



# MOVING BEYOND CLIMATE CHANGE



StockPhoto/italianestro

BY MIKE HULME

## Marching Up the Hill ...

The rhetoric leading up to the Copenhagen Climate Summit last December (COP15) was deafening. Voices—some sombre, some shrill, some almost hysterical—told us that COP15 must deliver a deal “to save the planet” and “to protect civilisation as we know it.” These people characterized it as “the last chance we have to tackle climate change.”<sup>1</sup> Such an atmosphere was not conducive to calm, considered, and realistic negotiating. And it was a task made harder because in recent years, so many other issues have been added to the tangled knot of climate change politics: the loss of biodiversity, the gross inequity in patterns of development, degradation of tropical forests, trade restrictions, viola-

tion of the rights of indigenous peoples, intellectual property rights, and others. The list seemed to grow by the month. The world arrived at Copenhagen with a Rubik’s cube climate-change puzzle containing just too many dimensions to be solved.

Copenhagen was the culmination of 17 years of policy-making under the UN Framework Convention on Climate Change, of 12 years of prospecting about what was to come after the terminal “Kyoto year” of 2012, and of two years of navigation using the Bali Road Map. COP15 attracted, ostensibly, the largest number of world leaders ever to attend a summit meeting. And the participation of civil society reached a new high for international climate negotiations, with an estimated 45,000

participants, their numbers swollen through eager anticipation of the role to be played by a new American president.

Underlying this political moment—this meeting that was claimed by some to be “the most important in human history”—was a narrative of crisis. A climate crisis.<sup>2</sup> It was a narrative that drew its strength from various scientific assessments and reassessments of climate change, starting with the Intergovernmental Panel on Climate Change (IPCC) and including other statements from national scientific academies and expert groups.<sup>3</sup> This was the science, so it was claimed, which “demanded” this and “demanded” that from the world’s political leaders. Or, as President Obama remarked, this was the science that “dictates [that] even more needs to be done.”<sup>4</sup>

## ... and Marching Down Again

But Copenhagen did not turn out as planned. No climate-saving deal was reached, not even a political agreement between the parties to the UN Framework Convention, let alone something that was legally binding. An accord was drafted—the Copenhagen Accord<sup>5</sup>—to which nations could opt in if they so chose. Some nations did; some did not. The Accord offered a nod to science. It “recognized the scientific view that the increase in global temperature should be below 2°C.”<sup>6</sup> It also promised money—up to US\$100 billion annually by the year 2020 for mitigation and adaptation activities in developing countries.

What was perhaps most striking about the dynamics of Copenhagen, however, was the unavoidable evidence of the shifting centers of geo-political power. No longer was it the European Union or the Anglophone nations that carried the day, nor even the nations of the Organisation for Economic Cooperation and Development (OECD). It was China, India, Brazil, and South Africa that became the makers and breakers of deals.

Copenhagen has shown us the limits of what can be achieved on climate change through centralization and hyperbolic multi-lateralism. Climate change—least of all, the Rubik’s cube

version of climate change we have chosen to construct—will not be adequately defused through such top-down United Nations processes. Earth-system scientists may have shown us how the physical planetary system functions as a single entity, but we are a long way short of displaying even the minimum attributes necessary for effective earth system governance.<sup>7</sup>

## Refocusing Our Goals

The current efforts to defuse the risks of climate change are therefore leading us nowhere. We have been dazzled by the sciences of the Earth system and have framed the problem as one of “stabilizing global climate.” We have been misled by the successes of the Montreal Protocol and have sought the solution through a single unified global framework. We have locked ourselves into seeking an unachievable goal—climate stabilization—that is based on a scientific narrative that cannot bear the weight of expectation and that is to be delivered through the hubristic, centralized management of the planet and its inhabitants.

We must therefore now either redefine the goal or the delivery mechanism—or, even better, redefine both. Rather than be dictated to by this sci-

entific narrative of avoiding climate chaos (and let us remind ourselves it is we who determine our goals, not some reified essentialist science), we need to rearticulate our goals, thereby allowing us to reframe the problem of climate change and to redesign our strategies.

I therefore suggest that our ultimate goal is not to “stop climate change.” We have mistaken the means for the end. Our goal is surely to ensure that the basic human needs of the world’s growing population are adequately met; that we move toward a development paradigm where we are living within our technological means and not beyond them; and that our societies are adequately equipped to withstand the risks and dangers that come from a changing climate. Distinguishing whether those risks and dangers are natural or not is hardly the point.

## Redesigning Our Strategies

These should be the goals of an aspirational, morally aware, and survival-oriented species. Refocusing our goals in this way—moving beyond climate change to see what lies on the other side—has implications for how we design our policy frameworks and implement our policy measures.

What might an alternative strategic approach to meeting these goals look like in practice? It should be an approach that allows us to take a few small steps that offer demonstrable, quick payback. It should be an approach that is polycentric in structure and pluralist in instinct. And it should be an approach that prizes substantial investment in technology innovation.<sup>8</sup>

The first step is to fragment the Rubik’s cube. We need separate policy frameworks and interventions for short-lived and long-lived climate-forcing agents. The physical properties, sources, and policy levers of short-lived forcing agents—black soot, aerosols, methane, and tropospheric ozone—are quite different than are those for long-lived forcing agents—carbon dioxide, halocarbons, and nitrous oxide. Then





*Coal power station burning fossil fuels to produce electricity.*

we need to separate energy policy from climate policy. There is no obvious logic, for example, in connecting innovation in liquid fuel technologies with innovation in information and management systems that allow societies to manage climate risks. And third, we need to attend directly to the development demands from the world's bottom two billion. There is no essential reason why attending to the scandal of world poverty should be ransomed to reaching a global deal on designing a long-term, low-carbon energy revolution.

Below are six strategic policy initiatives that are not stitched together into one single impossible package—the progress of which is too easily hijacked by diversionary tactics such as arguing about whether or not the science behind a two-degree global temperature target—or indeed any global target—is sound.

### ***Eradicate Emissions of Black Carbon<sup>9</sup>***

Black carbon warms the atmosphere at regional and global scales. It is also a public health hazard; 1.8 million people die every year from exposure to black carbon through indoor fires. It is feasible to nearly eradicate emissions of black carbon through targeted and enforced regulation. The equivalent of about 25 Gigatons of carbon would thus

be removed from the atmosphere by 2050. The environmental payback here is relatively quick, with huge public health benefits.

### ***Work Toward an Integrated Forest Protocol<sup>10</sup>***

Tropical forests are a key asset for humanity's future, not merely because of their carbon store, but also because of their husbandry of biodiversity, their timber and nontimber products, and their wider livelihood functions for indigenous peoples. Rather than seeking to lock tropical forest management into an all-embracing climate convention, and thus get snarled up in the complexities of reducing industrial carbon emissions, forests should be managed through a separate protocol that recognizes the integrated value of these ecosystems. This needs to be a radically different version of the existing REDD mechanism, which has an exclusive focus on reducing emissions of carbon dioxide by limiting deforestation and forest degradation.

### ***Stimulate New Climate Risk Management Institutions***

All societies are maladjusted to climate to some degree. In other words, climate extremes and variability impose

costs on all societies (as well as generating benefits). It is therefore prudent to evolve technologies, institutions, and management practices that minimize the costs and damages wrought by climate, and even more so, to build this adaptive capacity as climates—and consequential risks—change. The new initiative from the World Meteorological Organisation for a Global Framework for Climate Services is one example of new climate risk management strategies. This proposed new Global Framework seeks to strengthen, worldwide, the production, availability, delivery, and application of science-based climate prediction and associated services, so as to improve the capacity of societies to manage climate risk. Others include new micro-insurance initiatives, community-based adaptation, and improved early warning systems. These initiatives and the sharing of good adaptation practice make sense, whether or not climate risks are being changed by human activities or how quickly they are changing.

### ***Honor UN General Assembly Resolution 2626, 24 October 1970***

Without negotiating new treaties, without setting up new funds and new institutions to manage new funds, and without arguing over how much and from whom, there is a simple step that can be taken to improve the life chances for many. A simple honoring of the resolve made in 1970 by the OECD nations to commit 0.7 percent of Gross National Product to overseas development assistance would, at one stroke, release between \$200 and \$250 billion annually into meeting the development needs of the world's bottom two billion. It was a resolve renewed by the OECD nations at Monterrey in 2002: "... to make concrete efforts towards the target of 0.7 percent of gross national product as overseas development assistance to developing countries." Currently, not much more than half of this promised amount ends up as development assistance.

This investment in human welfare compares favorably with the US\$100 billion promised under the Copenhagen Accord for 2020. It is not about defusing the effects of climate change on future generations. This is an issue of social justice and humanitarian welfare, here and now. It would not solve climate change, nor would it eradicate poverty. But it would be a gesture a hundred times more important for the future of the world than the vague promises for 2020 that emerged from Copenhagen.

### Use the Montreal Protocol<sup>11</sup>

Between 5 and 10 percent of human forcing of the climate system originates from a very specific group of long-lived gases: for example, the ozone-depleting and non-ozone-depleting halocarbons and sulfur hexafluoride. These chemicals are used in the refrigeration and electrical and other industries. The subset of these gases which are climate-warming but non-ozone-depleting, could be controlled and then eliminated through a modification of the Montreal Protocol. This protocol has been successful for controlling ozone-depleting substances by tackling production rather than consumption, and it could do likewise for similar classes of industrial gases. There is no need to tie this initiative to the much more challenging task of reducing fossil carbon emissions.

### Long-Term Decarbonization

Emissions of carbon dioxide from energy production comprise no more than 50 percent of the human forcing of the climate system. These emissions are the hardest to reduce, and reductions bring benefits only in the longer term; yet we have been obsessed with this particular cause of climate change. Somewhat perversely, we have framed the problem of climate change and designed our policy frameworks to tackle the harder half of the problem and not the easier half! There are many good reasons for accelerating the decarbon-

izing of our energy supply, but to do so will require substantial technological innovation. Carbon-trading mechanisms will not be sufficient; the emergent carbon markets of Europe and the Clean Development Mechanism have been abject failures in constraining carbon emissions. What are needed here are commitments to innovation policy and large investments in new energy technologies. These can be achieved through unilateral, bilateral, or multilateral initiatives; it does not require a global treaty signed by 193 countries. One way to secure the needed investment is through a hypothecated carbon tax, initially low and rising gradually.<sup>12</sup> This is a long-term transition, which can afford to build slowly.

### Technologies of Humility

We will only clearly see how mesmerized we have become by the idea of anthropogenic climate change when the history of the period 1985 to 2010 is written. We will then see how the knowledge community pushed the claims of climate prediction, thereby lending credence to the idea that global climate stabilization was possible. We will see how, as the new world order of the 1990s emerged, we placed unwarranted faith in centralized global environmental governance through the United Nations. We will see how we fixated on tackling fossil carbon-forcing of climate to the detriment of tackling the easier parts of the problem. And we will hopefully then see the significance of the Copenhagen meeting in December 2009, a meeting after which we began to recast the problem of climate change and to redesign our strategies to move beyond it.

The world has no meta-narrative—whether offered by science, ideology, or religion—that can provide a universally accepted foundation upon which a centralized global governance regime can be built. The claims that Earth system science might provide such a

foundation have weakened rather than strengthened. The IPCC has discovered the limit of its influence. We are beginning to recognize climate change for the wicked problem that it is, and we will now embark on a more diverse, less authoritarian search for clumsy solutions.<sup>13</sup>

In going beyond climate change—lowering our ambitions and seeking small steps in a polycentric world of pluralist views and preferences—we paradoxically increase the likelihood that we can deliver on at least some of our aspirations for a better world. It is not more certain scientific predictions that we need, nor a charismatic leader to arise from “the east,” nor grand dreams of creating a global thermostat in the sky above. It is what Sheila Jasanoff, Professor of Science and Technology Studies at the John F. Kennedy School of Government at Harvard University, has referred to as the “technologies of humility”<sup>14</sup>—“disciplined methods to accommodate the partiality of scientific knowledge and to act under irredeemable uncertainty”[p.33]—that will offer us the best prospects for taming the risks of climate change.

---

**Mike Hulme** is professor of climate change in the School of Environmental Sciences at the University of East Anglia, Norwich, England. His most recent books are *Why We Disagree About Climate Change* (2009) and (edited with Henry Neufeldt) *How to Make Climate Change Work for Us* (2010), both with Cambridge University Press. See [www.mikehulme.org](http://www.mikehulme.org).

---

### NOTES

1. This phrase was used by UK Prime Minister Gordon Brown in a speech in London to the Major Economies Forum, 19 October 2009. His remarks were: “If we do not reach a deal this time, let us be in no doubt; once the damage from unchecked emissions growth is done, no retrospective global agreement, in some future period, can undo that choice. By then it will be irretrievably too late.” Available at <http://www.number10.gov.uk/Page21033>.

2. Numerous books about climate change are framed using the idea of “crisis”: D. Archer and S. Rahmstorf, *The Climate Crisis: An Introductory Guide to Climate Change* (Cambridge, UK: Cambridge University Press, 2010), 272 pp.; A. Gore, *Our Choice: A Plan to Solve the Climate Crisis* (London, UK: Bloomsbury Publishing, 2009), 416 pp.; M. Robinson, *America Debates Global Warming: Crisis or Myth?* (New York: Rosen Central, 2007), 64 pp.; R. Gelspan, *Boiling Point: How Politicians, Big Oil and Coal, Journalists and Activists*

*Have Fuelled the Climate Crisis—and What We Can Do to Avert Disaster* (New York: Basic Books, 2004), 254 pp.

3. For example see the G8+5 Academies' joint statement released in July 2009: "Climate Change and the Transformation of Energy Technologies for a Low Carbon Future"; and "The Copenhagen Diagnosis: Updating the World on the Latest Climate Science," a statement written by 26 leading scientific experts, November 2009. Available at [http://www.cccr.unsw.edu.au/Copenhagen/Copenhagen\\_Diagnosis\\_LOW.pdf](http://www.cccr.unsw.edu.au/Copenhagen/Copenhagen_Diagnosis_LOW.pdf).

4. This phrase is taken from comments made by President Obama at Copenhagen, 18 December 2009: "We know [to-be-set emission targets] will not be by themselves sufficient to get to where we need to be. Science dictates even more needs to be done ... Ultimately this issue is going to be dictated by the science. The science indicates we are going to have to take more aggressive steps in future." Available at <http://www.whitehouse.gov/the-press-office/remarks-president-during-press-availability-copenhagen>.

5. The full three-page Copenhagen Accord can be found here: <http://unfccc.int/resource/docs/2009/cop15/eng/107.pdf>.

6. UNFCCC (2009) Copenhagen Accord p.1

7. Frank Biermann wrote a paper in 2007, "'Earth system governance' a cross-cutting theme of global change research," *Global Environmental Change* 17, no. 3–4 (2007): 326–337, in which he called for earth system governance as a political program of action. He outlined some of the characteristics of such a governance system.

8. In shaping the argument of this section, I am indebted to the ideas of Scott Barratt, Ted Nordhaus, Elinor Orstom, Roger Pielke Jr., Gwyn Prins and Michael Shellenberger.

9. See A. P. Grieshop, C. C. O. Reynolds, M. Kandlikar, and H. Dowlatabadi "A Black-Carbon Mitigation Wedge," *Nature Geosciences* 2 (2010): 533–534, for a discussion of why and how this can be achieved.

10. See papers by O. Venter, W. F. Laurance, T. Iawamura, K. A. Wilson, R. A. Fuller, and H. P. Possingham "Harnessing Carbon Payments to Protect Biodiversity," *Science* 326 (2009): 1368; and U. M. Persson and C. Azar, "Preserving the World's Tropical Forests—a Price on Carbon May Not Do," *Environmental*

*Science & Technology* 44 (2010): 210–215, for discussion of moving beyond the REDD mechanism.

11. See the papers by G. J. M. Velders, S. O. Anderson, J. S. Daniel, D. W. Fahey, and M. McFarland, "The Importance of the Montreal Protocol in Protecting Climate," *Proceedings of the National Academy of Sciences* 104, no. 12 (2007): 4814–4819; and J. Cohen, A. Rau, and K. Bruning, "Bridging the Montreal–Kyoto Gap," *Science* 326 (2009): 940–941.

12. See I. Galiana and C. Green, "Let the Global Technology Race Begin," *Nature* 462 (2009): 570–571, for a discussion about why this is necessary and how it may be facilitated.

13. These are ideas that I explore in some detail in my book *Why We Disagree About Climate Change*, (Cambridge, UK: Cambridge University Press, 2009), 393 pp.

14. S. Jasanoff "Technologies of Humility," *Nature* 450 (2007): 33.



iStockPhoto/Aggressive Entertainment