

Climate change: *quo vadis et quis custodiet?*

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Introduction

The world's population has to come to terms with the dire predicament which it has hoped it would not be necessary to take too seriously. We may well be already presiding over our own demise. An accelerating process is under way releasing further carbon dioxide emissions into the atmosphere in spite of the fact that they are already at a dangerous level of concentration. We now know that the planet's capacity to act as a greenhouse gas reservoir for them without destabilising its ecological balance is finite. Current patterns of fossil fuel-dependent activity are far in excess of this level. One of the most eminent climate scientists in the world, James Hansen, now warns of the dangers of the concentration of these emissions exceeding 350 ppmv (parts per million by volume):¹ at present, it is close to 390, and the relatively progressive UK Government continues to spell out the extreme difficulties of limiting it to 500! The 2007 IPCC report² included the calculation that a curtailment of fossil fuel use down to zero carbon emissions must be speedily achieved – not the widely accepted figure of an 80 per cent reduction by 2050.³

Quo vadis?

Despite this, energy-intensive lifestyles are spreading and intensifying around the world. When this is combined with losses of rainforest and peat lands, rising acidification of the oceans and methane release from tundra regions at alarming rates, there is the very real prospect of catastrophe this century, with large areas of the planet becoming uninhabitable for human beings, animals and other wildlife generally. The consequences are already apparent in evidence of the melting of the Arctic and Antarctic ice shelves, growing desertification in Africa and China, flooding in Bangladesh and drought and flooding in Australia. There is the distinct prospect, verging on the inevitable, of sea level rises leading to a shrinking habitable land mass on which a burgeoning population will have to live.

Our bequest to those we claim passionately to care for?

No other aggregation of human behaviours in recorded history can begin to match the appalling legacy we are in the process of bequeathing to future generations of all species by our near-total failure to face up to the implications of climate change, potentially leading to:

- regions of the planet becoming uninhabitable at an accelerating pace
- extensive water and food shortages in many countries
- catastrophic loss of life and likely wars of survival
- escalating numbers of ecological migrants of all forms of life seeking refuge from the largely predictable impacts of climate change
- widespread decrease of species diversity and genetic variability
- little oil, gas and other of the planet's finite mineral reserves remaining available for use
- the terrifying risk of nuclear war owing to the proliferation of weapons-applicable nuclear technology
- an obligation for thousands of years to guard against radioactive waste leaking from its repositories
- considerable financial debt owing to our failure to live within our means
- living in a world in which news gets progressively and inescapably grimmer.

We do not seem prepared to reverse the process that has brought about this lamentable situation. We are loath even to contemplate the changes that must be made, especially those entailing a massive reduction in our use of fossil fuels. Encouraging statements are voiced to give the impression that we are aware of the gravity of the situation and that we must act as current stewards of the planet, committed to furthering the cause of social justice, working towards achieving worldwide low-carbon economies and, whenever possible, adopting sustainable strategies. However, when attempts are made to translate these worthy objectives into practice, the statements can be seen to be little more than empty rhetoric. Those questioning the sufficiency of the efforts being made are dismissed as theoreticians incapable of understanding human nature and political reality or 'holier than thou' kill-joys probably with hidden political agendas.

Hope of light at the end of the tunnel is being cast into doubt, first, by the absence of any indication that even the affluent population's demand for higher energy-based activities is by any means satiated; secondly, by the understandable aspirations of the burgeoning third

1 J Hansen et al 'Target atmosphere CO₂: where should humanity aim?' (2008) *Open Atmospheric Journal* vol 2 pp 217–31.

2 Intergovernmental Panel on Climate Change 2007 Assessment Report (AR4) www.ipcc.ch.

3 Ed Miliband Climate Change and Energy Secretary 'Tougher Climate target unveiled' BBC News Channel 16 October 2008.

world population to follow our lead; thirdly, by the gross inadequacy of the carbon reduction targets we are setting and, finally, by reasonable doubts about the certainty that even these will be met.

The implications are far more significant than may at first be recognised. This is exemplified when consideration is given to the future of heavily energy-dependent activities such as flying. Demand for international air travel is growing apace in spite of the fact that there is no alternative fuel to kerosene in the foreseeable future. The great majority of flights cannot be categorised as absolutely essential – which they must be if we are to prevent the tipping point being reached beyond which the climate system is no longer controllable by human action. The time is long over for denial that apocalyptic disaster is inevitable unless drastic steps are taken both to stop burning the fossil fuel reserves of the sun's energy accumulated over millions of years and to stop deforestation.

Government responses

Nevertheless, the focus of efforts at all levels of society, including those of government, to limit damage from climate change appears to be very narrow. It is aimed at the actions individuals and industry can take in switching to lower carbon lifestyles and the barriers that can be seen to be standing in the way of their adoption. Against a background of considerable opportunities for reducing carbon emissions, most attention is being paid to promoting increased energy efficiency, substituting renewable sources of energy for generating electricity and identifying the most effective policies that government can adopt to encourage these actions. Implicit in this approach is the view that, in time, these practices will lead to a sufficient reduction of emissions and that the public, industry and commerce can be motivated to deliver this voluntarily, encouraged by better information, offers of grants, exhortation and the setting of higher standards by government.

A major reason for the gross insufficiency in the necessary reduction in almost every walk of life is that the public has been led to believe that it has a right to ever-rising improvements in its material standards and life choices. Statements of all the main political parties give a strong impression that such a future is possible without the need for major behavioural changes that people would prefer not to make. They reflect the abject failure of most relevant institutions and the media to alert the public to the awesome prospects for life on earth later this century – and beyond – if businesses dependent on high use of fossil fuels continue on a path of growth rather than of steep decline.

Fallacious assumptions

Behind the lack of recognition of the need for urgent action lies the judgment – close to a tenet of faith – that the primary way of improving the public's welfare and quality of life is through the medium of economic growth and that, in the face of the worldwide recession, every

effort must be made to return to it. The implication of this is that growth can be reconciled with protection of the global environment from the ravages of climate change and that it can be maintained into the foreseeable future.

Allied to this perspective of the future are many questionable beliefs that have wide support as they seem to hold out the expectation that the development of future policy can be based on such a strategy and that any serious challenge to it is, without question, uncalled for. These include a near-absolute confidence that:

- people have an inalienable right to engage in environmentally-damaging activities, such as flying to distant destinations if there are no acceptable less-damaging alternative means of doing so and they are prepared, and can afford, to pay the price – on the 'polluter pays' principle
- taxation can be deployed to ensure a realistic price for the release of a tonne of carbon dioxide emissions into the atmosphere so that that principle can be applied. It simply needs to take into account all short- and long-term adverse effects (such as of the lifetime of 100-years plus of the emissions remaining in the atmosphere and resettling ecological refugees fleeing their homes owing to climate change). By these means, the economy can continue to grow without that leading to accelerating diseconomies from these effects
- science and technology can be relied upon to make major contributions to prevent climate change, thereby ensuring that environmental problems following in the wake of continuing economic growth do not lead to the need for major behavioural changes
- offsetting carbon emissions by paying for their reduction in developing countries is a morally defensible means of enabling people in affluent parts of the world to maintain their energy-intensive lifestyles
- modest reductions in greenhouse gas emissions are indicative of a process that should be supported as it can eventually lead to sufficient reductions. Associated with this is the inference that there is both sufficient time left for this process to prove effective and that the necessary funds will be found to do so.

The time is over for engaging in these lines of reasoning and elements of wishful thinking. Economic growth, undifferentiated by its contribution to climate change, must be replaced by solutions derived from ecologically-sustainable policies and from the adoption of new indices of progress based on equitable principles and quality of life measures. Moreover, it is totally unrealistic to expect many individuals or communities to act unilaterally when others are not doing so. Nor is it realistic to expect sufficient success to come in the wake of businesses 'going it alone' in adopting green practices – any more than it is from individuals doing so.

The public through its actions is showing that it is addicted to energy-intensive lifestyles and is providing little indication of its preparedness to give them up.

The need for a comprehensive strategy

So what is to be done in the knowledge that any strategy to respond sufficiently to climate change can only be considered successful if life on earth in the centuries ahead, at least comparable in its attractions to those we now enjoy, can be assured? It is obvious that the issue of the fair distribution of a basic component of everyday life to which everyone has an equal claim must not be permitted to be side-stepped any longer. For instance, in the UK, the average individual's annual carbon dioxide emissions into the atmosphere exceed 12 tonnes, whereas the exigencies of atmospheric limits and the application of the principle of equity, particularly in relation to a finite commodity, require that they are speedily and safely brought down to less than one tonne. Realistically, then what justification can there be for one person to drive a car for 10,000 miles in a year or make just one return flight from London to New York when each of these actions will result in the release of more than four times their *annual* entitlement of emissions for *all their fossil fuel uses*.

There can be only two outcomes of attempting to ignore or further procrastinate in this critical area of absolute confidence that all forms of life have an assured future. Both are wholly unacceptable. The first is that the majority of people – including future generations as well as the poor, mainly in developing countries – have to be denied their fair share of the 'global commons'. The second is to place faith in technology, such as CCS, the combined capture and safe storage of the gases released when burning coal, 'riding to the rescue'. It is clearly highly unlikely that technology can achieve this to a sufficient extent, at affordable cost and before the concentration of greenhouse gases is assuredly out of control. Nor is it realistic to place faith in divine intervention, a line of reasoning recently dismissed by the Archbishop of Canterbury.⁴

The only solution: contraction and convergence (C&C)

No country will be immune from the depredations of climate change and any effective strategy to limit these is wholly dependent on reaching an internationally binding agreement. It is obvious that such an agreement is essential for our survival as climate change is a global problem requiring a global solution. Governments can no longer place the national interest above the global interest – in my view a major cause of failure at the Bali and Copenhagen summits⁵ – and self-interest can no longer be allowed to be placed above the national interest. We also need to ensure that political decisions made on our behalf include consideration of our absolute obligation to take account of their effects on the generations succeeding us.⁶

The most impressive framework that accommodates these *desiderata* is C&C, first proposed by the Global

Commons Institute more than 15 years ago. It is founded on the fundamental principles of justice and equity and consists of contracting global emissions to a safe level while at the same time converging these to an equal per capita but tradable allocation across the world's population. Not surprisingly, it has attracted impressive international support including, in this country, from the Royal Commission on Environmental Pollution,⁷ the Synod of the Church of England and the current deputy PM in the Coalition Government.⁸

A tradable personal carbon allowance

It is very clear that as people cannot be relied upon voluntarily to meet their ecological responsibilities – the UK Government must intervene in order to require them to do so. Thus, the national manifestation of C&C has to be in the form of personal carbon rationing with everyone given the same annual personal carbon allowance (PCA). An analogy can be drawn here with the allocation of the limited supplies of some basic foods in the UK during and after the Second World War. In recognition of the prospect of sea routes for imports being closed off and therefore of food being in short supply, PM Chamberlain did not appeal to people to eat less, and no one suggested that scarcity should be dealt with by allowing the market to regulate demand, the clear consequence of which would have been poorer people being unable to afford this basic commodity of life – food. It was widely recognised that there could be no approach other than one based on a fair sharing out of this relatively finite commodity. I do not recall demonstrations in Trafalgar Square calling for the repeal of this legislation or for a more politically acceptable solution!

Promoting carbon-thrifty behaviour

The allowance will have to decrease steadily year-on-year in line with the negotiated international reductions agreed on the basis of the most up-to-date scientific knowledge of the safe level of concentrations of greenhouse gases in the atmosphere. In order to live more easily within their carbon allowance, people will be strongly motivated to reduce the extent of their fossil fuel-based activities. The incentive to do so will rise as the annual allowance is reduced year-on-year down to the level that must be reached urgently. As a consequence, demand must fall away for practices entailing the use of electricity generated by burning fossil fuels, energy-inefficient appliances, living and working in poorly insulated buildings, and taking up jobs, shopping and holidays in locations which entail much motorised travel and especially flying.

On the other hand, demand to improve the energy efficiency of the remaining activities and, where possible, to use energy derived from renewable sources will rise

4 Rowan Williams Archbishop of Canterbury *Ebor* lecture, York Minster 25 March 2009.

5 The 13th Conference of the Parties (COP-13) to the UNFCCC held in Bali 3–15 December 2007 and the 15th Conference of the Parties (COP-15) held in Copenhagen 7–19 December 2009.

6 See K Schneeberger 'Intergenerational equity; implementing the principle in mainstream decision-making' pp 20–9.

7 The Royal Commission on Environmental Pollution will close at the end of March 2011, having been axed by the government in July 2010 in the 'bonfire of the quangos'.

8 See list of endorsements on Global Commons Institute website <http://www.gci.org.uk>.

sharply. Likewise, the logical outcome will be greater demand for heavily-insulated homes, for the most efficient equipment available, for local patterns of activity and holidays that can be reached with the surrender of fewer transport units from the annual personal allowance. The business community will see the benefits of catering for the much-reduced demand other than for the most energy-efficient and least fossil fuel-using products and practices. By giving sufficient warning of the annual reduction in the future allowance, people will be strongly motivated to alter their homes, their transport arrangements and their general lifestyles at the least cost to themselves and in the way they choose.

The PCA will act as a parallel currency to real money – the cost of a tonne of carbon dioxide emissions will not be determined by economists attempting the near-impossible task of attaching a monetary value to the effects of adding to their concentration in the atmosphere. Instead the value will simply be a function of the availability of the surplus carbon units set against the demand for them on the open market – inevitably rising as the allowance is reduced each year. In this way, an ecologically-virtuous circle will be created: those who lead less energy-intensive lives and who invest in energy efficiency and renewable energy are unlikely to use all of their allowance. Thus, the energy thrifty will not only be spending less on fuel but will also be adding to their income by being able to sell their surplus units. Those who maintain high energy patterns of activity will have to buy these units, with the cost of doing so rising at such a rate as to act as a considerable deterrent. In effect, this ‘conservation gains principle’ will complement the conventional ‘polluter pays principle’ and act as a driver towards minimising the awesome impact of climate change far more effectively than by attempting to encourage individuals to follow green practices.

This issue cannot be allowed to develop into a game in which the political parties tacitly agree to play down its significance, as they did in the 2010 general election, or compete with each other by offering the electorate the least unpalatable future during the run-up to an election. Clearly, progress at a sufficient rate requires all-party consensus – not such a difficult challenge given the substantial consensus on the significance of climate change across the party political divide.

Quis custodiet?

It is totally unrealistic to expect many individuals or communities to act unilaterally when others are not doing so. Nor is it realistic to expect sufficient success to come in the wake of businesses ‘going it alone’ in adopting green practices – any more than it is of individuals doing so. The public through its actions is showing that it is addicted to energy-intensive lifestyles and providing little indication of its preparedness to give them up. To whom then should we look to be in the vanguard of pressing for speedy action on the critical nature of climate change? In a democracy, government is rightly seen as having both the prime responsibility and the political authority to serve and protect

the public interest. But it is evident that it must be far more effective than it has been to date.

Although it is very difficult for a government to act without the consent and cooperation of the majority of the population (although not impossible in times of national peril), the engagement of all sectors of society should be achievable. At the heart of the problem is the need, yet to be fulfilled, for the public to recognise the gravity of the situation. Only in this way can there be the realistic prospect in a democracy of the draconian measures that must be taken not to be dismissed as unacceptable.

However, there is a further aspect of the process that, tragically, has been left out to date. Given their moral authority, should we not expect our religious leaders to speak out to their congregations and to the wider world far more forcefully than they are at present on this central issue of our time – our responsibility to future generations in order to ensure that the planet’s condition into the foreseeable future is habitable? Are they not the ones best suited and potentially the most likely to be effective in persuading government to ‘grasp the nettle’? After all, if they decline to do so, which institutions do they consider better suited?

What can we do?

What is needed is a widespread programme of public education on the links between carbon emissions and our energy-profligate lifestyles so that it becomes obvious that there is no alternative to carbon rationing. We must learn very quickly to come to terms with the implications of the unpalatable evidence of ecological decline and therefore the significant behavioural change that must be achieved. The longer we procrastinate, the greater will be the likelihood of environmental degradation, social upheaval and economic chaos. At the personal level, it is self-evident that we will be far more motivated if we are aware of the extent of our personal contribution to the problem. To do so simply requires the completion of a carbon dioxide emissions self-audit and then to compare the annual total with the average of the world’s current annual per capita emissions of four tons, the average of the UK population of about 12 tonnes, and the average of well under one tonne that we must get down to as speedily as possible.

There can be no escape from four unarguable truths and the conclusions that can be drawn from them. First, insofar as we know that our own patterns of fossil fuel-dependent activities are making matters worse, we are all complicit to varying degrees. Secondly, ‘doing something’ can only be interpreted as representing meaningful progress if it will assuredly result in an essential target being met in time. Otherwise it can easily delay and make more difficult coming to terms with the inadequacy of the steps being taken. Thirdly, unfortunately, there is much in the pipeline stemming from our patterns of activity over the last 100 years or so which cannot now be avoided. Finally, all of us, without exception, have a responsibility to make the necessary changes to limit the damage, through changes in our personal and working lives. In particular, all professions must play their part.

The role of the professions

Within the length of an article for this journal and the specialist interest of its readership in environmental law, perhaps the focus is best directed to legal aspects. The justification for doing so stems from the observation that the profession's contribution is essential given the absolute need for the C&C and PCA strategies to be adopted at the international level and implemented at the national level, and for ensuring that the framing of legislation to that end is watertight.

However, there is a further domain of policy in which the legal profession must be involved but which has been largely overlooked to date, other than in the rhetoric surrounding the subject of this generation's responsibility to act as current 'stewards of the planet'. This can be illustrated by reference to two relevant instances in which the interests of countless generations succeeding us has not been integrated in a meaningful way in the determination of policy for the future.

The first instance was in the public consultation process in 2007 on the government's proposal for a third runway at London's Heathrow airport, the then secretary of state, Ruth Kelly, stated that it was her intention to consult 'as widely as possible' to ensure that all opinions and concerns could be expressed and taken into consideration before a final decision was reached. However, there can be little doubt that the two most substantial groups in the population who would be most likely to be adversely affected by its construction and use are people in developing countries and, even more so, future generations. It is clear that it would not be possible nor realistic to involve them in this process in a way that would reflect the damaging impact on them of facilitating more air travel which will inevitably use up more of the remaining limited capacity of the atmosphere to absorb greenhouse gas emissions. As a result, their voice could not be heard. Moreover, there was no obvious means whereby the legal process could ensure that this could be done by proxy.

The second example can be found in the policy domain of energy supply and energy security, where concern is increasingly being expressed on the subject of 'peak oil' – that we are using up the planet's reserves of this finite commodity at such a rate that there may be none left within 40 years or so. Again, it is quite clear from this perspective that the 'we' relates to the availability of oil for this and perhaps the next generation. What about the claims of the subsequent generations on this commodity? Nowhere is it apparent that these claims have been factored into the calculations. Yet, insofar as it is presumably every decision-maker's wish that life on earth should continue to be enjoyed for hundreds if not thousands of years into the future, is it not possible that they will have more important uses for this commodity than the way in which we are allocating it now?

All this suggests that the current early discussions on the proposal for an ombudsman and a cabinet minister with exclusive responsibility for this area of public policy should be speedily established to compensate for this

lamentable lacuna in current policy.⁹ The role of the legal profession in this regard is clear.

Conclusions

Given the urgency of the situation, the implications of failure to limit our individual emissions to a fair share dictated by the planet's capacity to absorb greenhouse gas emissions safely are dire. We cannot continue passing the buck between individuals, industry and government. We must stop pretending or implying through our decisions that the harm that we are causing is unavoidable or only marginal. The carbon dioxide emissions that we are adding to the atmosphere will affect the climate for well over 100 years. It is indefensible to make decisions that we know will prejudice the prospects for future generations enjoying life on earth.

We all have a crucial role in tackling climate change. But it is wishful thinking to believe that this can happen unless everyone is subject to a mandatory requirement dictated by the application of equity principles to do so. No one can be allowed to continue to evade responsibility for exceeding their fair share of contribution to achieving a much lower level of carbon emissions. Government is the only body which can achieve this by taking the immediate steps to reach an international agreement on the massive switch to very low-carbon lifestyles through the medium of carbon rationing.

The procrastination that is the outcome of investing more time and effort in further debate must stop. Future historians are very likely to view it as reflecting an outrageous dereliction of this generation's duty to act whilst there was still time. If the measuring template were in place, every day's delay could be seen to leave in its wake both the loss of biodiversity, quality of life and, in all likelihood, the loss of actual life on an alarming scale "starting in the developing world.

Responding to climate change is ultimately a moral choice. We can no longer proceed as if we have a right to turn a blind eye to the damage we are causing. What will we do in the decades ahead when justifiably challenged by our children and grandchildren on our woeful failure to have acted sufficiently? The accumulation of evidence on climate change is making it progressively unacceptable for us to attempt to excuse ourselves either by averring that 'we did not know' the consequences of our immoral behaviour or, in many respects even more reprehensibly, by just pleading guilty.

Our selfishness in not taking the steps that we know to be absolutely necessary is inexcusable. If we do not do so we are complicit in a process inevitably resulting in making life worse and worse for all life in the years ahead. It is incumbent on us all to be involved now for otherwise we are wittingly condoning insufficient action. In all conscience, we must not bequeath a dying planet to the next generation. We are heading inexorably in that direction.

⁹ Schneeberger (n 6).