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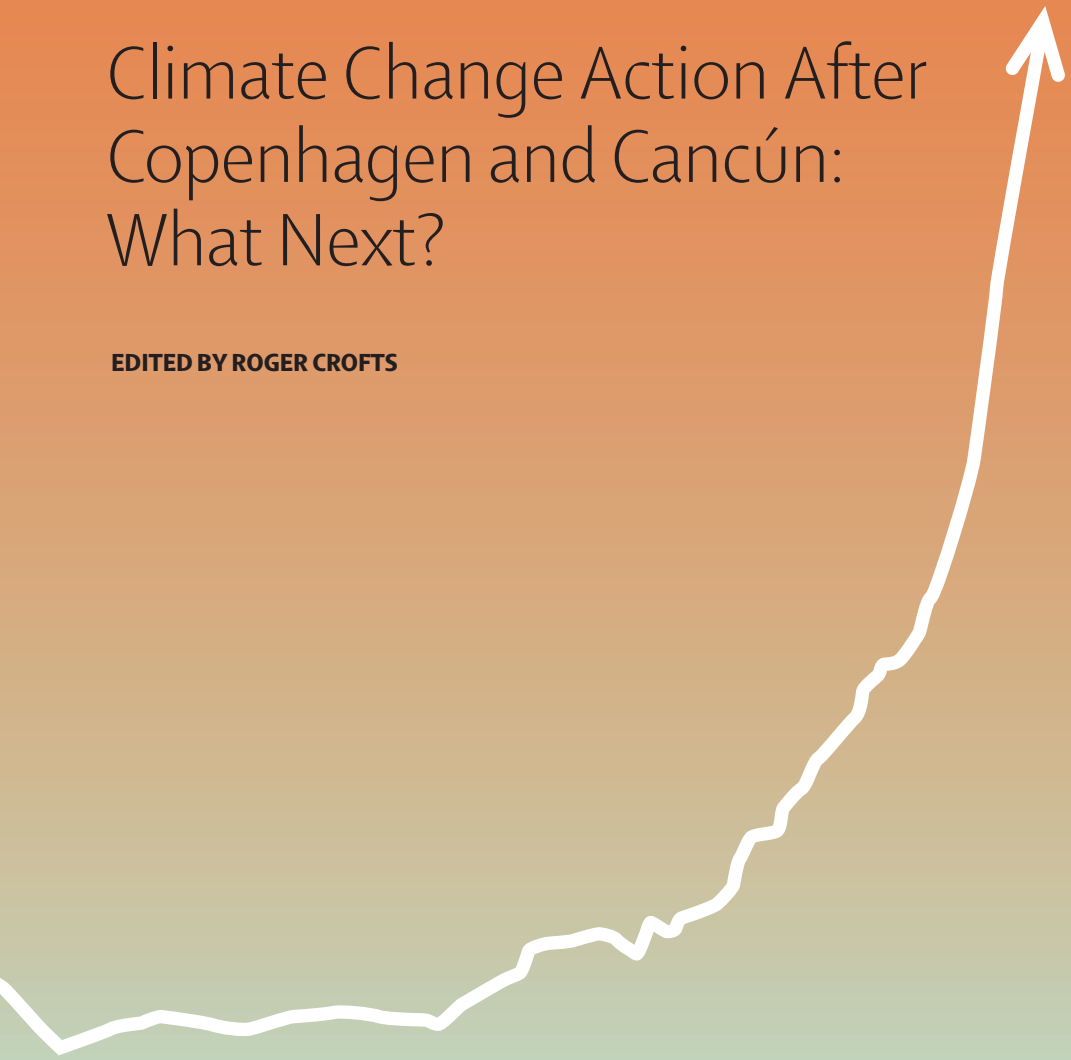
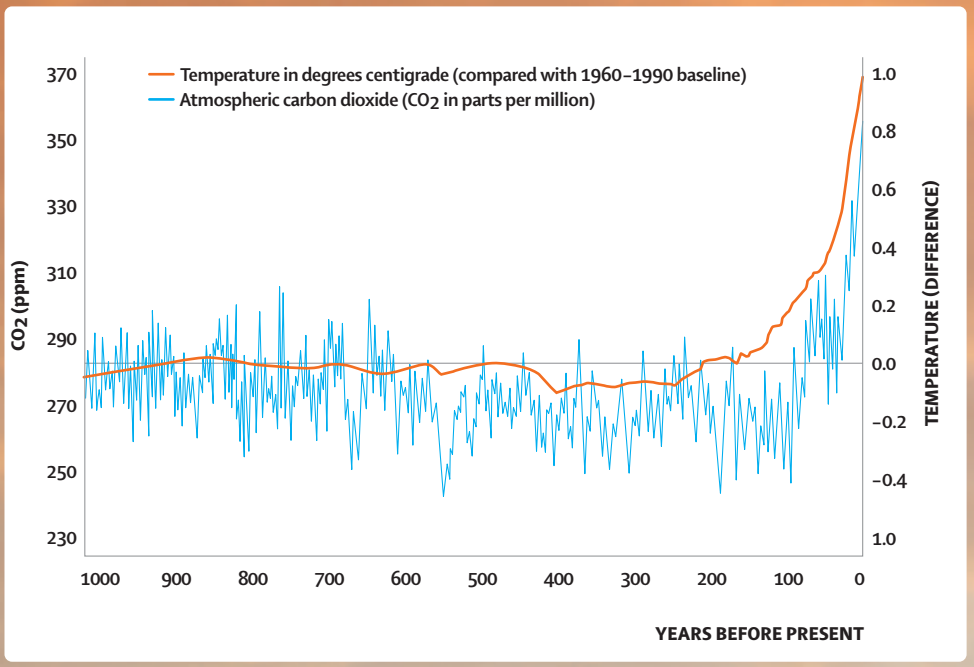
EDITED BY ROGER CROFTS





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The Sibthorp Trust

The IUCN UK – The Sibthorp Trust was formed in 1992 with a bequest from the late Mary Sibthorp. She was the Director of the David Davies Memorial Institute of International Studies. In this capacity, she stimulated and engaged in many debates on the key environmental issues of her time. The Trust was established by a group of key environmental experts in the UK, led by Sir Martin Holdgate. They determined that the Trust should be aligned to IUCN – the International Union for the Conservation of Nature: a union of government and non-government organisations around the world seeking to raise the profile of biodiversity and other environmental issues in the context of civil society. The Trust has consistently sought to stimulate informed debate on key issues from an entirely independent stand point. It neither seeks grants nor gives grants to others, but funds its activities from the investment of the bequest. The Trust comprises board members who are appointed for their independence of approach and their commitment to environmental debate within the context of the IUCN global programmes.

Acknowledgments

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Roger Crofts
Chairman
The Sibthorp Trust
December 2010

Contributors

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Fred Pearce has been environment consultant for New Scientist magazine for 21 years. He also writes regularly for The Guardian, broadcasts and publishes books on environmental science, including most recently The Climate Files: The battle for the truth about global warming.

Simon Pepper, OBE, LLD was director of WWF Scotland for 20 years to 2005. Now freelance, his work is mainly on the public engagement aspects of climate change. He is a board member of Scottish Natural Heritage and chairs the panel of the Scottish Government's Climate Challenge Fund. The views expressed in this article are his own.

Lord Martin Rees is Master of Trinity College, Cambridge and is currently President of the Royal Society, London. He was the BBC Reith Lecturer in 2010.

Mike Robinson established and is Chair of Stop Climate Chaos Scotland, a member of the UK Board of Stop Climate Chaos, a panel member of the Scottish Climate Challenge Fund, a member of the 2020 Business Leaders' Climate Delivery Group. He also co-ordinates a carbon reduction scheme in his local community.

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Introduction: Roger Crofts

The primary role of the Sibthorp Trust is to stimulate informed debate on key environmental issues. There can be no doubt that climate change is one such issue. Whether it is the most important or the only one which requires to be addressed is debateable as our world is so complex. There are many interactions within nature, and the way nature responds to human activities adds to this complexity. The International Year of Biodiversity 2010 has, for example, highlighted the continuing loss of species and habitats and that targets agreed internationally are not being met. A review of performance against the Millennium Development Goals shows progress lags well behind the targets. And, the global financial crisis has diverted attention from environmental issues and arguably reduced the resources available to address environmental concerns. Climate change is one of the factors driving change and creating difficulties in achieving environmental and social targets. Linkages between climate change and water supply for agriculture and for human consumption, for production of sufficient food and fibre to meet the increasing and changing needs of an expanding global population, disease prevention, sea level rise, and desertification add to this complexity. So, in seeking to stimulate further debate on climate change, we must bear in mind these interactions and feedbacks.

The debate about the extent to which climate change is purely part of a natural cycle or is due more to human activity is rather sterile and diverts attention from consideration of what can be done and what needs to be done. Scientists, economists, policy wonks, media folk and politicians all pontificate. The public become ever more confused and inaction can readily become the order of the day. What is abundantly clear from the evidence gathered and presented by the world's leading climate scientists is that changes in temperature are occurring at a faster rate and that this step change has a direct link to the increasing emission of greenhouse gases from the consumption of fossil fuels. Levels of carbon dioxide in the atmosphere are now higher, at 389 parts per million, than at any time since hominoids inhabited the Earth. The critical factor is that the world has become increasingly dependent on fossil fuels to supply its energy needs and that, despite the rapid development and use of technologies using renewable energy sources with fewer environmental consequences, the current trend in levels of use is still in an upward direction.

In the year since climate change became the great debating point in the media worldwide during the Conference of Parties of the Framework Convention on Climate Change (hereinafter FCCC CoP 15) in Copenhagen in December 2010, the issues have, if anything become more confused. So called scandals such as 'climate gate' and 'glacier gate', have sadly become the centre of attention, rather than the debate on the action needed in the light of the rigorous analyses by scientists and learned societies, the seminal analysis and advice of Lord Stern, and the strictures in two ground-breaking pieces of legislation: The Climate Change Act 2008 applying to the UK and the Climate Change (Scotland) Act 2009. These issues cannot be allowed to be lost because of the whim and fancy of the media with its relentless pursuit of scandal, headline and short term effect.

That is why the Sibthorp Trust has invited a range of experts to address the question **'Climate Change Action after Copenhagen: what next?'**

Six key questions and a series of detailed issues were put to our contributors as follows:

1. Was Framework Convention on Climate Change Conference of the Parties 15 a failure?

- Is the Copenhagen Accord worth the paper it is written on?
- How crucial is the lack of a deal to ensure that global temperature rise would be limited to 2°C?
- Are offers of substantial funding from the rich to the poorer nations helpful and deliverable?
- What are the stumbling blocks to progress: China, USA, traditional energy interests, developing countries, small islands states, and other interests?
- Will including forests through the Reducing Emissions from Deforestation and forest Degradation (REDD) mechanism be successful?

2. Are new inter and intra governmental mechanisms needed?

- Is the UN machinery too cumbersome?
- Will the proposed panel system work?
- Are other regional approaches preferred?
- Is a binding Accord possible?
- Can the EU take a greater leadership role?
- Are national mechanisms, such as the UK and Scottish Acts, more likely to be successful?

3. Why is the scientific consensus not getting through?

- Why is the scientific case not getting through to the media and to the public?
- Do the sceptics have a point or are they just making mischief?
- How can the case be made more effectively?
- Is the global warming data flawed, are the models inadequate, and is the data deficient in certain ways?
- Are there uncertainties, which give ammunition to the sceptics? For example, is the slowing down of warming in the last few years real or is the heat being stored in less easy to detect places? Are the models insufficiently sophisticated? Are we taking sufficient account of the role of the oceans?

4. Will technology development stumble now?

- Is the failure to reach a binding Accord likely to deter technological advance on greenhouse gas reducing technologies?
- What further stimuli are needed for technological development?

5. How should the public be mobilised to act rather than just opine?

6. What are the critical next steps?

We were not seeking a consensus amongst our contributors, nor definitive statements. Rather we sought a range of opinion from informed commentators to stimulate debate. We will publicise this material to coincide with the FCCC CoP 16 in Cancún Mexico in the hope that it will have some influence. We also hope that the contributions which follow will help readers to reflect on their position and stimulate them to join a debate. We intend, in the light of this document and its release to the media and through our web site www.sibthorp.org.uk, to arrange public debates in various parts of the UK over the coming months.

Following this introduction, each contribution is presented. A concluding section identifying the key arguments and the points made in addressing the questions posed and a Call for Action follows.

The 16th Conference of Parties has just completed its deliberations in Cancún, Mexico. The concluding chapter assesses progress against the 5 Commitments sought in the Call for Action.

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Natalya Sverjensky

Was FCCC CoP 15 a failure? A limited success? A laudable compromise? The outcome can be effectively interpreted in any of these ways. Regardless, I have no doubt that looking back we will all consider CoP 15 to be a critical milestone in the climate movement – a moment in time which illustrated the vast scope of the challenges we face in the coming decades in our global race to achieve sustainable development.

THE IMPACT OF FCCC CoP 15

CoP 15 showed us that the role of the UN is changing

The arguments against the UN process are familiar – it is bureaucratic, it is unwieldy and it is biased towards the interests of the developed world. Despite these well-vocalised criticisms, the demand for CoP 15 to deliver a binding global deal was high. The volume of campaigns leading up to Copenhagen was unprecedented in scope. From the united NGO campaign effort "tck tck tck" to individual calls to action from key business leaders, the pressure on policymakers at CoP 15 was truly extraordinary. CoP 15 was sold to the public as a 'make-or-break' event. And yet the negotiations failed to deliver what was asked for.

It is time to accept that a binding global deal based on quantitative targets and agreed by consensus between 192 nations is not going to happen quickly enough – and is not necessarily the best answer. Firstly, the accord ultimately reached at Copenhagen already represents significant – perhaps even sufficient – progress between the 30 countries responsible for approximately 90% of global emissions that meaningful action is needed. CoP 15 has given the international community a strong enough understanding of the need to tackle climate change to provide momentum to move on.

Secondly, although deep cuts in global carbon emissions are necessary, the fundamental aims of sustainable development are not confined to CO_2 reduction targets. This single-minded focus on targets has been referred to elsewhere as "carbon fundamentalism". Cutting carbon alone does not imply a better quality of life and a healthier environment. And, focusing on targets also enables false solutions, such as nuclear power and clean coal, to play a role in the national strategies that are directed towards achieving them.

Lastly, global targets are contingent upon the success of national achievements. There is already an exceptional range of regional, national and local initiatives underway to solve climate issues. In the short term, these initiatives are likely to have much greater impact than any global deal. These actions represent real changes, in some cases radical transformations, which are happening now and are incentivised by a range of factors that are certainly not limited to climate change.

From the large-scale investments China is already making in renewable technologies to the ambitious commitments of corporate sustainability leaders, such as Unilever, we can see transformative shifts already occurring around the world – with or without a global deal.

CoP 15 showed us that there is no single climate or energy debate

One of the major sticking points at CoP 15 was the wording of the final accord. This is because the real challenge of articulating where responsibilities lie on climate change, and what specific actions should be taken by which countries, is insurmountable. Every nation, city, community and household around the world faces different energy and environment issues today, and the debate over sustainable development lies in those individual scenarios.

Everyone has a stake in this debate, from consumers to religious institutions to big companies. This is especially true in the aftermath of the largest economic crisis since the Great Depression. The policies that legislators craft now to speed up economic recovery will be instrumental in determining how quickly we can move towards a sustainable future. And, they will, inevitably, be more important than any legally binding global deal which lacks depth, detail and relevance for local policymakers because of the extensive diplomatic compromises needed to sign it.

CoP 15 showed us that awareness varies radically around the world

For much of the developed world, climate change seems like a distant threat. But in many developing countries, the negative impacts of droughts, food shortages, forced migration and natural disasters are already being felt. This means that there are vastly different levels of awareness and understanding of the climate threat around the world.

One of the greatest legacies of CoP 15 will surely be the impassioned speeches of Mohamed Nasheed, President of the Maldives, testifying to the devastating effect rising sea levels are already having there. Comparing the immediacy of the Maldives needs to those of a relatively unaffected, wealthy country such as the USA made the divisions at CoP 15 loom larger than ever. Nasheed effectively summed up the implications of the paralysed UN FCCC process after the conference, declaring that "we cannot wait for the lowest common denominator where everyone agrees to doing almost nothing." Indeed, not only can we not afford to wait, we also cannot expect hundreds of global leaders beholden to different interests and populations with radically different needs to act in unison.

THE WAY FORWARD

We need to understand that the failure of CoP15 is a symptom

CoP 15 has been analysed, discussed and dissected over the past year. But, what has yet to be acknowledged is the reality that CoP 15's failure is a symptom of the systematic problems we face in the ways we run our governments, economies and societies. The many stumbling blocks to progress formally exposed by CoP 15 – sharp divisions of need between developed and developing nations, a shift in the global distribution of political power, obstructions from traditional energy interests – each represent larger failures in our current systems and will continue to impact on policy conversations around the world over the coming decades.

As the global distribution of power shifts, the debate over where responsibility lies for reducing carbon emissions is drawing new fault lines. Emerging economies see commitment to a climate deal as an unfair threat to growth, while developed economies believe their emerging counterparts are equally accountable.

The utility of the UN FCCC is also coming under scrutiny as many question what role intergovernmental organisations are equipped to play, given the complexity of the energy and environment challenges we face. The UN has always been at its best playing a convening role and enabling compromise between competing interests. But, more than a decade after Kyoto, what we need to realise today is that tackling climate change cannot be about compromise anymore – the timescales for transformation are too short. We need real action, and we need it now.

We need to understand that the climate 'debate' cannot last

Climate modelling is inherently flawed. Climate scientists make broad assumptions – as they do with any type of theoretical system. In many ways, their work is most effective when used to reveal long-term trends, the short-term impacts of which will necessarily vary around the world. This is what the sceptics do not understand. From the "climate gate" incident to attacks on the findings of the IPCC, questioning the validity of climate science, and the integrity of the processes behind it, is becoming a mainstay of reporting on climate change in the media.

This is a serious roadblock to progress. But the larger issue here is that the scientific community is only just beginning to understand how the earth functions as a system; a discussion in which climate modelling is only one component. The question of how to communicate this emergent understanding is therefore problematic. And the vast majority of scientists are not used to playing public roles as communicators, or answering the targeted questions of policymakers and journalists. The media needs to realise that climate change is not just like any other issue, such as the economy or national security. We should be subjecting available climate solutions to robust debate, not climate science. This shift in focus needs to happen as soon as possible. Otherwise, we risk permanently losing the support of the very people we need to activate global change: the general public.

We need to understand that everyone is an activist now

Consciously or not, the general public is slowly but steadily becoming involved in the climate movement. The challenges we face because of climate change represent a definitive end to environmentalism as we know it. It demands that we all think critically about the way we live on the planet and come to terms with the radical scale of the transformations needed to thrive in a changed climate.

In many ways, the UN FCCC process has obscured this reality by creating the illusion that the challenges of climate mitigation and adaptation lie in the hands of an elite group of policymakers. This could not be further from the truth. Starting now, everyone is an activist. Just as every shareholder is also a stakeholder, everyone from consumers to policymakers to investors will be involved in delivering the systematic changes required to mitigate and adapt to climate change.

We need to sell positive visions of what the world looks like if we succeed

The majority of communications on climate change today are overwhelmingly negative. Yes, the threats of a warming planet are devastating, from food shortages to droughts to rising sea levels engulfing entire populations. And yes, many countries around the world are already experiencing some of these negative impacts. But if we are facing a world where people need to understand that everyone is an activist, focusing on the threat alone is not going to work. In fact, we know it has not worked so far, otherwise we would not be here now.

As Futerra wrote in the ground-breaking publication *Sell the Sizzle*[1], the new climate message needs to inspire people with visions for what the world will look like if we succeed in mitigating and adapting to climate change. Leading with these positive visions captures the audiences' attention. It effectively buys you the right to contrast the potential for a better future with the only alternative: climate catastrophe.

CoP 15 showed us how cynical people are becoming about our ability to overcome the challenge of climate change. Even the people at the heart of the climate movement, from Greenpeace supporters to key opinion formers, increasingly doubt the scale of transformation required will occur. Reigniting belief and activating change will demand a radical shift in the way we communicate, starting now.

We need to understand that the solutions are here

One of the biggest consequences of the failure to agree a deal at CoP 15 has been a renewed focus on the possibilities of geo-engineering. While some degree of geo-engineering will probably have to play a role in the future – China is already implementing various geo-engineering techniques, and will likely continue to do so – it is extraordinarily misguided to assume these short-term, extreme technological fixes are the missing 'silver bullet' for tackling climate change.

The key issue with geo-engineering is that it functions as a 'band-aid' to reducing emissions: it avoids addressing the fundamental, systematic problems with the way we produce and consume in our societies and economies today. From air pollution to economic inequality to biodiversity loss, we are suffering the negative impacts of industrialisation. Relying on unproven and risky geo-engineering techniques to stabilise the atmosphere would represent a massive failure to understand the broader goals of sustainable development.

The renewed interest in geo-engineering is also a symptom of how deeply entrenched the messages from traditional energy interests have become in global policy and business conversations. Major oil companies, in particular, have sought to convince us that we need to scale up research and development to discover the technologies of the future that will save us. It is a highly effective short-term strategy, which moves focus away from what we are capable of changing now onto the potential for change in the very distant future. And, considering that spending on R&D by the world's big oil companies has remained essentially flat over the past two decades, this is a highly disingenuous message.

We need to recognise that many of the solutions needed to avert catastrophic climate change and create more sustainable societies are already available. From energy efficiency to renewable technologies to markets for ecosystem services, the bulk of our challenge lies in how to scale up these solutions and ensure their equitable distribution. These challenges are global, systematic and unprecedented. If we are going to achieve them, we need everyone to be involved. It is time to go beyond the closed doors of the UN FCCC negotiations.

[1] *Sell the Sizzle*, December 2009, Futerra Sustainability Communications.

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Fred Pearce

There is a problem with international negotiations. Failure breeds failure. If talks fail once, even on the most urgent issue, and if the sky does not then fall in, the politicians are likely to conclude that they can safely fail again. The prize looks less attractive, and the downsides of the compromises that might be needed more insistent.

So it was with the Doha round of talks on world trade earlier this century. Remember them? A deal was imperative and urgent, until the talks failed and everyone walked away. We still have no deal. Now it may be the same with climate negotiations following the high-profile failure to conclude a deal to curb emissions of warming gases in Copenhagen, December 2009.

Even NGOs like WWF, who are normally geared to proclaiming the urgency of reaching agreements on environmental issues, are back-pedalling on their expectations for the next meeting to find a successor to the Kyoto Protocol – in Cancún, Mexico, in December 2010. They are crossing their fingers and hoping instead for something at the following meeting, in South Africa in late 2011. That will be barely a year before the emissions targets set in the Kyoto deal, struck back in 1997, reach their end at the close of 2012. After 1 January 2013, the sky is the limit on emissions.

There is a difference between trade talks and climate talks, of course. Trade is a human activity; we make our own rules. The climate is a natural system that underpins the habitability of our planet. Nature makes the rules. And nature will not wait on the vicissitudes of diplomats. Every year we add greenhouse gases to the atmosphere, adding to the warming stresses we are putting on the climate system. Every year we may be pushing that system closer to some unknown tipping point.

But most diplomats and politicians do not get that. And there is a real fear now that, having failed in Copenhagen, they find it much easier to fail again.

And of course, politically at least, the heat is off. First, because a series of scandals has robbed the climate scientists of public trust. So, the scientific imperative does not look so imperative. And, second, because most of us can only cope with one big and largely incomprehensible fear for the future at a time. And the dangers of climate meltdown have been replaced at the forefront of our minds by fear of financial meltdown.

Some point out that the recession buys the world time. That the economic recession means that our annual emissions of gases like carbon dioxide to the atmosphere are not quite as high as expected. Indeed, Europe's annual emissions may have fallen by about 3 per cent. But that does not mean the problem has receded. The gases accumulate. Their concentration in the atmosphere – which is essentially the planet's thermostat – continues to rise. Current concentrations of carbon dioxide are at 389 parts per million, up from 384 when the financial crisis started. The crisis is not, in any meaningful sense, buying us time.

There is no denying that public confidence in climate science has taken a hit. Two immediate events caused this. First the release, in November 2009, by persons unknown, of more than a thousand emails sent and received over 14 years from the server of the Climatic Research Unit at the University of East Anglia. These, it has to be said, revealed some underhand and devious behaviour by some leading scientists involved in compiling and interpreting the record of temperature trends. The scientists were exposed as using their influence to shut down debate on issues ranging from the importance of urbanisation in recent warming in China to the reliability of tree ring data in determining how warm the world was a thousand years ago. But, despite the hysterical claims of some polemical climate sceptics, the emails did not reveal a grand conspiracy to mislead the world about global warming. Still less did they undermine the 200-year-old physics behind the argument that greenhouse gases, like carbon dioxide and methane, warm the atmosphere by trapping heat.

The second blow came from a series of revelations about misleading statements in the most recent assessments of the UN's Intergovernmental Panel on Climate Change (IPCC). Much the most egregious was a claim that the Himalayan glaciers would all be melted away by 2035 (a more likely true date would be 2350 as suggested by scientists writing in the late 1990s). This turned out to have been cut and pasted from a WWF report which, as I revealed myself when "breaking" the story in January 2010, was itself borrowed from a claim made by an Indian glaciologist in an article I wrote[2]. The IPCC's

mistake, soon dubbed "glacier gate", had gone unspotted for almost two years after the report came out. It was made much more damaging for the panel because its chairman, Rajendra Pachauri, publicly defended the claim for some weeks before retracting – in part, perhaps, because the Indian glaciologist concerned was by then employed at Pachauri's Indian research lab. At the time of writing (October 2010), he is hanging onto his job by a thread.

Subsequently, in a classic media hue and cry, a series of lesser IPCC "gaffs" were relentlessly and sometime misleadingly pursued by journalists. Most were in just one of the three IPCC assessments published in 2007, the one that covered the likely impacts of climate change. The UN subsequently asked a group of national academies of sciences, including Britain's Royal Society, to conduct an investigation. It reported in August 2010 that the IPCC impacts report did make a series of errors and showed a tendency to "emphasise the negative impacts of climate change", many of which were "not supported sufficiently in the literature, not put into perspective, or not expressed clearly"[3].

So, at the margins, there were errors. And in the political climate created by the emails fracas and the failure in Copenhagen, they echoed round the world in a manner that would have seemed impossible a couple of years before, when the IPCC picked up a Nobel Peace Prize.

Were dark forces behind this chain of events? I can attest personally, as the author of the article that revealed what had gone on, that "glacier gate" was not cooked up by climate sceptics. It remains possible the UEA emails were hacked by a corporation or government anxious to upset either the subsequent Copenhagen climate talks or deliberations on climate change legislation then going on in the US Congress. If the former, it was largely irrelevant; but if the latter, it did have an influence.

But my own judgment (it is no more than that) is that the UEA emails were probably released by a malcontent at the university, upset at the way its staff were handling freedom of information requests. The precise timing strongly suggests that.

It is, of course, true that many people opposed on ideological or commercial grounds to action to curb climate change fanned the flames resulting from these two fires, and turned them into a wider bonfire of scientific certainty. Some of those people were either deliberately misleading or ignorant. They claimed repeatedly that the slackening of the pace of warming seen over the past decade is somehow a contradiction of the whole idea of man-made warming – and that the emails show the climate scientists trying to cover this up. Both statements are emphatically not true.

The emails they cite were written before any hint of a slackening of warming. And any slackening in recent years simply reflects internal variability in the climate system. The trouble is that a much wider public has been anxious to accept such claims uncritically. In the aftermath, scientists have no choice but to try and rebuild trust, while learning some lessons about the need for greater openness in sharing their data and in their discussions about the remaining uncertainties in their story.

The climate sceptics, it should be said, have always had a point when they argued that science knows less about the detail of future climate change than the confident lines on IPCC graphs produced by their climate models often seem to suggest. Some sceptics have malign and cynical motives; some are simply genuinely sceptical of the science. But their point stands.

Where they have been wrong – and illogical – is to suggest that therefore we do not need to worry overmuch. Far from it. If the error bars are bigger than we think, then they stretch higher as well as lower – to encompass the possibility of much faster and more violent climate change as well as lesser change. How lucky do we feel? Sooner or later, the world is going to be confronted with the truth of the argument about man-made climate change. Nature, as I said, makes the rules on this.

Where does this leave the climate negotiations? In the short term, they are in a bad way. It is not inevitable that they will fail. But the hopes of a science-based agreement do seem to be faltering.

Many world leaders signed up in Copenhagen to the informal Copenhagen Accord. This political declaration indicated what they hoped to get from the final legally binding treaty, whenever it may be agreed. The Accord included the important principle that the world should not go beyond two degrees centigrade of global warming. That was a genuine step forward.

The trouble is that scientists really do not know what atmospheric concentration of greenhouse gases will deliver that promise. The best guess, as articulated before Copenhagen and largely accepted by scientists and policymakers alike, is that to keep below 2 degrees, emissions from industrialised countries must be cut by 25–40 per cent from 1990 levels by 2020[4]. And global emissions will need to fall by some 80 per cent or more by 2050. To some extent such numbers are shooting in the dark. But we do not have the luxury of waiting for certainty.

But at the mid-year 2010 UN climate talks in Bonn, as they cleared the air after the Copenhagen failure, I was very aware that the language of diplomacy was taking over from the language of science. Nobody was talking about how to share out the remaining entitlements to emissions that would be consistent with such targets. Nobody was talking the language of science. Instead the diplomats were talking exclusively about "building trust". They were back in their comfort zone of doing deals that may obey the laws of diplomacy, but ignored the laws of nature.

My guess is that, if a deal is finally done, it will be based not on what is needed but on what nations are prepared to bring to the table. As of now, they fall far short of what scientists suggest is necessary. The two-degree target is a receding aspiration even before it has been enshrined in a treaty.

In a sense, I begin to think, the details do not matter. It does not matter much whether we agree 20 per cent or 40 per cent for 2020, or what we pencil in for 2050. We simply have to invent a world that does not rely on burning carbon-based fuels to make its energy. And then get there as fast as we can. Climate change is not an on-off switch. Every tonne of carbon kept out of the atmosphere will keep the temperature that bit cooler.

And I have guarded confidence that it could happen. There are, after all, plenty of technical fixes waiting to be adopted. So an intriguing thought is that the politicians and diplomats may not matter so much now. Momentum may be moving towards the new energy technologies we need. A great deal of investment is now going into developing and improving those low-carbon energy technologies, by large corporations as well as scientific start-ups. The offshore wind farms being built round Britain's shores are one sign of this. So are the Silicon Valley billionaires in the USA who are putting their cash into companies that could cover American deserts with solar power kit. Others include the German energy companies who would like to power Europe from solar systems parked in the Sahara, the airlines that would like to run on biofuels, the electric cars now coming into the showrooms, and the endless ways of saving energy in homes.

Many of these technologies will fly without international treaties. We shall see if they do, but the ambition is there. And not just in the rich world. China may be the world's largest coal burner. But it is also the world's largest manufacturer of solar panels and wind turbines. Some of these it wants to sell to the West, but very many are being deployed at home.

China currently has no internationally-promised targets for even curbing the growth of its CO_2 emissions. But it has declared its own aim to decrease the carbon-intensity of its economy. That is, it will burn less carbon for every dollar of GDP it generates. Other developing nations, like Mexico, Brazil and South Africa, are making similar promises.

The development of these technologies will undoubtedly be improved by a tough climate treaty between now and the 2020s, with more and tougher to follow. A treaty would drive legislation on energy efficiency, encourage investment in R&D, impose taxes on carbon-emitting activities, maybe get some countries to ban coal burning altogether, and create financial incentives for renewables through carbon trading systems. But even without a treaty, most of these technologies will be developed and will become cheaper and more desirable.

There is also a growing recognition that the era of rapid tropical deforestation is coming to an end. Forest clearance is still responsible for around 15 per cent of global CO_2 emissions. One of the more likely outcomes of the climate negotiations over the next two years will be the creation of the REDD mechanism. Under this, tropical countries will be compensated in cash for taking steps to curb deforestation. Economists argue that, provided it can be made to work efficiently and without too much corruption and criminality, it is the cheapest way to cut carbon emissions. That again will help. But even if REDD fails to take off, the countries with the most forests and fastest deforestation rates, like Brazil and Indonesia, are now curbing deforestation for their own political, economic and, often, ecological reasons.

My biggest fear is coal. Unlike oil and gas, coal really could crucify the planet. It is cheap to mine and burn, and produces more carbon than other mainstream fossil fuels. Moreover, there are huge quantities of it out there – much of it beneath countries all too keen to burn it, like the USA, China, India and Russia. And the technologies for capturing and storing emissions from coal-fired power stations are probably decades away from widespread adoption.

The final great battle of the greenhouse age is likely to be between coal and renewables. If coal wins we are almost certainly in very severe trouble.

[2] Fred Pearce, Flooded out, New Scientist, 5 June 1999

[3] Climate Change Assessments, Review of the Processes & Procedures of the IPCC, InterAcademy Council, August 2010. http://reviewipcc.interacademycouncil.net/report.html

[4] Technical Summary of Mitigation of Climate Change (IPCC Working Group III), 2007

4

Mike Robinson

For 99.99% of earth's history modern human beings were absent. If we want to be part of Earth's future, we need to wake up to the fact that the Earth is a closed system and resources are finite. This is basic common sense. But are we up to this challenge? Are we able and willing to adapt? Or, are we too entrenched and short-sighted, scared or selfish to care enough to do anything differently?

Climate change is an accidental consequence of being unsustainable. Historically some societies have collapsed because of climate change, or been able to move when things went wrong. But, with the current record population and consumption levels, massive biodiversity and ecosystems damage and facing climate change affecting the whole planet, we now need to work out how to be sustainable – perhaps for the first time ever.

Being a global problem, we need a global solution. As a key starting point, we need national emissions reduction targets across the globe and some level of international agreement. That was the purpose behind the Copenhagen summit.

Was Copenhagen a failure?

'Copenhagen' seemed to be one of those moments when all of the "planets" lined up politically and we were going to see a positive, world-changing agreement to move us towards a lower carbon world and a more caring, considered and responsible world order. No small ask. But realistically, Copenhagen was probably only ever an exercise in how big a step could be agreed to move the world in the right direction. I just do not think we imagined the step would be so small.

If this is the rate of international decision-making, then we have to find a way to inject new urgency into this debate. Or, we need to look for alternatives and move away from the culture of horse trading, keeping our cards close to our chest, and couched and conditional agreements. This is not simply a moral and ethical issue, it is ultimately an issue of long-term national self-interest and survival. It needs an approach akin to "I have taken responsible action, because anything else is immoral – now it's your turn!" instead of "I might do a bit of what's necessary, if you promise to first".

The G8 nations alone account for around 50% of direct global CO_2 emissions[5]. The G20 nations are closer to 80% of direct global emissions,[6] and their impact on the other nations of the world obviously extends further still. Although the G20 group is self-appointed and predominantly financially orientated, we do not need to look further than this grouping to reach a meaningful international accord.

The G20 structure itself might not be the appropriate one to conjure an agreement, but the nations represented hold the key to the future resolution of this issue, whatever other nations elect to do. But the G8 nations, along with the EU, are really the ones who most require to show leadership. They have gained most from the historical over reliance on fossil fuels, they still control the lion's share of direct emissions, and until they have made commitments, it is unrealistic to expect smaller, newer economies to lead.

We should focus on solving the EU and G8 nations' commitments (to somewhere around 40–50% emissions reductions by 2020) over the next few months[7]. Then, solve the rest of the G20 nations' commitments in response (to somewhere around 30% emissions reductions by 2020) during next year and the year after. Many of the world's remaining powers will then follow suit.

So how do we move the G8? The USA, of course, is the biggest block, and on an actual and a per capita level it has a huge moral responsibility to take a lead. But, according to commentators and academics in the USA, it is not even engaging in a moral or ethical discussion. The rest of the world cannot wait for the USA to accept the inevitable. Perhaps, the biggest conundrum is how the rest of the world can influence the USA to take credible action, especially in the light of President Obama's weakened position after the recent mid-term Congressional elections.

It is also well beyond time for the expanded EU to make a decisive and unequivocal commitment of a 40% reduction in emissions by 2020. This would see the EU starting to act like the world's largest market that it is, but although the EU is minded to act[8], not enough is being done to encourage, force or deliver this.

If a single international accord does not move any closer, then we need to have a fall back. The most significant CO_2e reduction so far was brought about as an accidental by-product of the Montreal Protocol, when the world woke up to the depletion of the ozone layer and agreed to use alternatives to CFCs almost overnight. Maybe this approach is a fall back, where we identify those things which are simply too destructive or easily replaceable and enforce them in a series of separate agreements. Perhaps a world-wide insistence on alternatives to Portland cement, or bans on old forest destruction, tar sands or unabated coal fired power stations. It would take a lot of separate agreements, but each may be easier to agree than one massive global agreement.

But, this is undermined if we cannot agree on the scientific consensus.

Why is scientific consensus not getting through?

Climate change is a difficult subject to communicate effectively. It is vast, complex and for many, deeply depressing. Everyone actively engaged in the issue has had to go through a pain barrier and come out the other side, before they can get their head round taking action. It is easier to adapt our beliefs than change our behaviour, and easier to deny climate change than face up to its full horror. So, there are many factors in making it such a communications challenge.

Scientific development has always taken a while to gain traction. Unusually, in the climate change case, it is not one scientist's view taking a while to be accepted by the majority, it is the overwhelming scientific opinion which others just do not want to hear. The debate is not about whether climate change is happening – it indisputably is. And, it is not about whether humans are causing it – we definitely are. The debate is about how long we have left to change our behaviour, before we irreparably damage this beautiful planet we live and depend on. And it is partly about how much faith we have in people having the concern or foresight to even bother trying.

Undoubtedly we face change, but it is not all good or all bad, it is just change. We will need to be creative, resourceful, thrifty, brilliant and entrepreneurial. But, we have to do something, unless we feel that our right to have a Christmas shopping trip to New York, or a stag weekend in Istanbul is some inalienable cornerstone of western democracy which is to be valued more than our neighbours' right to expect their house not to flood. Fear of the consequence of change is, however, holding us back, but is it not ironic that our fear of making personal change is actually greater than our fear of climate change itself?

Part of the reason the climate change debate is waxing and waning is because it can seem high level, esoteric, and academic. Those who are going to be convinced by science or by moral and ethical arguments are convinced. But the arguments are difficult to engage with and, apart from lobbying or complaining, it is difficult to direct and channel action and effort.Could the arts community and other skilled communicators do more to help explain life under climate mitigation, and, to some extent, perhaps life without it?

Climate Change is not immediate enough to concern many people either. We have great faith in our human ability to make change when it 'really matters', because human ingenuity has always coped in the past. The issue over climate change is that humans are ingenious in seeking solutions, but usually only once a problem is so evident that we are literally having our lives directly impinged upon by not acting.

But, we cannot wait until things have got so bad that we are inconvenienced on a daily basis, because by then we will have lost any control over the stability of climate we currently enjoy.

One way to overcome this is to account for the long term and the 'externalised costs' in our decision making – we are currently hung up on narrow and short term measures of economic progress. GDP, for example, has long been criticised for giving a skewed representation of 'wealth'. One option would be to introduce a measure of the destruction we have caused to resources, the atmosphere and the environment, which is compared to GDP to calculate whether we are being sustainable.

Is there a lack of inertia too, in which people are confused and disempowered by the seeming contradictions and multiple options in front of them as to what to do about the issue? Too much choice is the modern curse, and with so much noise and counter statements, added to significantly by misreporting and scandalisation of news by the media, people really do not know what they are definitely supposed to do about it, and everyone has excuses not to change.

Misinformation and denial is a further obstacle to widespread adoption. If scientists have read, understood and researched the issue, and have accepted the peer-reviewed scientific evidence, there seems to be a suggestion that they are somehow not being impartial. Are scientists not allowed to be concerned? It is difficult for anyone who has read the science not to be. Yet a small group of nay-sayers, and one or two contrarians,

are trying to tear apart the scientific integrity of most of the world's leading scientists. 'Scepticism' is well funded. Climate change action is not. Genuine scepticism is understandable, and legitimate, measured, scientific challenge of the extent and speed of change is really quite crucial. But, there is an almost McCarthyistic attempt to undermine many and most of our leading scientists just for believing what their eyes, brains and studies are telling them. It is time we defended the integrity of our best scientists and institutions.

It does not suit anyone to believe in climate change, it is an appalling thing to have to contemplate. But it is not a matter of belief. It is a matter of scientific observation. We need to look forward and start trying things which will help reduce emissions, instead of continually revisiting past examples – if we are simply waiting for a blueprint of how to do it we are in for a long wait – nobody has done enough yet, so we need to be trail-blazing.

And under-pinning this, we need to further mobilise the public.

How do we mobilise the public?

There is a temptation to look to technology to solve this crisis, but it does not offer the immediacy of impact that we need – it is a soft option. Everyone hopes it can help. And, maybe it can. But it is a great way to prevaricate – why change anything about the way we live, when someone can just find a technological solution to the problem? And many solutions come with their very own unintended side-effects. We could waste precious time and distract attention by charging gleefully along the technology route, when actually the only simple way to achieve reductions is to reduce over-consumption, in large part by stopping being so wasteful.

And to do this we need to change public behaviour. But how?

To be fair, many people in the UK have been actively engaged in pushing for climate change action – otherwise we would not have the UK and Scottish Climate Change Acts. Here are great examples of unilateral action showing moral leadership, particularly in Scotland with its very testing targets. Everywhere where legislation and action has occurred civil society has played the key role, but it is difficult to co-ordinate EU wide and pan-global civil pressure. Civil society, though, is the heart and conscience of our communities. We also need to get better at disseminating best practice. There is also a disturbing tendency for some people to begin to become concerned in this arena and start yet another new initiative, instead of backing and strengthening the ones that already exist.

In the UK, now that we have the legislation, we need the will and commitment to see it through and we need to be clear about what it is exactly we need to do to achieve these targets. Once the discussion is around individual actions, though, it does become more complicated. There is no one silver bullet which will resolve climate change, so it is easy to dispute or dismiss any single action by arguing its futility or pointing at something we would each of us find more acceptable to cut. A four by four towing a caravan up a hill at speed does not individually cause a Polynesian island state to disappear underwater. It is, however, arguably short-sighted, wasteful and inefficient. So is driving at more than 55mph, flying excessively, not insulating buildings, making electricity from unabated coal, having no front doors on shops, and using Portland cement.

I believe the patterns of engagement around climate change are similar to engagement around other issues. Being very broad brush, it is possible to engage around a third of a 'community' positively in the issue, a third will not engage and the third in the middle will probably go along with the perceived consensus. Of the third that do engage, perhaps only 10% will entirely immerse themselves in actions, so there is much to be gained from persuading the other 90% of engaged public to take more action. This will encourage more and more of the middle third to adopt measures in turn, albeit, this is likely to be a little more ad hoc. So, we should prioritise communications and effort, working with the third that are minded to act, and encouraging this to ripple out to the next group. Much communication effort is wasted trying to convince the third that are entirely disengaged that we really have a problem. Do not start selling brown bread by targeting people with wheat intolerance, but target the white bread buyers who are motivated to consider healthy options.

One of the fundamental tenets of communication, which is often overlooked, is to reassure – to positively reinforce good decisions, to applaud certain behaviours, and to gently assure people that they have done a good thing. It is something people seek implicitly in communications and is critical in achieving long term adoption.

And, we need simple messages explaining what we need to do to reduce our over-dependency on fossil fuels. There is a sense of hierarchy to the way we address climate change credibly, but we do not communicate it consistently or simply enough. I have a simple device – CO twice. The most credible start point is to (C) cut back where there is wastage, avoid inefficiencies and cap the level of emissions in an area of our lives. Then, we should look for (O) options or alternatives to replace high emitting and destructive processes with more benign ones. Where we cannot easily cut back or find an

alternative we should aim to (C) capture emissions. And, where this is not possible, only then should we (O) offset. Only by clear, simple and consistent communication across the various sectors of society can we expect to achieve greater understanding and buy in.

Some people believe that if climate change is that serious Government will surely act and are waiting for a clear signal. There is no question that legislation is required to deliver some of the changes we need, but I think for practical and psychological reasons, we need a headline signal measure from government. Ideally, something that would affect everyone, but benefit everyone, would cost little to implement, save lives and money, but make a significant saving to carbon pollution, and would improve quality of life and encourage lifestyle change is needed. An example would be a 50–55 mph national speed limit.

Conclusions

There are many solutions to global warming, most of which we will have to take at some point. This societal, behavioural change can be just as exciting as it is scary, and as painless and positive as the energy we put into making it successful. And, by taking responsibility, informing ourselves and planning an appropriate response, we can choose a path towards a safer and more fulfilling future.

Internationally, we need to see a global deal, led by the G8 nations and the EU, and then persuade the rest of the G20. If this is not achievable, then we are going to have to break the problem down and address each area of emissions individually.

We need to reduce the fear of change, to be clear what changes are required. We need to defend and fund our scientists to continue to inform this change. We need to be consistent across government, local government, business and communities about what needs to be done and be convincing in communicating it. We need to pick our strategy and stick to it.

We need to back civil society groups to help them deliver change, because we need civil society to continue to lead on the urgency of this issue, and to promote adoption of positive behaviours, to create the space for politicians to act. Only by cutting waste and moderating behaviour can we bring about the level of short term cuts we need, and buy ourselves the time for the technologies to be developed.

And, most of all, we need to actually start making the necessary changes and planning our way forward.

Climate change is a very real and very substantial threat. If we want to be part of the long term future of this planet, we need to work out how to live more sustainably. It is not a matter of '*should we or shouldn't we do something*', it is a matter of '*what should we do?*' and '*what are our options?*'. We need to stop thinking that the answer is '*yes*' or '*no*', because the answer, if you value the future, is now simply '*a*', '*b*' or '*c*'.

5 UN FCCC Report on Emissions 1990–2000
6 Ibid
7 IPCC 4th Assessment Report: Chapter 13 – Policies, instruments and co-operative arrangements
8 Barosso et al, 2008, Speeches and report on European Parliament Citizens Agora.

5

Mary-Ann Smyth

Following a lacklustre Copenhagen FCCC CoP 15 and the global economic crash, I consider that three types of global action are required to help address climate change. Most of these actions are already underway, and each will require specific communication. The first action is to create local and national low carbon cultures. The second is to increase concern about energy security, and to continue to shift national energy policies towards using renewable energy sources. The third is to initiate an international shift in opinion towards emphasising that using fossil fuels creates 'climate victims', and that those who use fossil fuels should be taxed in order to help those victims and to protect global environment. Fundamentally, the world needs a carbon tax.

Was FCCC CoP 15 a failure?

The Copenhagen summit was not a failure, but it was a huge disappointment. It was unfortunate that China did not play a positive role, and embarrassing that there was no single European speaker. However, benefits have arisen from the fringe meetings, particularly initiatives by cities to embark on the low carbon journey, and the international work on reducing deforestation in tropical and boreal forests. Much of this success is probably thanks to a few forward thinking individuals and groups working behind the scenes.

The lack of a deal means that the 2°C maximum global temperature rise is unachievable (perhaps it never was); UK Meteorological Office[9] scientists are now suggesting that even to limit temperatures to 3° or 4°C will be tough.

But, CoP 15 did bring some good news. Including the forests, and probably now peatlands, in the REDD mechanism is a positive move; it provides a fundable and verifiable way for tropical countries to stop cutting down their rainforests, and for countries with high precipitation to conserve their wetlands and peatlands as carbon stores. Enhancement of the REDD mechanism also boosted development of better voluntary carbon offsetting initiatives, which are beneficial as part of the move towards raising awareness and helping the earth soak up more carbon from the atmosphere.

What next?

Are new inter and intra governmental mechanisms needed?

New binding international agreements are now required. Such agreements need to have more clout that existing international agreements, such as WTO, and probably need to be overseen by a stronger, bolder, and stricter UN.

The UN's original job was to bring to reduce conflict between nations and bring about a new world order; however, it is still the only international governmental organisation with a real chance to help humans manage the planet more sustainably. The solution to global environmental problems has to be above the level of national democracies. This does not require a new world organisation, just a meeting of minds of the global leaders, and more focus and direction from the UN.

The existing UN systems seem too cumbersome, but this could be improved with stronger leadership and with support for strong leadership from China and the USA. The UN's proposed panel aims to 'explore ways of lifting people out of poverty, while tackling climate change and ensuring that economic development is environmentally friendly'. It is not yet clear how the panel system will work, and it may need additional authority if it is to be more than a talking shop. Perhaps the global NGOs should shadow the Panel to help encourage it to be bold. At the same time, regional approaches need to be built up, so that regions compete to be carbon leaders. A binding Accord may not be possible to begin with, but binding commercial carbon trade agreements should be possible and offer a pragmatic starting point.

The EU is already doing what's right, but is struggling to show any leadership. Unless the EU can work out a better way of empowering a leader, such as the Environment Commissioner, it will be easier for a leader to emerge from a federated state, such as the USA or China.

National mechanisms, such as the UK and Scottish Climate Change Acts, are vitally important to the extent that they indicate to the rest of the EU and to the UN members that there is support for climate change action. But, they are too small on their own to affect global climate.

Why is the scientific consensus not getting through?

Gallup and Ipsos MORI polls[10] suggest that people are still sceptical over whether climate change is a big issue. Yet, the global warming data has been shown again and again to be correct. Climate change is difficult to predict. Models will never be good enough – climate is a turbulent system, and the extent of future cataclysmic climate change depends on various unknown feedback loops – methyl hydrates, permafrost melt, ocean temperature, acidity and salinity, ice cap melt, etc – phenomena that have been postulated, but have not been properly measured before. I would dispute the principle of over-reliance on models, because models relate to how we expect climate to work, based on how it seems to have worked in the recent past. But, in the future, the situation could be very different; ratios of gases, and atmospheric and ocean acidity are changing much quicker than predicted from examination of the geologic record, and future changes are unpredictable.

The media enjoy the discord between climate sceptics and the scientists and strategists who are warning about the consequences of inaction on climate change (selling newspapers depends on it), but the media also try to represent public opinion. Just ten years ago, the media mocked environmentalism, yet now the media has become pro-environment because public attitudes have changed. Among the sceptics there are so-called dinosaurs, oiled palms, and smart-alecs, as well as people just too busy and tired to care.

The scientific case for climate change needs to be made more effectively, ideally through a mix of drama and documentary. Effective communication demands that people feel a genuine emotion about climate change; so instead of presenting concepts (such as 'global temperatures' and 'climate chaos'), most people need to see and hear the stories of real **climate victims**, so that each of us feels an individual responsibility to help other individuals who have become victims of climate change.

Will the technology development stumble now?

Failure to reach an Accord so far has slowed down big spending on GHG reducing technologies, such as carbon capture and storage (CCS), but there are already plenty of good small stimuli, such as renewable heat targets. Other new stimuli could include an overhaul of corporate taxation (particularly the tax-breaks section) to remove incentives for non-climate-friendly developments, and to add better incentives for R&D into renewables and low carbon research, both in-house (for UK based companies) and into UK universities. It may, also, be helpful to add some legislative 'sticks' soon, such as a planned phase-out of commercial peat and coal mining unless gasification and CCS technology can be installed.

How should the public be mobilised to act rather than just opine?

The public need to be mobilised financially via carbon pricing and a carbon tax, so that it is not just the environmentally aware people who make the right choices. Fiscal policy needs to encourage behaviours that are good for the climate (for example, travelling by public transport, insulating our homes, reducing waste, and reducing family size), while discouraging the behaviours which damage climate (for example, over-consumption and careless use of energy).

Globally, world over-population is an issue, but this is changing. Better education (schools, radios, mobile phones, televisions) is helping people in the developing world. Better education encourages local economic development, leads to better health for families, and provides empowerment for women. Better informed and empowered women are able to access family planning services and (regardless of out-dated religious teachings) make personal choices about family size. These changes are happening more quickly than we expect (for example, in Brazil and southern India), and offer people rapid improvements in personal wellbeing, while at the same time providing global resource benefits. So globally, we need to put more effort into education, especially for women.

Economists belief that economic growth requires an increasing workforce needs to be challenged. We need to develop new economic models for a world in which, in the foreseeable future (before 2050), there will be a stable (I do not believe the predicted trends given the reduction in the birth rate already being experienced in, for example Brazil and southern India), and then a decreasing human population. Those same economists also need to include global environmental costs and benefits in their models: the world environment should no longer be freely exploited; it should be properly valued and cared for. This is a change that is beginning to occur[11].

What are the critical next steps?

Three types of global action are now required to help address climate change. Most of these actions are already underway, and each requires specific, targeted communication. The three actions need to happen hand-in-hand, at the same time.

The first action is to create local and national low carbon cultures. This is about changing public attitudes. Going low-carbon is not easy and will not be popular: fossil fuels are still too cheap and readily available, and we all like cheap energy and an easy lifestyle. So the new carbon economy must be better and more fashionable than the fossil economy. Low carbon options must offer an improvement in lifestyle, comfort and price over fossil options. Low carbon cars should be faster and funkier than their fossil alternatives. Low carbon houses should be warmer than fossil houses. Low carbon holidays should be more fun than airport-queue holidays. Low carbon businesses should be more profitable than fossil firms. In 80% of the country, climate-care farming should be more profitable than fossil-fuelled farming. Some of these changes are already occurring, and some will require EU policy followed by national carbon policies, incentives and price structures.

The second action is to increase concern about national energy security, and to continue to shift national energy policy towards using renewable energy sources. Developed nations are already keen to reduce their economic reliance on potentially unreliable oil and gas producing regions. By contrast, China is increasing its economic ties with oil and gas producers (for example in Africa). In America and Europe, care will be needed to ensure that the move towards energy sufficiency is a true transition away from fossil fuels, rather than an excuse to exploit dirty national coal seams and oil shale.

The third action is an international shift towards emphasising that using fossil fuels creates 'climate victims', and that those who use fossil fuels should be taxed in order to help those victims, and to help protect global environment. The world needs a carbon tax. I envisage 3 steps to achieve this.

The first step towards a carbon tax is to ask the environmental organisations to keep lobbying the EU. Politicians recognise that people will not vote for a carbon tax, so they need the voluntary organisations and grass roots movements to swing public opinion towards demanding political action on climate change, ideally imposed at a level above their own level of democracy. (This is already happening, but needs to keep growing, especially given the set-back following CoP15 and the trouble stirred up by the leaked e-mails.)

The second step is for carbon taxes and atmospheric pollution taxes to be introduced and strengthened by the few forward thinking regions of each nation (a few nation-states of Europe, a few states of the USA, and a few provinces of China). Fossil fuel prices need to be seen to be slowly but steadily rising in a predictable way, so that households and companies can sensibly budget to go low-carbon. European lobbyists should encourage the EU to bring carbon taxation in by the back door under the existing environmental legislation (as Obama had hoped to achieve in the USA).

Then the move to a low carbon economy needs to go global. So thirdly, carbon taxes need to be openly demanded by the political leadership of each continent (the EU, the USA, China, etc). This will prove difficult, especially in the USA. China may surprise us by acting quicker than we expect; indeed in March 2010 China announced a carbon tax on industry by 2012. Finally, a carbon tax needs to be demanded by the UN. Carbon tax needs to be charged on the producers of fossil fuels (oil and gas producers, coal mines etc) worldwide, as this should be a much more efficient and fair mechanism than the present nationally varied taxes on the users of fossil fuels. Carbon tax funds can then be paid to poorer countries to help them develop alternatives to fossil fuels, building on the experience of the existing emissions trading schemes.

In order to make a carbon tax publicly acceptable, it may be necessary to understand it as aid to the developing world, and link disasters to climate change. Communicators should change the words; talk not about reducing climate change but about reducing the number of climate victims, flood victims, famine victims. We should explain "we are killing these people by mistake. By initiating a carbon tax, we can help reduce the deaths we cause, and, at the same time, help climate victims."

A carbon tax will be unpopular with vested interests, and the concept will be anathema to heavy industry, climate change deniers, the airline industry, and last-century thinkers. But the future does not lie with them; indeed, their version of globalisation does not have a future at all.

[10] Gallup poll March 2010 said 48% of Americans believe the threat of global warming has been exaggerated, UK Ipsos Mori poll Feb 2010 showed adults who believe climate change is "definitely" a reality has dropped from 44% to 31 %

[11] Economist Sept 25th 2010: where a lengthy 'special' on the economics of saving the world's forests is followed by a financial piece with opposing views.

6

Simon Pepper

Copenhagen was a game-changer, but not in the way intended. For many people watching closely, this was the time when we realised that the prospect of catastrophe was almost certain. It is exactly what a thousand articulate voices have been warning for decades, but a culture of perverse optimism had kept our hopes alive. With these hopes dashed at CoP 15, we knew our civilisation was on the way out.

But we do not admit it. We celebrate the good things that are happening, ignoring the 'Mississippi effect', by which upstream progress, looking positive close at hand is revealed as an illusion when checking the horizon on either side. There is simply no longer any prospect of international action fast enough to prevent the climate reaching a tipping point where all bets are off. It is plain to see, but very, very hard to confront. We are prisoners of the myth of our civilisation's success, acutely aware of its magnificent achievements, but conveniently unaware of its ghastly costs and casualties.

Climate change is only one of the crises we are bringing upon ourselves. By any objective assessment, western industrial civilisation is spreading across the planet like a disease, acidifying the oceans, destroying forests and plundering fisheries, spreading poverty, hunger and despair. The rich folk barely miss a step, luxuriating in extremes of affluence and greed. We know it, even joke about it, feebly satirical:

Must the golf course on your yacht / be made of silk and ocelot? [12]

But we seem locked into this accelerating crisis. Remedial actions currently underway are clearly insufficient; the global picture deteriorates rapidly, with rampant levels of human demand on natural systems causing critical depletion of resources[13]. Changes in the climate, already inevitable, are now certain to cause major disruptions with social, economic and environmental impacts, although they are unpredictable in pattern and scale. We are past the point of stopping it from getting very bad, but just how very bad still depends on decisions which are well within our grasp – if we choose to act.

If we choose to act. Technically, we are told, the problem is entirely solvable. The problem – revealed not only at Copenhagen, but at a string of other global venues of vain rhetoric – is our inability to negotiate collective self-restraint. Even at a personal level, and despite abundant access to overwhelming evidence, only a very small percentage of us even talk about seriously changing. The number actually doing so is much smaller still. Most of us just do not. Quite the reverse, we baulk at it, demonstrating against the fuel duty escalator and outraged by speed cameras, whilst using fashionably green re-useable shopping bags to transfer our shopping-trolley harvest of the world's bounty into the back of our 4x4.

We need to be made to change, but there is the rub; political leaders will only decide with the consent of their electorate. Far from endorsing decisive action, surveys[14] show that we are getting a little bored of climate change; we would rather switch channels and do something else. Sport and pornography top the ratings.

All this is deeply unacceptable talk, but that is just the point. We need to break the taboo which constrains blunt and apparently misanthropic commentary, and confront the implications of what we know to be happening to our civilisation. Future historians will be in no doubt – this generation is perpetrating a crime against humanity. We know that billions of people will be the innocent victims of problems which we cause; it is hardly misanthropic to care about that.

We must break through to a new discourse which accepts realities, rather than pretending that all will be well: it will not be. Strategies responding to climate change have always acknowledged the two strands of mitigation (helping to prevent it) and adaptation (making changes to reduce its impacts). But neither of these is adequately framed to acknowledge the realities. On mitigation, where is the debate about population? An increase of 50% in the world's population predicted for the middle of the century will massively exacerbate all the problems. Some respectable analyses suggest that we could manage[15], but these are technocratic, neglecting social and cultural factors – only too chillingly evident today – which have repeatedly caused societies to founder in the past[16]. Instead of brushing the population issue aside with the assumption that even to discuss it is a sign of fascist tendencies, should we not be giving it at least as much effort and ingenuity as we give climate change itself? Where is the Intergovernmental Panel on Population?

On adaptation, why are we still concentrating merely on readying ourselves for drier summers and wetter winters? We should be discussing how to respond to massive movements of climate refugees, disruption of food and water supplies, and depletion of non-renewable resources. Exercises of this kind are few and far between[17].

What needs to be done?

Here is a six-point agenda.

First, we must be honest with ourselves. Face the (uncomfortable) facts. Climate change, resource depletion, poverty, hunger, population growth, drugs, disease, biodiversity loss... The world has not moved fast enough to correct any of these evils. Rich people in all countries of the world are using privilege to isolate themselves from this reality, in a sort of gated fools' paradise, while billions of others are already suffering unimaginable pain and deprivation. Denial is the enemy.

Second, do not despair. Keep trying, but much harder. A catastrophe is upon us, and every effort, in every realm – personal, neighbourhood, business, government, and international – will help to reduce its severity.

Third, re-calibrate our measures of well-being and success; health, family, beauty, togetherness and love. Cancel the glossy magazine subscription; it sells a seductive but corrupt illusion. Relearn the skills of self-reliance; grow food, self-propel, save, store and repair; observe nature, learn, improvise, explore, rediscover community. Reject the empty trappings of consumerism; look askance at the pressure to conform, compete and acquire. Lighten the burden we place on the world's resources. Live simply and meaningfully; find pleasure in small things.

Fourth, believe in the power of the people in a democracy. Challenge the easy comfort of optimism. Help to mobilise opinion, by being honest, brave, and responsible about our place in the world; alarming, but not alarmist. Few things are more powerful than peer pressure.

Fifth, give power to those who will take action at levels which you cannot reach. Vote.

Sixth, build scenarios not just for exploiting the opportunities in a low carbon economy, but for a world racked with climate change. Start working on the upcoming realities, not just of climate chaos itself, but of its much more scary consequences – huge movements of people, disruptions to global trade and security, widespread civil disorder and violence in the face of want, threats to centralised systems of power and order, services and supplies, and economic collapse.

All the evidence shows we need to be much more radical. So far, we are tinkering ineffectively at the edges. A lot more reality in the debate may be our only hope of mobilising serious action and re-igniting the optimism which, for many passionately concerned people, guttered and died at Copenhagen.

[12] Elvis McGonagall, –BBC Radio 4 Saturday Live 21/08/2010 www.bbc.co.uk/programmes/b00tdzns
[13] Living Planet Report 2010 – WWF
[14] Only 62% of Britons interested in (climate change), down from 80% in 2006, according to YouGov survey – Guardian 23/5/2010 www.guardian.co.uk/environment/2010/may/23/climate-change-interest-yougov-survey
[15] The World Environment in 2070 – Martin Holdgate, lecture Edinburgh October 2010, www.sibthorp.org
[16] Collapse – Jared Diamond 2005
[17] The Age of Consequences – Center for Strategic and International Security 2007 http://csis.org/publication/age-consequences

7

Claire Parker

The latest round of climate talks under the UN FCCC in Tianjin, China showed again that progress in establishing a global post 2012 climate change regime is difficult and painfully slow. The deadlock that occurred in the negotiations in Copenhagen last year was unfortunately prolonged throughout this year. It does not seem as if countries will be able sufficiently to patch over their differences before the Conference of the Parties to the UN FCCC in Cancún in December 2010 so that a global legally binding agreement can be adopted then.

The challenge posed to humanity by climate change is, however, as great and as urgent as it ever was. The impacts on people and on biodiversity are already being felt in most parts of the world; this year has again seen a number of devastating extreme events, such as the floods in Pakistan, India, China and Iowa, USA. Cutting greenhouse gas emissions is a priority all of mankind should address now; it is the only, long-term answer to restoring our climate to stability.

One of the most immediately accessible solutions to reduce emissions is to halt the loss and degradation of tropical forests. The REDD-plus[18] mechanism envisaged under the post 2012 UN FCCC regime, whereby developed countries pay tropical developing countries to conserve and restore their forests is therefore one of the most promising developments in the past three years of negotiations. In these negotiations, IUCN will advocate for adequate distribution mechanisms and for the participation of indigenous peoples in all phases of REDD-plus.

Because the efforts to reduce global emissions to a level that would not endanger the climate any longer are still largely to be made, and because past emissions will continue to influence the climate for years to come, measures to adapt to the inevitable impacts urgently need to be put in place. Adaptation is high on the UN FCCC's negotiating agenda, as are the financial means to enable adaptation actions to be implemented. IUCN is supporting the establishment of a strong and action oriented Adaptation Framework as part of the 2012 regime, and for the inclusion of Ecosystem-based Adaptation[19] as a fully recognised adaptation action.

In addition to its advocacy within the international climate change process, IUCN is pursuing a large number of on-the-ground projects and initiatives to implement REDD Readiness and Adaptation Actions. Vulnerable countries and communities are already facing and responding to the impacts of climate change, and require urgent and scaled-up support to further these efforts.

IUCN is also ensuring that gender considerations enter the negotiation process wherever appropriate. Women often carry the brunt of climate change impacts as they are often the managers of natural resource in developing rural communities. They have limited access to the resources needed to adapt to climate change – including land, credit, agricultural inputs, decision-making bodies, technology and training services. Empowering women can help reduce these impacts.

Throughout the negotiations, which will hopefully soon result in the adoption of a comprehensive, global and legally binding post 2012 climate regime, IUCN will continue to advocate for solutions that provide mankind with effective ways to reduce emission as soon as possible, to protect the poorest and most vulnerable from the worst impacts of climate change, and to preserve nature and biodiversity for the generations to come.

[18] Reducing Emissions from Deforestation and Forest Degradation, including conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries.

[19] Ecosystem-based adaptation is the management, conservation and restoration of ecosystems to ensure that they continue to provide the services that enable people to adapt to the adverse impacts of climate change.

8

Anthony Giddens and Martin Rees

OPEN LETTER ON CLIMATE CHANGE

We address this letter to political and business leaders and to the wider public. This year has seen outbreaks of extreme weather in many regions of the world. No-one can say with certainty that events such as the flooding in Pakistan, the unprecedented weather episodes in some parts of the US, the heat-wave and drought in Russia, or the floods and landslides in Northern China, were influenced by climate change. Yet they constitute a stark warning. Extreme weather events will grow in frequency and intensity as the world warms.

No binding agreements were reached at the COP 15 meetings in Copenhagen last December. Leaked emails between scientists at the University of East Anglia, claimed by critics to show manipulation of data, received a great deal of attention – as did errors found in the volumes produced by the Intergovernmental Panel on Climate Change of the UN (IPCC). Many newspapers, especially on the political right, have carried headlines that global warming has either stopped or is no longer a problem.

It cannot be emphasized too strongly that the core scientific findings about humanly-induced climate change and the dangers it poses for our collective future remain intact. The most important relevant fact is based on uncontroversial measurements: the carbon dioxide (CO_2) concentration in the atmosphere is higher than it has been for at least the last half-million years. It has risen by 30% since the start of the industrial era, mainly because of the burning of fossil fuels. If the world continues to depend on fossil fuels to the extent it does today, CO_2 will reach double pre-industrial level within the next half-century. This build-up is triggering long-term warming, the physical reasons for which are well-known and demonstrable in the laboratory.

Data from the National Oceanic and Atmospheric Administration of the USA show that 2010 is set to be the warmest year globally since their records began in 1880. June 2010 was the 304th consecutive month with a land and ocean temperature above the twentieth-century average. A report produced by NOAA in 2009 analysed findings from some 50 independent records monitoring temperature change, involving 10 separate indices. All 10 indicators showed a clear pattern of warming over the past half-century.

A renewed drive is demanded to wake the world from its torpor. The catastrophic events noted above should provide the stimulus. The floods in Pakistan have left some 20 million people homeless. Pakistan cannot be left to founder – but neither can other poor countries, many of which are vulnerable to catastrophic weather events. World leaders should expedite and accelerate the discussions currently under way to provide large-scale funding for poorer countries to develop the infrastructure to cope with future weather shocks.

The United States of America and China are far and away the biggest polluters in the world, contributing well over 40% of total global emissions. The EU is pursuing progressive policies in containing the carbon emissions of its Member States. Yet whatever the EU and the rest of the world does, if the USA and China do not alter their current policies there is little or no hope of containing climate change. The United States has 4% of the world's population but churns out fully 25% of the world's carbon emissions. With or without federal legislation, the United States must assume a greater leadership role in world efforts to curb climate change. President Obama should reassert that containing climate change is one of the highest priorities of his administration. Positive initiatives are happening at the level of local communities, third sector organisations, cities and states. These groups must exert pressure on many different levels to promote a significant reduction in the country's emissions.

China's leaders show increasing awareness of how vulnerable the country is to climate change, and are investing in renewable technologies and nuclear power on a substantial scale. However China's carbon emissions are steadily increasing. China has the right and the need to develop, but much clearer plans than seem to exist at present are needed to show how the country intends to move away from its existing high-carbon path. The Chinese leadership should formulate such plans, make them public and open them up for international scrutiny. The current emphasis upon improving energy efficiency is important, but nowhere near enough to seriously chart such a path. Russia is the third largest emitter of greenhouse gases after the United States and China. President Medvedev has proposed targets the country should adopt, but as they stand they are empty. Calculated against a 1990 baseline, they are accounted for simply by the decline of the country's uncompetitive heavy industries.

Above all a renewed impetus to international collaboration is required. The meetings of the UN at Cancun in December 2010 at the moment carry little promise of initiating policies on the scale needed. The USA, China, the EU and other major states such as Brazil and India, with due attention paid to the interests of smaller nations, should work together to try to introduce a greater sense of urgency into the process. Finally, limiting carbon emissions will not happen solely through regulation and target-setting – innovation, social, economic and technological – will be central. Enlightened business leaders should step up their attempts to this end. The rewards, after all, are huge. The actions needed to counter this threat – the transition to a lifestyle dependent on clean and efficient energy – will create manifold new economic opportunities.

9

Key Issues and a Call for Action

Roger Crofts

The responses to the six questions posed, and the key themes emerging are summarised. The calls for action are brought together as a **Call for Action to address climate change: the Five Commitments.**

The response to the six questions

The responses from contributors to the six questions were as follows.

Was Framework Convention on Climate Change Conference of the Parties 15 a failure?

No contributor regarded CoP 15 as a success; many branded it as a failure, likening it to successive failures in international trade negotiations: 'failure breeds failure' in the words of one contributor. Overall, there was genuine disappointment that little progress was made, particularly as there is little time for a replacement for the Kyoto Protocol to be agreed before the old one runs out at the end of 2012. The Accord was widely regarded as a weak statement, but not without its uses. Some considered that CoP 15 at least brought world leaders together to focus on climate change, and that the Accord and the alignment of the emerging countries as a powerful block was a sign of some progress.

National governments were generally regarded as the key stumbling blocks, with their strong vested interests for retaining power, rather than considering the role they can play in progressing a new deal. Contributors thought this was exacerbated by the continuing reliance on GHG emitting energy sources, and particularly the reliance on abundant global supplies of coal.

The platform given to those states which are already suffering from the effects of climate change, for example the Maldives, gave some degree of hope that change might be possible. As did the fact that the two countries with the largest populations (India and China), and two resource rich emerging countries (Brazil and South Africa), joined forces in an attempt to fashion a new approach, and brought the USA into their discussions. The grave disappointment was the failure of the USA and China to show real leadership amongst the industrialised countries. Some of our contributors argue, therefore, that the G8 nations, followed by the G20 group, with the active support of the EU, must show greater leadership in fashioning a new international agreement. The urgency of the situation was underlined by all. Some felt that the switch from an environmental imperative to a diplomatic play was a retrograde step as it meant that progress was likely to be determined by the pace of the slowest: the 'lowest common denominator' effect well known in international negotiations. This change of approach needs to be challenged by civil society if there is to be any hope of an internationally agreed treaty and revised targets. Hence the call to the G8 nations to take the lead and, in effect, to transform the discussions into the 'highest common factor' approach.

Optimism was not high amongst our contributors. They regarded the next round of talks in Cancún as an opportunity not to be missed. The open letter from Rees and Giddens, with the support of Bill Clinton and President Calderon of Mexico, is a clear signal to the world of what many regard as the minimum next steps. A tough treaty with tough targets is the minimum necessary.

Are new inter and intra governmental mechanisms needed?

There was widespread scepticism about the UN machinery, not just on climate change, but also on other global issues, such as biodiversity. However, no contributor argued for dispensing with it or re-fashioning it into a different form. The consensus was that leadership at political level was essential from those countries with greatest affluence and having the highest per capita and absolute levels of emissions. The power blocks of the G8, G20 and the EU needed to recognise their collective responsibilities for helping the world to move from the brink of the impending crisis and to fashion a new order. Although the efforts of the EU in Europe was recognised, the EU needs to take a more central role in the global negotiations, rather than being left out in the cold, as happened in Copenhagen.

Individual countries and the devolved administrations within them (provinces, states etc) have a powerful role to play in devising legislation and setting precise targets. The efforts of the UK and Scottish Parliaments were noted as exemplars with their respective statutes.

Why is the scientific consensus not getting through?

The complexity of the scientific case and the slightly differing outcomes of modelling future climate make the situation confusing to civil society. This was exacerbated by the inability of some of the leading scientists to make the science intelligible to the non scientist. The situation has been compounded by the well publicised 'glacier gate' and 'climate gate' fiascos. These have caused a dip in confidence in the science. It could be claimed that the media has made a mountain out of two small molehills. Consequently, they have given fuel to the climate sceptics belief that the scientific case for climate change is unproven and that there is, as a consequence, no need for action to reduce global warming. Our contributors, all of whom are either scientists or are scientifically literate commentators, entirely refuted this. There can be no other explanation: the effect of human activity through the emissions of GHG from the use of fossil fuels over the last few centuries is the primary cause of the changes in climate now being measured.

So what is the problem? Our contributors identify the key problems as being poor communication, lack of clarity on the degree of confidence in the models and an inability to admit small mistakes.

To overcome these communication shortcomings, our contributors sought for more openness and honesty from scientists, particularly on the uncertainties in the data and the range of likely errors in the models. There was a plea for modelling to show what the world would be like without action, and alternatively what it could be like with action to curb emissions. This would help citizens understand the choices and the consequences of inaction far better than any other approach. And, there was a plea for those with communication skills, from the arts and communications sector, to engage with scientists in putting the case across to the public.

Will technology development stumble now?

The consensus was that technological development would continue. Some argued that it needed substantial additional support from governments, others considered that the development would occur anyway as there were emerging markets for the outputs and industry had been increasingly taking a lead in developing alternatives to fossil fuel sources of energy.

There was widespread concern about the possible use of geo-engineering solutions. The thrust of the argument was that these methods are unproven in themselves and that the potential but as yet unknown environmental side effects could be much greater than the benefits to society.

How should the public be mobilized to act rather than just opine?

The need for greater mobilisation of civil society was a recurring theme. There had been engagement, but this was so far insufficient to force political leaders to take the necessary action globally and nationally. Action through the ballot box, formation of effective lobbying organisations, and focussed campaigns were all advocated. One novel approach is to persuade civil society to recognise 'climate victims' – those people and societies who through no fault of their own have been drastically affected by climate changes and its consequences. This would help to galvanise action to help the poorer countries and is fully consonant with the Millennium Development Goals.

Fundamentally, there was a need for a change in the behaviour of society as individuals, families, and communities to create 'a low carbon culture'. This would require people to reduce their consumption, to reduce family size, to use more locally grown and locally sourced products, and to lessen their dependence on fossil fuel energy sources.

What are the critical next steps?

There is no quick fix or silver bullet given the complexity of the climate change issues, and their variable effects on the world's people over time and across the globe. But the consensus of our contributors is abundantly clear.

1. RECOGNITION OF THE IMMEDIACY OF THE PROBLEM

The world is at the crisis point. The scientific evidence is clear and unambiguous in pointing to a quickening of the two key trends: the rise in average global temperatures and the increasing rise in the concentration of atmospheric carbon to levels never measured before in human history. If we fail to take action internationally, nationally and locally the situation will only get worse and the consequences for our societies, economies and for the environment will become increasingly negative. We cannot reach 2012 without a new international agreement and binding targets on emissions reduction to replace those agreed at Kyoto in 1997. Even if agreement is reached at Cancùn in December 2010, the timescale for positive benefits to be achieved is a long one because of the climatic change trends already in play and the time it will take to reverse them. A change of mind set is needed – greater honesty about the future of the world and its people if nothing is done. We have to keep trying to get changes made and try even harder to address the resistance from key nations and climate sceptics.

2. LEADERSHIP BY POLITICIANS AND CIVIL SOCIETY

Leaders have dodged taking the lead and this cannot continue if the crisis point is to be avoided – as it must. This means that political leaders at all levels from local to global, alongside civil society, need to take a more principled position to take action and to do so quickly. The USA and China have to play formative roles, as does the EU. Lobbying and campaigning by civil society and voting for candidates with a strong climate change action agenda will help to put pressure on politicians to take action. A key element would be greater education and empowerment of women who, as the main provider for and carer of families, especially in the emerging and poorer countries, are often the worst victims of climate change.

3. URGENT ACTION BY GOVERNMENTS

A dual approach of sticks and carrots is needed. This should combine legislation to reduce emissions including testing annual targets, with incentives for emission reducing and energy consumption reducing technologies and their adoption in everyday business and social life. There also needs to be regulation to prohibit, or at least phase out, the worst culprits of climate change. Use of coal for energy and tree felling in tropical countries are examples given by contributors. Action on other energy saving measures, such as a mandatory reduction in speed limits to 50–55mph in the UK, is suggested. Carbon trading schemes have had limited effect, a global price for carbon (the holy grail of some) is a far off possibility and carbon pricing has not found favour more generally. The more draconian measure of a tax on carbon emissions is, therefore, called for by some of our contributors.

4. NEW INDICATORS OF THE QUALITY OF LIFE

The use of purely economic measures of well-being, such as GDP, is called into question. Arguments are made for new measures which embrace human society well-being (health, education, food and water), and also measures of the health and sustainability of the world's natural resources. These are fundamental for measuring our future well-being. More social, scientific and policy effort is needed to develop these new measures and ensure that they are used in practice.

5. IMPROVED COMMUNICATION

Those with communication skills need to work with climate change scientists to ensure that the public is given factual, objective and understandable material on the trends and causes of climate change, and predictions for the future. To this should be added scenarios of the world and its constituent parts under different assumptions of rates of climate change.

6. CHANGING THE ENERGY FUEL BALANCE

It is essential to change the fuel balance from fossil sources to renewable sources and, at the same time, to achieve security of energy supply for domestic and commercial consumption. Alongside this shift there needs to be reduction in consumption through energy efficiency and energy saving measures. There are many examples of good practice and these should be widely communicated. There are many SMART technological solutions which need to be made available and affordable to all.

Call for Action to address climate change: the Five Commitments

The consensus of our reviewers is that the case has already been made that climate change is occurring, despite the scepticism of some politicians, economists and commentators. There is disappointment that progress at FCCC CoP 15 was so limited, but some consider that the gathering of world leaders and the attention given to the debates by global media has heightened the profile of the need to take action on climate change. There is a general recognition that there are no 'silver bullets' or single, simple solutions as the position is very naturally complex and the effect of human activities on global climate adds to this complexity. One contributor neatly put it 'nature makes the rules not humans', so that understanding of the complexities of natural systems and the effects of human activities is essential.

Doing nothing is not an option for our contributors, or for me. I call on all parts of society to make commitments to reducing emissions and to helping those most in need and most affected by climate change.

COMMITMENT 1:
Leaders of G8, G20 and the EU nations to commit now to a new a climate change treaty and meaningful targets to reduce GHG emissions and to funding poorer countries to withstand the effects of climate change.
Narrow, national interests have to be set aside to achieve changes which will benefit all the world's people, especially the poorest, and allow nature to operate naturally using novel mechanisms such as REDD+.

COMMITMENT 2:
Leaders of national and local governments (especially the USA and China) to commit now to climate change legislation with testing emissions reduction targets.
Action by and within countries is crucial to achieving reduction in GHG emissions as demonstrated in the UK, in Scotland and some USA states.

COMMITMENT 3:
Business leaders to commit to develop and utilise new strategies and technologies for a low carbon world.
Businesses to survive and remain profitable need to lobby for new governmental frameworks and appropriate regulatory regimes, develop new business strategies with climate change and sustainable development at the core, and embrace new technologies to reduce uncertainty, develop markets and retain reputation.

COMMITMENT 4:
Civil society throughout the world to commit to lobby for international and national treaties and targets for reducing emissions.
Civil society is a powerful force arguing for changes by political leaders through the ballot box, through concerted advocacy, and through practical demonstrations of a low carbon society. Civil society should also champion the cause of 'climate victims'.

COMMITMENT 5:
All energy providers and energy users worldwide to commit now to switch from fossil fuel to low carbon energy sources.
Governments, scientific and business interests need to invest more in developing renewable energy technologies and methods for reducing energy use. All users should reduce energy use without diminishing quality of life and levels of output.

Has CoP 16 in Cancún made any difference?

Twenty six agreements at CoP 16 of the UN FCCC would seem to represent progress, but is that the case in reality? A quick analysis of the reams of paper suggests from the diplomatic perspective that steady progress is being made towards new agreements, but seen from an environmental action perspective there was little firm progress and commitment to action. Among the innovations agreed were:

1. **The Green Climate Fund with a new committee to draw up proposals to help developing countries introduce cleaner technologies; but, significantly, there was no agreement on either the amounts or the source of the funds.**

2. **National emission targets are now anchored in the UN process and proposals for strengthening the reporting requirements on performance considered. But, none of these force the unwilling nations to establish challenging emission reduction targets and the reporting requirements are not firm.**

3. **Carbon trading mechanisms likely to continue, including the Clean Development Mechanism, but there is no surety at present.**

But there are some big gaps:

1. **No agreement on post Kyoto Protocol, only further discussions;**

2. **No date or methodology agreed for determining the dates of peak emissions (in the future) in countries; and**

3. **Deforestation procedures further discussed, but the REDD mechanism not approved in practice (maybe a little movement in the right direction in diplomatic speak).**

Fundamentally, and despite some innovative thinking and approaches, there is still no deal between the developing countries and the developed countries as the former insist, quite rightly in my view, that key countries China, Japan and the USA must sign up to formal emissions reduction that are verifiable. Inevitably, it will not be the individual elements which will be of most importance to the Parties to the FCCC, but the overall package and its likely impact on national sovereignty and national economy. Maybe, as Fred Pearce noted appositely in his piece, we are now in the long play diplomatic game and the type of progress which the civil society bodies, including the environmental movement, wished to see, will be very much slower, more deliberative and highly frustrating. Meanwhile, the level of atmospheric carbon concentrations continues to rise. The wake up call has not been heard and the 'lowest common denominator process' is in operation.

Set against the Five Commitments did Cancún make any progress?

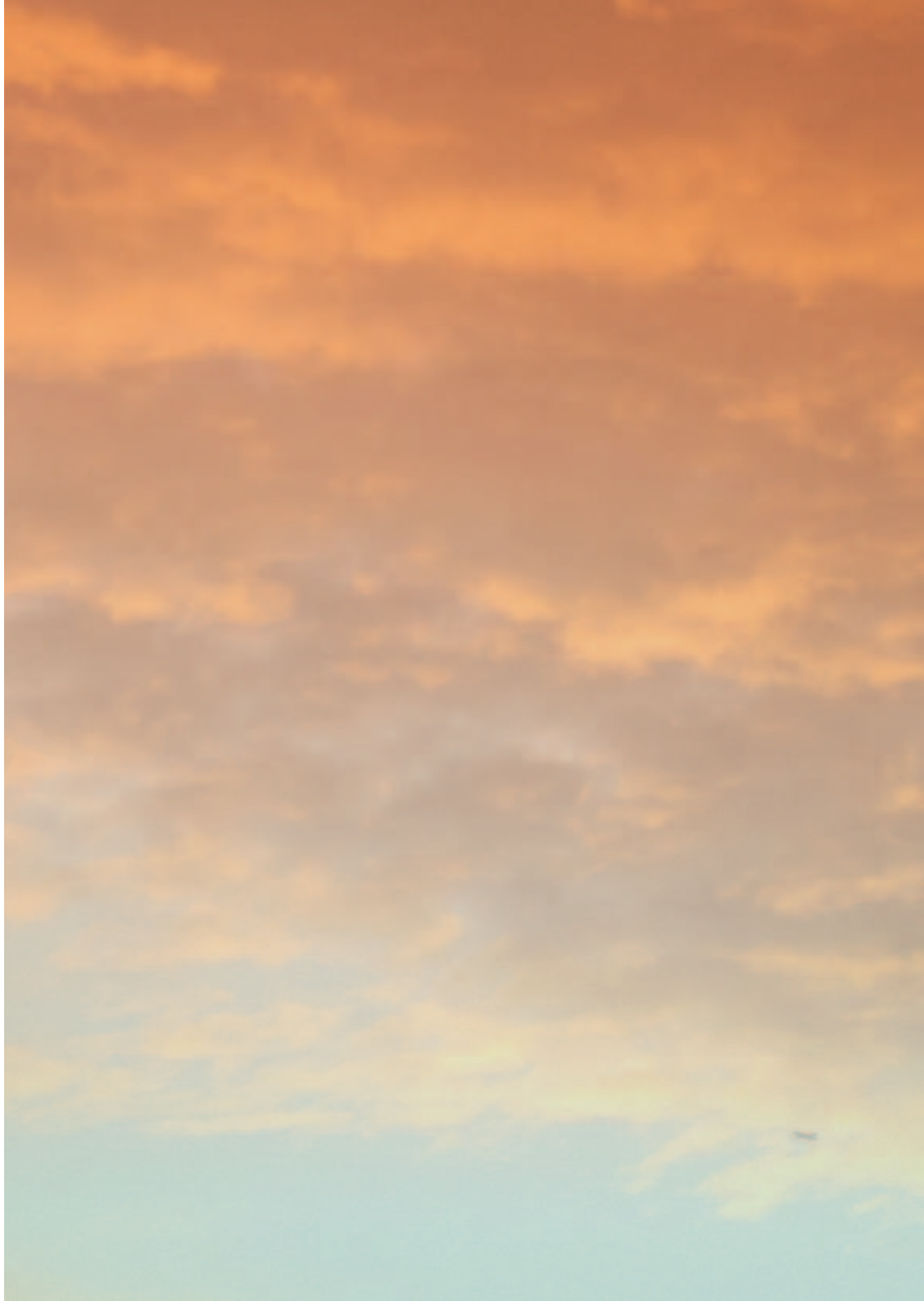
COMMITMENT 1:
Leaders of G8, G20 and the EU nations to commit now to a new climate change treaty and meaningful targets to reduce GHG emissions and to funding poorer countries to withstand the effects of climate change.
FAILED. No commitment to a new Treaty or a replacement to the Kyoto Protocol. Funding mechanism identified, but no sources or levels of funds.

COMMITMENT 2:
Leaders of national and local governments (especially the USA and China) to commit now to climate change legislation with testing emissions reduction targets.
FAILED. In addition to no movement from the USA and China, Japan also stated its stance against tougher emissions targets.

COMMITMENT 3:
Business leaders to commit to develop and utilise new strategies and technologies for a low carbon world.
SOME PROGRESS with development of Technical Executive Committee and Technical Centre, but ***FAILURE*** to provide the leadership sought by the business sector for clearly defined overall international frameworks.

COMMITMENT 4:
Civil society throughout the world to commit to lobby for international and national treaties and targets for reducing emissions.
SOME PROGRESS as good deal of quality media attention on the issues and outcomes, and organised civil society presence.

COMMITMENT 5:
All energy providers and energy users worldwide to commit now to switch from fossil fuel to low carbon energy sources.
NOT FOR THE CoP.



Climate change is one of the key issues of our times. Ignoring it is not an option. We present different perspectives on what needs to be done in the light of the major international conference in Copenhagen. Our aim is to stimulate informed public debate. Please read on and then join in.

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