

PRIME MINISTER

## ENVIRONMENT

You commented on the attached letter, which suggests that we should propose a Convention on Climate Change, that scientists were already so tied up in meetings that they no longer had time to do the science.

I am sure that this is a valid point. But it seems to me that what is proposed in the letter is basically a diplomatic/political exercise, creating a framework for future international action. I do not think it would greatly involve scientists, at least in the early stages. The main point is to wrest the initiative away from the interventionists (ie the Rocard proposal) and strengthen the role of existing institutions. If we are first in the field with well worked out proposals, we shall be able to pre-empt others.

Agree to pursue it on this basis?

*On this very limited basis*

*C.D.P.*

*Yes not*

CHARLES POWELL

2 May 1989



l'Alliance mondiale pour la nature  
The World Conservation Union

Secrétariat de l'UICN  
UICN Headquarters

Dominic Morris, Esq.  
10 Downing Street  
London SW1A 2AA  
Great Britain



1 May 1989

Dear Dominic,

Global Climatic Change: Seminar at Downing Street

As promised, I have now dictated my summing up, from my notes and view graphs. I will not promise that it is word for word what I exactly said, and I have left the various humorous or semi-humorous asides out. I have also avoided attribution, except at one or two places.

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I hope this is helpful and would end by saying that I myself very much enjoyed the Seminar, and was pleased by its informal, critical and constructive tone. I feel that it is very much an asset that the United Kingdom can put on this kind of meeting, and I shall be delighted if there are opportunities to contribute again to this kind of event!

Kind regards.

Yours sincerely,

*Estelle P. Vigor*

PP • Martin W. Holdgate  
Director General

Enclosure

Dictated by Dr Holdgate; signed in his absence by his secretary.



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The concentrations of the greenhouse gases have fluctuated substantially in the past, as a result of natural processes, but are now increasing through human agency. Carbon dioxide has the most significant effect on radiation balance, accounting for about half the calculated greenhouse effect, with methane accounting for 18 percent, CFCs for 14 percent, and nitrous oxide for 6 percent. If CFCs are eliminated, the relative importance of carbon dioxide will increase.

Eighty percent of the carbon dioxide added to the atmosphere as the result of human activities comes from the burning of fossil fuels, and 20 percent from deforestation, especially in the tropics. While therefore the latter process is important on a world scale, halting tropical deforestation will clearly not cure the problem.

At present the developed countries are the dominant sources of carbon dioxide. However the rapid growth in energy generation in the developing world means that they are likely to catch up the present industrialized countries in about 30 years.

### Implications

The Seminar demonstrated that there is a near consensus that these increases in greenhouse gases will raise the mean temperature of the earth. An increase of approximately  $0.5^{\circ}\text{C}$  has occurred over the past century, and this fits the hypothesis that the greenhouse effect has already begun although it does not prove it. The evidence of rapid ice retreat in various parts of the world including the Antarctic peninsula also fits but does not establish the hypothesis.

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exposed to at any time in the past 150,000 years, and this takes us into new territory when we seek to deduce how these systems will respond. Another feature of the phenomenon is the existence of substantial lags between cause and effect, so that today's impacts commit us to long drawn-out changes, lasting decades or even centuries before mean temperature and global sea level come to equilibrium.

There is some indication that global sea level has risen by of the order of 8 to 10 cm in the past century, and it is expected that there will be a significant and rapid increase in future, perhaps of the order of 10 and 20 cm by 2030 AD. This increase is expected to arise especially from the thermal expansion of the warmer seas and the melting of mountain glaciers, but its magnitude in the longer term depends critically on the response of the polar ice sheets. Again, the combination of rate and duration is critical. The rapid rise in sea level, prolonged over several thousands of years at the time of the melting of the ice sheets from the last glaciation exceeded the capacity of response of many coral islands and has led to well over a hundred known "drowned" atolls. However if the changes induced by current human actions last only for a century or so, the majority of coral reef systems should be able to keep up.

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#### Factors to be considered

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#### Social impacts

It is evident that the social impacts of these changes could be large. The Seminar was told of one calculation of an increased expenditure required on the east coast of the United Kingdom of £5 billion, even if some areas were abandoned to the sea. Similarly, even if United Kingdom agriculture had the resources and flexibility to adjust to the changes, over the world as a whole there was likely to be substantial stress on the food-producing system. Many crop species were currently grown near the limits of their range, and changes in temperature and water availability would have a major impact in many regions, especially of the developing world.

Similarly, the impacts on natural environmental systems could be substantial. A 1°C rise in average temperature, in crude terms, could be compensated for by a movement of around 100 to 150 km towards the Poles or 150 m vertically, assuming that soil and other habitat conditions were comparable over these distances which they are unlikely to be. Evidence was presented that forest trees were unlikely to be able to respond by moving more than 10 km per decade, so that if in fact the limits of their growth were being shifted 50 km a decade, as some scenarios indicated, they would be in danger of being left behind, with consequent changes in ecological systems.

The Seminar was told of the substantial scientific effort in progress to reduce these uncertainties. However it was stated that there were only about 200 real experts capable of making a fundamental contribution to understanding. Given the existence of a much larger multitude of people making pronouncements in this field, the noise:signal ratio can clearly be expected to be massive and potentially misleading of public opinion. A plea was made for a reduction in the number of conferences debating the issue, while the competent scientists concentrated their efforts on amassing the knowledge that would make such conferences meaningful.

#### The potential for action

From the evidence presented to the Seminar, it is clear that exceptional measures would be required if the system was to be brought to stability with less than a doubling of carbon dioxide above pre-industrial levels.

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Against this background, a policy of waiting and seeing clearly emerged as unwise, even if there were uncertainties in the situation. It would be prudent to plan on the basis of the reality of the phenomenon and the desirability of social action to limit its impacts and eventually reverse it.

It was suggested that the response might come under the heading of "four As":

avoidance;  
adaptation;  
abatement;  
assistance.

These needed to be based on national action, but within an international context.

The analysis presented by the Energy Technology Support Unit, and valid for other OECD countries as well as the United Kingdom, demonstrated that it would be technically feasible to halve carbon dioxide emissions by the year 2020. Some eight alternative types of action were presented, ranging through reafforestation and the generation of energy from waste through increases in the efficiency with which fossil fuel was burned, more effective energy use in transport, carbon dioxide removal at power stations, the development of renewable energy sources, the expansion of nuclear power and the substitution of alternative fossil fuels to coal.

Of these, the most promising in technical terms was clearly the increase in energy efficiency, but it is difficult in practice because it demands the disaggregated action by a vast number of consumers, and is hampered by the slow turnover of the building stock within which much conservation has to be concentrated. The development of nuclear power is a second most promising contribution, provided that public opinion can be influenced to accept it. Fuel substitution could make a contribution in theory, but it was pointed out in discussion that there were limited amounts of natural gas that could be substituted for coal. Certain measures, such as reafforestation and the use of wastes as fuel, only contributed at the margins but would nonetheless be popular with the public and worth pursuing for that reason. Taking all the options together it is clear that it is technically possible to achieve the abatement target, if practical policies can be established to deliver the various savings.

#### How to achieve these savings

One key to the achievement of policies to limit carbon dioxide emissions clearly lies in the field of public understanding. Public opinion needs to be influenced first so that consumers vigorously pursue goals of energy conservation. Public opinion likewise needs to be influenced if they are to accept a future nuclear power strategy that is safe and disposes of its wastes in an environmentally acceptable way. Public understanding could also play a positive part in the creation of new markets for energy efficient products, like more efficient cars.

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A second key to the future was the establishment of a clear strategy with appropriate incentives, which might include a mix of fiscal measures, pricing policies, taxation incentives and technical targets.

The establishment of such a strategy and such targets was important because they provided signals to industry and assuming that the strategy was sustained, a clear context for the substantial industrial investment that would be needed. Given a clarity in the definition of strategy, and an effective approach to public information, market opportunities could be created, both within the United Kingdom and internationally, so that the situation should not be looked on in industrial terms as wholly negative: it provided opportunities as well as constraints.

A different approach was needed however between developed and developing countries. Some of the measures listed, such for example as a massive expansion of nuclear energy generation, would not be practicable in the developing world. There was nonetheless great scope, through the provision of appropriate assistance, for a more energy-efficient growth pattern in the developing countries than they are currently pursuing, and it would be important to provide such assistance.

#### The world context

This brought the Seminar toward a consideration of the international field. It is clear that the greenhouse phenomenon is a truly global one, contributed to by the actions of all nations and affecting all regions of the globe. It is accordingly both essential and inevitable that the actions taken in response must be concerted internationally.

The nations of the world should not be grouped arbitrarily into two blocks: developed and developing (or "north" and "south"). They form a continuous spectrum in terms of their industrialization and economic strength. They display widely varying population pressures, which however constitute one of the most serious impediments to effective development, pose grave threats to environmental stability in many parts of the world, and could hamper the achievement of any strategies to stop climatic perturbation. Industrial growth is an imperative for developing countries, and in itself, by raising standards of living, provides the best hope of bringing about population stabilization. The developing countries are for the most part committed to paths of industrialization, and will not take kindly to being requested to adopt policies that inhibit it, especially in a circumstance where some 20 percent of the world's population is using over 100% of the safe dispersal capacity of the atmosphere! They are likely to look to the wealthy industrialized countries to take the measures that will release atmospheric capacity to disperse the carbon dioxide emitted from their growing commercial energy sector.

There is a major economic problem, at the world scale, because whereas a dear energy policy might be advantageous in promoting energy conservation in the developed countries, it would severely inhibit the process of industrialization and development in the third world.

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While these were intractable problems, it was clear that there would be a considerable need for assistance to the developing countries in order to establish patterns of activity which would be of global benefit. One area for such assistance lay in land use. It would be valuable to demonstrate that the sustainable use of forests, and stable systems of agroforestry are economically more beneficial to many tropical countries than the clear-felling of their forests, replacing them by impoverished pastures and erosion. Aid should also allow longer-term sustainable management patterns to be substituted for short-term destructive use of natural resources which could not readily be renewed. Debt for nature swaps could make a significant contribution in these circumstances.

Two other areas of action that might be considered involved adapting the global commercial system to favour the products derived from sustainable land-use policies in the third world, and assistance to help transfer sound modern technology (like, for example, the substitutes for chlorofluorocarbon that many countries have made clear at the recent London Conference they would like to introduce if they were helped to bear the costs of doing so).

Cooperation and coordination would also be vital between nations. One area for such cooperation lay in science. There is already a substantial international scientific research effort, which is cooperating in the use of satellite and other environmental data and the construction of models. The Intergovernmental Panel on Climatic Change is one component of that cooperation, and others are to be found within the International Council of Scientific Unions.

Another area for cooperation lies in the development of an international Convention, providing a framework for the coordinated action the world will require. Such a Framework Convention would be likely to include a commitment to cooperate in research, in the evaluation of results, in the construction and interpretation of models and in monitoring. It would be able to lay down a code of conduct at international level. It might include some provisions for international assistance. It would also contain commitments to discuss and eventually adopt protocols on particular areas of action like those agreed under the Montreal Protocol for reduction of chlorofluorocarbons (this protocol could equally well have been negotiated under a Convention on the regulation of human interference with the climate).

A third area for international action was institutional. There is already a substantial global institutional effort, in the United Nations and elsewhere, which needs to be made more coherent and effective.

It was suggested that this institutional machinery might include the following components:

- a) a new role for the United Nations Security Council, which could be required periodically to review major environmental issues of global concern, which undoubtedly do increasingly threaten the peace and stability of nations;

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- b) a coherent role for the UN Agencies Coordinating Committee (ACC) which does bring the major UN agencies together, under the aegis of the UN Environment Programme, but at the present time lacks the power to force the conjunction of plans or the adjustment of budgets to mutually agreed ends;
- c) a revitalized UN Environment Programme, potentially as the lead agency for the UN in these matters (although it will always be hard for UNEP to undertake the leadership of political discussions in New York when it is based in Nairobi);
- d) an enduring role for the international scientific effort, for example by prolonging the Intergovernmental Panel on Climatic Change as a committee with a defined role in the UN system.

A further international institutional measure that could be considered is the establishment of a fund for environmental problems, to be disbursed via the multilateral development banks, including the World Bank. Such banks could enter into commercial agreements for the rental of areas for sustainable management, payments being made when monitoring showed that the agreed policies were in fact being carried out.

Finally, it was suggested that there was a role in the institutional machinery for non-governmental organizations. Much of international science has been coordinated through the non-governmental machinery of ICSU. The International Union for Conservation of Nature and Natural Resources linked in membership 62 States, 130 government agencies and over 300 non-governmental organizations including all the major conservation bodies in the world, and this could provide a valuable forum for stimulating action which reinforced that agreed by Governments.

### Conclusions

The Seminar demonstrated a virtually universal acceptance of the need to treat human perturbation of the climate, through the release of greenhouse gases, as a real threat to many socially important actions.

It was concluded that it was right to evaluate policies that could lead to the limitation of the impacts of this phenomenon, and its ultimate stabilization, in the most cost effective fashion, and this should be done in parallel with science that would improve understanding of the phenomenon and especially give a better basis for the regional assessment of its impacts.

It was agreed that there were real opportunities in this area for the United Kingdom, in partnership with scientists and policy-makers in other countries. In particular, the United Kingdom could contribute significantly to science, it could develop its own energy policies and other domestic activities so as to be ahead of the problem, on the basis that prevention was commonly better and cheaper than cure. It could contribute through helping to form public opinion and to create new demands and markets for products that would improve energy efficiency and reduce greenhouse gas emission. It could contribute in international policies, through aid, debt management, and the development of an

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appropriate Framework Convention. Above all, it could contribute, with other like-minded nations, in promoting the development of an international institutional machinery that worked.

Martin W. Holdgate  
1 May 1989  
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### Implications

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#### The world context

This brought the Seminar toward a consideration of the international field. It is clear that the greenhouse phenomenon is a truly global one, contributed to by the actions of all nations and affecting all regions of the globe. It is accordingly both essential and inevitable that the actions taken in response must be concerted internationally.

The nations of the world should not be grouped arbitrarily into two blocks: developed and developing (or "north" and "south"). They form a continuous spectrum in terms of their industrialization and economic strength. They display widely varying population pressures, which however constitute one of the most serious impediments to effective development, pose grave threats to environmental stability in many parts of the world, and could hamper the achievement of any strategies to stop climatic perturbation. Industrial growth is an imperative for developing countries, and in itself, by raising standards of living, provides the best hope of bringing about population stabilization. The developing countries are for the most part committed to paths of industrialization, and will not take kindly to being requested to adopt policies that inhibit it, especially in a circumstance where some 20 percent of the world's population is using over 100% of the safe dispersal capacity of the atmosphere! They are likely to look to the wealthy industrialized countries to take the measures that will release atmospheric capacity to disperse the carbon dioxide emitted from their growing commercial energy sector.

There is a major economic problem, at the world scale, because whereas a dear energy policy might be advantageous in promoting energy conservation in the developed countries, it would severely inhibit the process of industrialization and development in the third world.

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While these were intractable problems, it was clear that there would be a considerable need for assistance to the developing countries in order to establish patterns of activity which would be of global benefit. One area for such assistance lay in land use. It would be valuable to demonstrate that the sustainable use of forests, and stable systems of agroforestry are economically more beneficial to many tropical countries than the clear-felling of their forests, replacing them by impoverished pastures and erosion. Aid should also allow longer-term sustainable management patterns to be substituted for short-term destructive use of natural resources which could not readily be renewed. Debt for nature swaps could make a significant contribution in these circumstances.

Two other areas of action that might be considered involved adapting the global commercial system to favour the products derived from sustainable land-use policies in the third world, and assistance to help transfer sound modern technology (like, for example, the substitutes for chlorofluorocarbon that many countries have made clear at the recent London Conference they would like to introduce if they were helped to bear the costs of doing so).

Cooperation and coordination would also be vital between nations. One area for such cooperation lay in science. There is already a substantial international scientific research effort, which is cooperating in the use of satellite and other environmental data and the construction of models. The Intergovernmental Panel on Climatic Change is one component of that cooperation, and others are to be found within the International Council of Scientific Unions.

Another area for cooperation lies in the development of an international Convention, providing a framework for the coordinated action the world will require. Such a Framework Convention would be likely to include a commitment to cooperate in research, in the evaluation of results, in the construction and interpretation of models and in monitoring. It would be able to lay down a code of conduct at international level. It might include some provisions for international assistance. It would also contain commitments to discuss and eventually adopt protocols on particular areas of action like those agreed under the Montreal Protocol for reduction of chlorofluorocarbons (this protocol could equally well have been negotiated under a Convention on the regulation of human interference with the climate).

A third area for international action was institutional. There is already a substantial global institutional effort, in the United Nations and elsewhere, which needs to be made more coherent and effective.

It was suggested that this institutional machinery might include the following components:

- a) a new role for the United Nations Security Council, which could be required periodically to review major environmental issues of global concern, which undoubtedly do increasingly threaten the peace and stability of nations;

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- b) a coherent role for the UN Agencies Coordinating Committee (ACC) which does bring the major UN agencies together, under the aegis of the UN Environment Programme, but at the present time lacks the power to force the conjunction of plans or the adjustment of budgets to mutually agreed ends;
- c) a revitalized UN Environment Programme, potentially as the lead agency for the UN in these matters (although it will always be hard for UNEP to undertake the leadership of political discussions in New York when it is based in Nairobi);
- d) an enduring role for the international scientific effort, for example by prolonging the Intergovernmental Panel on Climatic Change as a committee with a defined role in the UN system.

A further international institutional measure that could be considered is the establishment of a fund for environmental problems, to be disbursed via the multilateral development banks, including the World Bank. Such banks could enter into commercial agreements for the rental of areas for sustainable management, payments being made when monitoring showed that the agreed policies were in fact being carried out.

Finally, it was suggested that there was a role in the institutional machinery for non-governmental organizations. Much of international science has been coordinated through the non-governmental machinery of ICSU. The International Union for Conservation of Nature and Natural Resources linked in membership 62 States, 130 government agencies and over 300 non-governmental organizations including all the major conservation bodies in the world, and this could provide a valuable forum for stimulating action which reinforced that agreed by Governments.

### Conclusions

The Seminar demonstrated a virtually universal acceptance of the need to treat human perturbation of the climate, through the release of greenhouse gases, as a real threat to many socially important actions.

It was concluded that it was right to evaluate policies that could lead to the limitation of the impacts of this phenomenon, and its ultimate stabilization, in the most cost effective fashion, and this should be done in parallel with science that would improve understanding of the phenomenon and especially give a better basis for the regional assessment of its impacts.

It was agreed that there were real opportunities in this area for the United Kingdom, in partnership with scientists and policy-makers in other countries. In particular, the United Kingdom could contribute significantly to science, it could develop its own energy policies and other domestic activities so as to be ahead of the problem, on the basis that prevention was commonly better and cheaper than cure. It could contribute through helping to form public opinion and to create new demands and markets for products that would improve energy efficiency and reduce greenhouse gas emission. It could contribute in international policies, through aid, debt management, and the development of an

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appropriate Framework Convention. Above all, it could contribute, with other like-minded nations, in promoting the development of an international institutional machinery that worked.

Martin W. Holdgate  
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