

SIR JOHN HOUGHTON

Guest Editorial

An environmental imperative for the new Millennium

About 100 years ago, the French painter, Claude Monet, painted scenes of London through the smoggy atmosphere with its remarkable light effects. That was local pollution. What is relatively new and more worrying is global pollution – that is pollution emitted by people locally that has global effects. The first example to emerge in the 1980s was damage to the earth's ozone layer. International action was promptly taken through the Montreal Protocol to phase out the use of the chemicals responsible. Although full recovery of the ozone layer will now happen, it will take at least a century.

Another example is pollution that leads to global warming and climate change. Mainly as a result of the burning of fossil fuels (coal, oil and gas) the amount of carbon dioxide in the atmosphere has increased by over 30% since 1750 and, if substantial action is not taken to stem the increase, it will double its preindustrial value during the second half of the 21st century. As a result, the rate of warming of the climate is expected to be greater than at any time during the past 10,000 years – a rate so rapid that many ecosystems as well as humans will find it difficult, if not impossible, to adapt.

An illustration of the likely consequences of anthropogenic climate change is provided by the recent floods with the associated misery that came to many parts of England and Wales on an unprecedented scale during the latter half of the year 2000. This proved to be the wettest Autumn since records began nearly three hundred years ago. Of course, we know that climate by its very nature is highly variable and climate records are constantly being broken. Although, therefore, it is impossible to say whether the recent floods are linked to the growing emissions of greenhouse gases, they provide a timely reminder of our vulnerability to the sort of climate change which the climate science community is virtually certain is on its way.

The problem of climate change is just one of the consequences of our increasingly profligate use of the earth's resources. Other irreversible environmental degradation is also occurring, for instance rapid loss of tropical forests, loss of soil (10 to 20% over the last two decades) and the increasing problem of the disposal of waste arising from our excessive consumption.

Global problems need global solutions. Three widely accepted principles will govern the international agreements required. The first is the 'Precautionary Principle', already clearly embedded in the United Nations Framework Convention on Climate Change (FCCC) agreed at the 'Earth Summit' held in Rio do Janeiro in 1992. This states that the existence of uncer-

tainty should not preclude the taking of action of a kind that appropriately balances environmental sustainability against necessary development. The second principle is the 'Polluter Pays Principle', which implies the imposition of measures such as carbon taxes or carbon trading arrangements around a fixed ceiling of carbon emissions. The third is the 'Principle of Equity (both Intergenerational and International)' which is the most difficult to apply because it implies the eventual removal of the blatant inequities that exist now. The world's nations that have signed up to the FCCC have been struggling with the application of these principles. At the meeting in The Hague in November 2000, their failure to agree demonstrated the enormous difficulties in the way of taking even limited first steps towards necessary common action.

But addressing these pollution problems on a global scale is not just something for governments and politicians. It also presents a large and urgent challenge to both scientists and Christians.

First, to scientists, who carry an awesome responsibility to present to policy-makers and the public accurate, relevant and balanced information regarding what is known with reasonable certainty and what the uncertainties are. However, public confidence in scientists has recently been undermined by events such as the BSE crisis. The way governments employ scientists and use their advice has also been much under scrutiny, for instance in the Phillips Report on the BSE Inquiry. That and other reports (e.g. the 21st Report of the Royal Commission on Environmental Pollution on 'Setting Environmental Standards') have highlighted the need for much more openness and care in the process through which scientific advice is requested and used in policy decisions.

It is also increasingly recognised that the scientific community itself needs to take a leading and a disciplined role in the provision of the best advice. An outstanding example of scientists taking this role is that of the Intergovernmental Panel on Climate Change (IPCC), with which I have been privileged to be involved since its foundation over ten years ago. The IPCC has successfully involved many hundreds of scientists from many different countries in the preparation of reports concerning anthropogenic climate change, assessing the science, the likely impacts (including their economic and social consequences) and the technologies required to mitigate such change. Although there has been much debate and disagreement about the detail – that is an essential component of the scientific process – a widespread consensus has emerged from their work that has provided an essential basis for the FCCC and for the progress, however limited, that has been achieved in the subsequent international negotiations. So much so that the IPCC has been seen as a pattern that could be followed in other areas of science (e.g. that of genetic modification) which impinge strongly on matters of international policy or regulation.

There are many who suggest that a global problem such as climate change with its implications for the way humans behave is so great that it is beyond the capacity of the world community to achieve any workable solutions. That

such an attitude is widespread presents a large challenge to the Christian community and an opportunity for Christian leadership in a world in which effective leadership is sorely needed. Let me suggest four reasons why the Christian community should grasp this challenge and opportunity.

First, because the Creator has given us the responsibility to care for the earth and everything in it; it was God's first instruction to the man he had made (Gen. 1:28 & 2:15).

Secondly, because we were made in the image of God (Gen. 1:26) so as to reflect and represent the divine glory. Included in that picture is the idea of being creative like God, in particular in relation to the creation we have been given to look after. For instance, we can and should develop in appropriate ways the use of science and technology. It also means that, like God, we are concerned to promote justice, righteousness and equity and that like Jesus we are to accept our role of responsibility and leadership as humble servants (Mark 10:43-45) and not as dominant masters.

Thirdly, because it is an issue involving human will. In his Doomsday Letters on BBC Radio 4 in 1998 Sir Crispin Tickell commented 'We know what to do but lack the will to do it'. As St Paul expressed so strongly (Rom. 7. 18), the will to act is a spiritual problem. Not to care for creation is a sin of disobedience for which we need to repent and seek forgiveness from the Creator. Then the strength to act comes from the partnership that God offers through the activity of his Holy Spirit.

Fourthly, because the earth has a future to which God is fully committed, a commitment he could not have demonstrated more fully than by sending his Son to be part of creation. The incarnation of Jesus followed by his resurrection is the guarantee of that future – a 'new earth', transformed and 'the home of righteousness'(2 Pet. 3:13).

The developed western world is striving for continued economic growth and other material goals. As humans we desperately need goals of a moral and spiritual kind. In his Reith lecture (1999) the Prince of Wales emphasised the importance of the spiritual dimension – 'the sacred trust between mankind and our Creator under which we accept a duty of stewardship for the earth.' He also stressed the need for scientists to address more seriously the role of science and technology and their limitations in the exercise of stewardship. To strive for the goal of 'Caring for the Earth' would provide a way in for the churches to penetrate our materialistic culture and to show necessary leadership. We talk of New Year resolutions; what better resolution could begin a New Millennium?

Sir John Houghton is Co-chair of the Scientific Assessment of the Intergovernmental Panel on Climate Change and is on the Editorial Board of Science & Christian Belief.
