gas Flaring: 1751-2006. T.A. Boden, G. Marland, and R.J. Andres, contributors. (Carbon Dioxide Information Analysis Center of the United States Department of Energy). <http://cdiac.ornl.gov/>
- De Boer, Yvo (2009). Quoted in “G8 makes scant progress to Copenhagen climate pact”, Reuters article by Alister Doyle, 9 July.
- European Commission, 2009. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Towards a comprehensive climate change agreement in Copenhagen, COM(2009) 39 final, 28 January 2009, Brussels.
- European Council, 2009. Council Conclusions on the further development of the EU position on a comprehensive post-2012 climate agreement (Contribution to the Spring European Council). 2928th Environment Council Meeting, 2 March 2009, Brussels.
- Global Commons Institute 2000, ‘GCI briefing: contraction and convergence’, available at www.gci.org.uk/briefings/ICE.pdf (originally published as Meyer, A. 2000, Engineering Sustainability 157(4): 189–92).
- Hansen, J., M. Sato, P. Kharecha, D. Beerling, R. Berner, V. Masson-Delmotte, M. Pagani, M. Raymo, D. L. Royerm and J. C. Zachos (2008). "Target Atmospheric CO₂: Where Should Humanity Aim?" The Open Atmospheric Science Journal 2: 217-231. www.columbia.edu/~jeh1/2008/TargetCO2_20080407.pdf
- IIASA (International Institute for Applied Systems Analysis), 2009. Analysis of the Proposals for GHG Reductions in 2020 Made by UNFCCC Annex I Parties, analysis and report by Fabian Wagner and Markus Amann. (IIASA, Laxenberg, Austria.)
- IPCC (2007). *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 996 pp. See in particular Box TS.1, p. 23.
- Kanitkar, T., T. Jayaraman, M. D’Souza, M. Sanwal, P. Purkayastha, R. Talwar, (2010). Meeting Equity in a Finite Carbon World. Background Paper for the Conference on ‘Global Carbon Budgets and Equity in Climate Change’ June 28-29, 2010. Tata Institute of Social Sciences, Mumbai, India.
- Mace, M. J. 2003. Adaptation Under the UN Framework Convention on Climate Change: The Legal Framework . Presented at 'Justice in Adaptation to Climate Change' an international seminar organized by the Tyndall Centre, FIELD, IIED and CSERGE at the Zuckerman Institute for Connective Environmental Research University of East Anglia 7-9 September, 2003.

- Mace, M. J. (2005), Funding for Adaptation to Climate Change: UNFCCC and GEF Developments since COP-7, *RECIEL* 14 (3).
- Meinshausen, M., N. Meinshausen, W. Hare, S. C. B. Raper, K. Frieler, R. Knutti, D. J. Frame and M. R. Allen (2009). "Greenhouse-gas emission targets for limiting global warming to 2°C." *Nature* **458**: 1158-1163. (<http://www.nature.com/nature/journal/v458/n7242/full/nature08017.html>).
- Pachauri, 2009. Interview with Rajendra Pachauri, Chairman of the IPCC, quoted in *Agence France-Presse* article by Marlowe Hood, "Top UN climate scientist backs ambitious CO2 cuts" August 25.
- PAN Jiahua, CHEN Ying, WANG Wenjun, LI Chenxi, 2008. Global Emissions under Carbon Budget Constraint on an Individual Basis for an Equitable and Sustainable Post-2012 International Climate Regime. Working Paper, Research Centre for Sustainable Development, Chinese Academy of Social Sciences, Beijing, China.
- People's Agreement, 2010. Statement from the World People's Conference on Climate Change and the Rights of Mother Earth April 22nd, Cochabamba, Bolivia.
- Porter, G., Bird, N., Kaur, N., and Peskett, L., 2008. "New Finance for Climate Change and the Environment", (Heinrich Böll Stiftung and WWH Macroeconomics Office: Washington).
- Rogelj, J., Nabel, J., Chen, C., Hare, W., Markmann, K., Meinshausen, M., Schaeffer, M., Macey, K., and Höhne, N. "Copenhagen Accord pledges are paltry", *Nature*, (464) 22 April.
- Singh, Manmohan, 2008. "Text of Dr Manmohan Singh's address at the Delhi Sustainable Development Summit", access at http://www.domain-b.com/economy/general/20080207_dr-manmohan.html
- Stadelmann, M., Roberts, J.T., and Huq, S., 2010 "Baseline for trust: defining 'new and additional' climate funding. IIED Briefing. (International Institute for Environment and Development, London) www.iied.org/pubs/display.php?o=17080IIED.
- Stern, Nicholas, 2007. *The Economics of Climate Change – the Stern Review*, (HM Treasury and Cambridge University Press: Cambridge, UK)
- Tanaka, Nabuo (2010). (International Energy Agency Executive Director), Interview at CERA Week, Houston, 11 March 2010. <http://www.cleanskies.com/videos/tanaka-the-impact-north-american-shale-gas>
- UNFCCC, 2006. Overview of Existing Programmes and Policies to Assist Adaptation Activities (Including an Overview of Existing Decisions Relating to Assistance for Adaptation). Background paper prepared for the UNFCCC Workshop on the Adaptation Fund, Edmonton, Alberta, Canada, 3 – 5 May 2006.
- UNFCCC Secretariat (2009). Compilation of information relating to possible quantified emission limitation and reduction objectives as submitted by Parties. 12 June 2009.
- UNFCCC (2010). *The Copenhagen Accord*, FCCC/CP/2009/11/Add.1 30 March 2010, Decision 2/CP.15
- UNDP and WHO (United Nations Development Program and World Health Organization) (2009). *The Energy Access Situation in Developing Countries*. New York: UNDP and WHO.
- UN-OHRLS, 2009. "Small Islands and Least Developed Countries Join Forces on Climate Change", press release http://www.unohrlls.org/en/newsroom/archives/?type=2&article_id=17
- Vidal, John (2010). Confidential document reveals Obama's hardline US climate talk strategy. *The Guardian*, 12 April 2010.
- World Council of Churches (WCC) (2009). "Statement on eco-justice and ecological debt", adopted 2 September 2009. <http://www.oikoumene.org/resources/documents/central-committee/geneva-2009/reports-and-documents/report-on-public-issues/statement-on-eco-justice-and-ecological-debt.html>

WRI (World Resources Institute), 2010. Comparability of Annex I Emission Reduction Pledges, Kelly Levin Rob Bradley WRI Working Paper. World Resources Institute, Washington DC. Available online at <http://www.wri.org>.

Yu, Vicente Paolo (2009). Have Annex I Parties Met Their Commitments Under the UNFCCC and its Kyoto Protocol? South Centre Research Paper #25. October. (South Centre: Geneva)

Endnotes

¹ It comprises, in other words, all Parties to the UNFCCC except the forty “Annex 1” countries: Australia, Belarus, Canada, Croatia, Iceland, Japan, Liechtenstein, Monaco, New Zealand, Norway, Russian Federation, Switzerland, Turkey, Ukraine, United States of America, and the member states of the European Union (excluding Cyprus).

² Twenty-three countries account for the remaining 5% of non-Annex 1 population: twelve former Soviet republics and eastern European states, six (of thirty-nine) AOSIS countries, two OECD countries (Mexico and South Korea), two European countries (Cyprus and San Marino), and Israel.

³ These are statements the US Senate’s Byrd-Hegel resolution (S. Res 98), the Clinton Administration (AGI, 1998), the Obama Administration (The Guardian, 2010), the European Commission (2009), and the European Council (2009), respectively.

⁴ Three independent analyses (UNFCCC Secretariat (2009), IIASA (2009), and AOSIS(2009)) and WRI (2010) [12-18%], have examined the Annex 1 countries’ pledges. These have found, respectively, the aggregate Annex 1 reduction for 2020 to be (X%, Y%, and Z%) relative to 1990 levels. [Update these to UNEP, WRI, CI, CA.](#)

⁵ The case clearly presented by Rogelj et al (2010).

⁶ For details, see Baer and Mastrandrea (2006) and Meinshausen (2009).

⁷ Figure 2 is compiled from data from the *Carbon Dioxide Information Analysis Center* (CDIAC, 2009) of the US Department of Energy, which compiles for all nations emissions of CO₂ from all fossil fuel combustion, as well as cement production and natural gas flaring, which together comprise the majority of greenhouse gas emissions. If CO₂ from land-use change and non-CO₂ gases are included, the budget is correspondingly larger.

⁸ Even less fair are the weaker variants such as “Contraction and Convergence” and the Indian Prime Minister’s proposal, both of which offer the developing world less than a per capita share of the remaining space. Contraction and Convergence combines grandfathering with per capita emission rights, with a gradual transition from the former to the latter over a specified number of decades (e.g., Global Commons Institute, 2000). The Indian Prime Minister expressed his proposal as follows: “At the last G-8 Summit at Heiligendamm I made a commitment on behalf of India on carbon emissions. India is prepared to commit that our per capita carbon emissions will never exceed the average per capita emissions of developed industrial countries.” (Singh, 2008)

⁹ Figure 3 show actual emissions up to the present, plus future emissions assuming the North and South each follows its path as in Figure 1, in order to hold warming below 2°C. The per capita shares shown in Figure 3 are based on the North and South share of global population in each year, which varies over the 200 year span shown.

¹⁰ Several analysts have used an equal per capita access to the full atmospheric space as a basic for quantifying obligations under a global climate regime: Bode (2003), Pan (2009), Kanitkar (2010).

¹¹ See Mace (2003) and (2005) and UNFCCC (2006) for a comprehensive treatment of adaptation funding commitments in particular. These apply specifically to the Annex II countries, a subset of Annex 1 that includes the wealthier (OECD) industrialized countries.

¹² “Despite the fact that the GEF was designated as the financial mechanism for the climate and biodiversity conventions, the funding provided by donor countries was never at the level required to produce significant progress in reversing the threats to climate stability and biodiversity conservation. Over the entire 18 years of its operation, total funding allocated to the GEF has provided \$7.4 billion in grants to support more than 1,950 projects.” (Porter et al., 2008) See also Yu (2009).

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