

Global Climate change: social and institutional options

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Introduction

In exploring the available social and institutional options over global climate change we need to address some fundamental questions about individual behaviour, social responsibility and 'globalisation'. Before doing this, however, it might be useful to establish some points of entry.

(1) Responses to the condition of the environment

We need to know more about how environmental problems are perceived. For example, in the case of climate change, policies to combat global warming, to be effective, require some understanding of the links between individual behaviour and climate (both atmospheric concentrations and emission levels). Much better public information and media attention are essential before people can assess their responsibility for what is happening and what they can do about it. There are a number of social mechanisms which enable us to distance ourselves from the full implications of our behaviour. These need to be looked at - how our 'underlying social commitments' help establish this distance - before behaviour can be changed.

(2) Responses to existing policies

We also need to know more about public responses to existing policies, many of which are not viewed as 'environmental'. Societies are not homogenous. Some ecological benefits carry distributive costs. How do people become enrolled in more sustainable practices like recycling and companies in green accounting? Pressure points exist where public opinion and values are more amenable to change. We should not forget that societies are reflexive systems; unlike inanimate objects, what we do reflects what we understand. More work needs to be done on sustainability indicators, to enable us to place normative goals into an operational context. Before going further, however, we need to examine global environmental change itself.

Global Environmental Change

Although it is usually conceded that values play a large part in the way we approach the environment, particularly the environment on our doorstep, the same concession is rarely made for the **global** environment. Global environmental change is often identified with physical processes "out there", such as ozone depletion, biodiversity losses and, particularly, global warming. The global environmental agenda has, to some extent, been established by the natural sciences, working within a positivist tradition (Newby 1993). The reports of the Intergovernmental Panel on Climate Change (IPCC) are a case in point. The authority of the IPCC's deliberations stems, to some extent, from its "scientific" objectivity, which influenced people like the former British Prime Minister, Mrs Thatcher, in lending it their support (Boehmer-Christiansen 1993).

This paper examines whether global environmental change is as free from value considerations as many people believe, or hope. It goes on to explore three clusters of issues which suggest that an alternative approach needs to be taken.

Global environmental change can be understood in terms of three sets of issues, each of which forces us to examine our part in its construction: human relations with "Nature", the need to live with increased uncertainty, and the extent to which our management of the environment reflects essentially human, rather than environmental, concerns. Each of these issues influences not merely the way we understand environmental problems, but also the way in which we can act to change them. They are also represented in the three major policy initiatives to have developed out of the Earth Summit in Rio de Janeiro in 1992: the Framework Climate Convention; the Biodiversity Convention and the institutions responsible for establishing more sustainable practices at the international level (particularly the Commission for Sustainable Development and the Global Environment Facility)(Grubb 1993). In the final part of this paper their relevance to the global climate agenda is considered.

Human Relations and "Nature"

The nineteenth century was a period in which the physical sciences saw spectacular progress, and most of the scientific disciplines assumed the identity they possess today. It was also a period, in Europe and North America, of enormous economic growth, and with economic progress came confidence. Looking back from the vantage point of the end of the twentieth century this belief in progress, and the confidence that went with it, are the hallmarks of modernism (Redclift 1993).

Relatively rapid industrialisation, and the growth of towns, were "global" phenomena because they served to incorporate other economic systems, and other cultures. Globalisation in the latter part of the twentieth century has served to underline these links, changing the international economic division of labour, using technology and communications to provide global images, as well as markets, and seeking to preserve the exotic and unfamiliar ("the other") whether through tourism or environmental campaigning, as items of consumption (Featherstone 1990, King 1991).

During the late nineteenth century, and early twentieth century, the opposition between nature and culture, made room for the social sciences as autonomous disciplines, they grew up in the interstices between the ethical concerns of the humanities and the positivism of the "hard" sciences. The insistence that human cultures were distinctive brought into question both the 'external' environmental determinism of some of the new sciences, and the "naturalism" of others, which saw human behaviour as the outcome of "internal" biological forces, equally beyond our control (Benton and Redclift 1994).

Both of the imperatives provided by nature, the external environment and the human biological condition, were found wanting. It is not an accident that many of the issues which proved (and still prove) difficult for the social sciences to confront, such as eugenics, racism and the measurement of intelligence, lie at the crossroads of biology and social conditioning. In this sense the nature/culture dichotomy was both the springboard for the social sciences' advance, and the irresolvable problem they confronted (Benton and Redclift 1994).

Within the social sciences the discipline which benefited most from its identification with human purposes in the nineteenth and twentieth centuries was economics. Neo-Classical economics grew out of the increasing confidence of industrial capitalism with its own success, and its refinements were linked to the problems faced by twentieth century industrial economies (welfare economics, Keynesianism, development economics). Many of the issues which will confront us as we approach the twenty first century - the relationship between the production of goods and services and the satisfaction of our needs, as well as the social and environmental consequences of their production - elude mainstream economists. Many of the underlying assumptions which influenced economic reasoning, such as the effects of scarcity, now appear much less important than issues like the environmental consequences of economic behaviour, which played little part (Yearley 1991).

In the view of many Neo-Classical economists the significance of scarcity could be grasped through concepts like the economic costs of resource acquisition. Pollution and the proliferation of so-called "externalities" can be seen as manifestations of profligacy, rather than scarcity, and our inability to manage its consequences. As our dependence on economic techniques increases, the need for more inclusive systems of thought appears more urgent. We are forced back, inevitably, to consider our relations with nature, from which resources derive.

Our increasing knowledge of biological systems has not enabled us to utilise them sustainably, and this is due in some part to the divorce which was effected in the nineteenth century between our understanding of the laws of nature and those of "man". We are faced by an interesting paradox. On the one hand the degradation of nature has called into question some of the values which contributed to the Promethean successes of the past. The rights of non-human species, and the primary obligations which we have to nature, are now regarded as politically important, and not merely by Deep Ecologists. At the same time, many of those who espouse environmental concerns refuse to acknowledge that it is the way that human societies are organised, and structured, which determines environmental problems.

What are the values generated from the management of the environment today? They clearly reflect the interface between society and nature, and the difficulty we experience in dealing with this interface. Environmental management itself suggests a mastery of nature, and an ability to control the environmental consequences of our behaviour. The growing

importance of scientific knowledge, and "rationality" as the coda for this knowledge, together with our institutionalised behaviour and social commitments, has served to increase the appeal of technical solutions to human-induced problems. To provide solutions to environmental problems, however, we need look no further than the human societies which produce them; something which we seldom do (Beck 1992).

Living With Uncertainty: the Importance of Time and Space

Another consequence of the growing confidence of science has been the expectation of certainty. With the development of scientific techniques and methods the status of scientific prediction rose, and with it the status of scientists. Predicting environmental consequences has proved to be difficult, however, partly because of the complexity of environmental systems, and partly because of the unpredictability of human actions. Science is apparently successful in offering predictions which reduce uncertainty. However, science also collapses time and space, and increases the flow of knowledge and information available. This, in turn, tends to increase uncertainty, and to fuel speculation about the basis on which decisions have been taken. We need to give close attention to the factors have buttressed the claims of science to reduce uncertainty (Brown 1989).

First, many environmental problems involve high levels of human anxiety, associated with risks to human health, which appear to increase with the expansion of our knowledge. Second, since environmental science is an essential part of the solution to environmental problems, it follows that improved regulation, and greater technical expertise in addressing environmental problems, also serve to demonstrate the shortcomings in the application of science (Read 1994).

Global environmental problems, in particular, such as ozone depletion and global warming, are not only complex in terms of their chemistry or biology, they are also apparently inaccessible to technical "fixes". Unlike the administration of antibiotics, or the inoculation of patients against the risk of contracting life-threatening diseases, changes in behaviour induced by environmental awareness, such as the purchase of aerosols free from CFCs, or the use of lead-free petrol, do not ensure environmental safety. We know more but we are able to do less.

In addition, there is evidence from the growth of campaigning groups, around environmental issues, that the gap between "lay" perceptions of the environment and "expert" opinion, is actually widening (Yearley 1991). Faced with a barrage of increasingly complicated, and contradictory, information about environmental risks, the layperson is likely to question the authority of science, and the confidence politicians place in scientists. It soon becomes clear that the "critical thresholds" which are endorsed by political leaders and expert witnesses, are themselves political compromises, framed to manage public apprehension. The more that the official environmental discourse may seek to dampen public apprehensions, the more it becomes clear that "certainty" does not prevail.

Public anxiety is only part of the picture. If the environment exists in the specialist knowledge that we possess about it, there is less for the "non-expert" to regard as their area of competence. This effects the "ownership" of environmental issues. Research from developing countries has shown that the growth of specialist knowledge is related to the

growth of non-specialist "ignorance", and this observation is equally appropriate in the North. Doubts about the degrees of certainty associated with formal scientific knowledge are matched by alternative, holistic models of human relations with nature, which interpret "facts" differently, and which seek new ways of understanding, rather than an enlarged databank of information. It is clear that different values are held by different groups of people. Some groups, at least, are using the opportunity presented by scientific uncertainty to re-evaluate their values (Thompson *et al.* 1986).

The two dimensions of uncertainty which deserve particular attention are the spatial and the temporal. We are accustomed to make most decisions on the basis of present time, and any future consequences play a smaller part in our calculations than immediate consequences. However, environmental choices often bear little relationship to the decision-making and dislocation of everyday life. They require an imaginative leap into the future, to the next generation or subsequent generations. The timescale of ecological processes, particularly those operating at the global level, makes it imperative that we attach weight to the future, and that what economists call the rates of discount reflect this importance.

Many environmental changes are also "systemic" in the sense that they can only really be understood through the way that systems change. Biodiversity is a case in point, since threats to individual species carry serious implications for ecosystems as a whole. The loss of one plant variety from a local ecosystem can jeopardise the survival of animal populations which are dependent upon it. Since the timescale of ecological processes bears so little relationship to everyday decision-making, it is important that we attach value to the loss of flexibility and variety in future environments.

The spatial dimensions of the environment are also important in any consideration of values. The environmental consequences of human activity are often experienced at several removes, not only in time but in space. The economic development of the industrialised countries, their diets and lifestyles, have been responsible for transforming the environments of developing countries located thousands of miles away. The "ecological footprints" left by industrialisation, and consumer wants in the North, are not easily erased. This serves as a reminder that while in the North we tend to regard the protection of nature as a fundamental ingredient of environmentalism, in the developing countries environmental issues often present themselves in terms of protection from nature. Perhaps we need to consider whether the driving forces behind global environmental change, including industrial growth and consumerism, increase the environmental security of people in the South or seriously threaten it?

The values generated in our society carry implications for the environment that are only dimly perceived most of the time. Consumerism implies a commitment to aspiration, to "improve" one's lifestyle. A desire to own the fruits of technoscience is apparently within everyone's grasp. At the same time we are concerned should the environmental costs of progress arrive on our doorstep. The response of local communities to environmental problems - "Not In My Back Yard" (NIMBY) - is a product of contemporary lifestyles in the industrialised countries, every bit as much as concern about protecting the whale or tropical forests.

The process through which we are removed from the consequences of our actions, sometimes called "distanciation", is illustrated in a number of ways. Among them is the way

the enhanced greenhouse effect, through its impact on climate, is likely to increase perturbations in weather conditions, especially in the tropics, with increased occurrence of freak storms, drought and sea-level rise. The measures necessary to avert these risks are not difficult to determine, but the political will to act confronts widespread apathy and indifference.

Economic Values and Environmental Management

Neo-Classical economics developed through making a number of assumptions about the environment. Natural resources such as water, soil and clean air, were often depicted as "free goods", meaning that they were available freely; they did not involve a charge. However, it is clear that environmental "goods" are qualitatively different, in significant ways, from goods for which we do pay a charge. Clean water and air, unpolluted soils, are not available "freely" in nature once human beings have had a hand in economic development. Environmental economics has been forced to consider the costs of cleaning up the environment, and of conserving natural resources to ensure their supply (Winpenny 1991).

Ecological economics is also concerned with wider questions which have eluded most economists since the nineteenth century. Attempts are being made to distinguish between "wants" and "needs", and between the way our needs are satisfied, for example through more consumer goods, and the needs themselves. The conditions under which goods and services are produced is a key question. At the same time the social and ecological consequences of their production is a concern to Green economists. Many argue that we should develop methodologies for arriving at "utilisation values", that is, the value of goods and services throughout their lifetime. Such values would include the cost of waste disposal, the benefits from reuse or recycling, and the pollution or resource degradation associated with the use of raw materials in their manufacture.

Within environmental economics there are broadly three camps. The first camp argues that there is nothing to prevent us from placing economic value on the environment. Using prices and market instruments we can assign the real costs of environmental degradation. What is required is further refinement of methodologies such as contingent valuation, which enable us to approximate individual preferences for environmental goods and services. In the view of these economists the "logic" of economic rationality can be used to manage the "randomness" of nature (Pearce 1993).

A second camp takes a very different view. They argue that we cannot place a value on the environment, like that for human-made goods. Natural capital, in their view, is qualitatively different from human-made capital, and should be treated as qualitatively different. Following Oscar Wilde's famous aphorism, we are in danger of knowing "...the price of everything and the value of nothing". In the view of radical ecologists the logic of nature cannot be geared to the randomness of the market. As human beings we are part of nature, and cannot subject nature to our laws as we are subjected to natural laws (Ekins and Max Neef 1992).

Between these apparently irreconcilable positions are others which probably attract considerably more support than is immediately evident. Some institutional economists like Jacobs argue that we can, and should, develop economic methodologies which, in effect,

"value" nature (Jacobs 1991). However, we should also recognise that Neo-Classical economics is itself a social construction, and its development reflects the preoccupations of industrial capitalism. We can develop methodological tools which place more, or less, emphasis on the importance of market forces. If we wish we can propose guidelines, indicators for "sustainability planning", which allow radical shifts in economic policy and thinking.

Unlike some radical political ecologists, people in this third camp, propose that we intervene and regulate the environment, essentially to meet human purposes rather than follow imperatives in nature itself. They also agree that we will all be the richer if we examine the underlying social commitments which govern our lives, the maintenance of our present "lifestyles" and patterns of consumption. However, unlike Deep Ecologists, for example, mainstream environmental economists believe changes in human behaviour can be induced through policy instruments and interventions.

It is also important to distinguish between analytical positions like those found within environmental economics or the sociology of science, and the value commitments of a society. To some extent analytical positions can play the part of, or even displace, other systems of values. We have only to reflect on the central role which Neo-Liberal economics has attributed to the "choices" of individuals in the market-place, or what Huber has called "ecological modernisation", through which business has sought to incorporate environmental costs in its range of products and services (Mol and Spaargaren 1990).

These are examples of the close relationship between the values of the wider society and those that govern environmental questions. It would be surprising if core values such as "individualism", "private property", "choice" and "independence", the political values which govern everyday actions and desires, were unrelated to the way in which we interact with our environment. However, it is much more difficult to specify the nature of this interaction, the variables at work, and the lines of causation.

These positions themselves reflect a modernist discourse that still sees the human subject as universal and all knowing (Redclift 1993). They do not address the fallibility of human beings, most notably in our inability to reflect upon the increased knowledge we possess about the wider universe. If science is continually widening the frontiers of what we know, it is also revealing the extent of what we do not know. We are, in fact, seeking to interpret what we do not know in terms of what we know. At the very least this is a hazardous procedure.

Global environmental agreements and human values

The international agreements which were signed at the Earth Summit in 1992 give expression to environmental values, many of them widely shared. At the same time these agreements, if they are to succeed in changing the way we manage our resources globally, require that we pay more than lip-service to the values we espouse. The institutional apparatus established at Rio de Janeiro, as much as the agreements themselves, provides evidence of the difficulty in providing a consensus for global environmental management (Thomas 1993).

It is clear that values are implicit in what we take for granted from natural systems, as well as what we propose to do to protect these systems. At the same time, the process of economic development enshrines a different set of values. The Brundtland Commission, which reported in 1987, sought to enlarge this debate, and to make our value preferences more explicit (Brundtland 1987). Unlike the reports of the I.P.C.C. it did not purport to be a value-free document, but freely admitted to political objectives, many of which were subsequently incorporated in Agenda Twenty One. The idea of "sustainable development" as a way of informing policy cannot be divorced from the attempt to integrate quite different systems of values.

Much of the confusion accompanying the discussion of sustainable development, and the drawing up of international agreements, stems from the relationship between our values and our knowledge about global environmental problems. The scientific controversy accompanying global climate change, and the deliberations of the I.P.C.C., has suggested that increasing our knowledge about future climate change, and its impacts, will enable us to adopt more appropriate values, emphasising long-run sustainability over short-run economic gain. However, the evidence for this assumption is weak. Rather, it might be asserted that until we address the environmental problems associated with our current values, there is little likelihood that we will be able to make much use of the knowledge which is accumulating about the global environment.

As Tickell argues, "... our ignorance of species and ecosystems is profound, not only of present ecosystems and species, but of their future uses and services. It is an understatement to refer to this level of ignorance as mere uncertainty" (Tickell 1994, 4).

The major provisions of the Framework Convention on Climate change mark an important watershed in international agreements to protect the environment. The Convention established the principle that action to start addressing the problems of climate change should not wait upon the full resolution of scientific uncertainties. It also asserts that developed countries should take the lead in introducing measures to reduce the threat of global warming. Finally, it endorses the idea that developed countries should compensate the developing countries for any additional costs that they might incur in taking measures under the Convention.

Superficially, at least, the goal of sustainable development is one publicly espoused by most governments. Most of the governments in the North have signed, and in some cases ratified, agreements which endorse a set of principles and values that place global sustainability above vested interests and short-term economic advantage. However, at a more profound level there is little agreement about the "values" which need to inform sustainable development. The "natural services" provided by the environment are acknowledged, but the assumption that they will continue to be provided, is still made. Real environmental costs and benefits are scarcely acknowledged in the day-to-day economic management that determines their use.

Similarly, rather than using the precautionary principle to help provide for more flexible responses to uncertainty, most policy is still formulated against unsustainable assumptions, about population, military expenditure and economic growth. Global inequalities, particularly between North and South, are part of the "taken-for-granted" assumptions behind international agreements in "non-environmental" areas such as the liberalisation of trade. Inequalities within developing countries, we are regularly told, are part of the price that such countries pay for the absence of "development". However, evidence that economic growth has particularly

adverse effects on the Newly Industrialising Countries' environments, should lead us to question whether successes in market economies really are a prerequisite for better environmental management in these countries.

This paper has argued that the options available to us over global climate change need to be placed in their context; our societies. Environmental consciousness is indelibly linked to social and political unease; it does not spring from the physical 'environment' alone. It follows that measures to combat possible climate change need to be located within socially meaningful categories, and we need to develop a better understanding of the reasons people assume social responsibilities towards the environment in the first place.

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