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From the Minister

24 February 1989

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In Nicholas,

OZONE CONFERENCE : ASSISTING DEVELOPING COUNTRIES

Thank you for your letter of 21 February to Geoffrey Howe, to which I am replying in his absence overseas.

I very much agree that the participation of developing countries is essential if international initiatives to protect the global environment are to succeed. As you rightly point out the difficult issue is how to persuade them that it is in their own interests as well as the global good. We must be able to allay their natural fear that in accepting the need for collective action now, largely in response to problems that we have created through our own industrialisation, their own economic development will be retarded. These are questions which I address in a speech I am giving in Cambridge next Tuesday, a copy of which I enclose. The Conference must start to tackle this.

I attach a slightly revised paragraph 7 of the draft statement, which is intended to give a rather more positive tone. It is difficult to go further until we know more precisely what needs to be done. However, I do feel that it is entirely inappropriate to refer to the Aid and Trade Provision in this context. The ATP is only a small part of our bilateral aid programme - and while I would be only too happy to have proposals put to me to use ATP to help protect the environment, it is not going to be our main instrument for doing so.

I am sending copies of this letter to the recipients of yours.

Chris Patten,

CHRIS PATTEN

MONTREAL PROTOCOL - POLICY STATEMENT ON ASSISTING DEVELOPING COUNTRIES

Redraft of Para 7

Within its overseas aid programme the UK is ready to do all it can to respond positively to requests for assistance from developing countries. We will be prepared to help find ways of avoiding the use of CFC's and examine the implication of adopting CFC-free strategies. We are ready to help as part of our bilateral aid programmes, to finance research relevant to developing countries, and to use our position in multilateral aid institutions in encouraging them to consider similar assistance.

"COMMON FUTURE - COMMON CHALLENGE: BRITISH AID POLICY AND THE ENVIRONMENT"

1. Groucho Marx was once asked a simple question to which he did not know the answer. "But every school boy knows that", he was told. "Well", he replied, "go outside and get me a school boy".

2. It is obvious from my own domestic breakfast table that schoolgirls are at least as well informed as schoolboys. My youngest, 9 year old daughter lectures me over the marmalade on the ozone layer, acid rain and the destruction of tropical rainforests. I say nothing of whales! You would have to be a pretty bull-headed father, or an extremely obtuse politician, not to recognise that the world has turned. Environmental issues are no longer confined to the bottom of the inside pages of serious newspapers. Instead they are front page news and prime-time television. There have been leaders on forests in "The Sun". "Time" magazine captured current concerns when, in place of its usual Man of the Year for 1988, it nominated the Endangered Earth as Planet of the Year.

3. So environmental issues are moving fast up the political agenda. I hope the debate will be increasingly well-informed. This lecture series should be a contribution to that. I want to start by congratulating the organisers for arranging this series and for attracting, dare I say, such a distinguished list of speakers. Through the live audience and the attention some of the lectures have received in "The Times", you are making a valuable contribution to the debate on the crucial issues of environment and development.

4. When Prime Minister Brundtland launched "Our Common Future" in the Queen Elizabeth II Conference Centre in April 1987 she knew that a London launch would maximise worldwide publicity. She even made sure she had those essential modern marketing tools - an excellent video and a couple of TV series. However, the World Commission's report did not really capture popular imagination and concern. As far as I am aware "Our Common Future" never entered any "best seller" list.

5. The Government's reply "Our Common Future - a UK Perspective" (copies of which are available in the Hall) barely made the newspapers at all, even though it was and remains one of the few national responses to the Report. 'Britain and the Brundtland Report,' a booklet by 7 organisations ranging from Oxfam, through the World Wide Fund for Nature, to Friends of the Earth, also sank virtually without trace - something I particularly regret since it complimented me and my then Permanent Secretary (who actually deserved the compliments) at least 4 times! Six of those organisations have just published a critique of the Government's response and I look forward to discussing the aid issues in their paper with them.

6. No, the Brundtland Report may have articulated concerns which are of increasing importance to our age, but I fear the real impetus for their rising political profile was a series of natural, man-enhanced and man-made disasters.

7. The Report itself recorded that during the 900 days the World Commission was at work:

- the African drought put 35 million people at risk and may have killed a million;
 - the Bhopal accident killed 2,000 and injured 200,000 more;
 - the Chernobyl reactor explosion caused damage across Europe;
 - a chemical fire in Switzerland poisoned the Rhine, all the way to the Netherlands;
- and least heralded and most shocking of all -
60 million people (more than the population of Britain) died of diarrhoeal diseases caused by malnutrition and dirty water.

8. Since then we have had floods in Bangladesh and Sudan, hurricane "Gilbert", and the earthquake in Armenia. In all four cases, man's failure to respect his environment (by deforestation, by ripping out mangroves and hence coastal defences, and by failing to enforce building codes) added to the scale of destruction. It

see that we still find it hard to give serious attention to major problems until we are forced to do so. You could be forgiven for thinking we are no wiser than when A E Housman wrote:

"The signal fires of warning
They blaze but none regard
And on through night to morning
The World runs ruinward".

9. But the case is not hopeless. Ruin can be averted. Environmental issues are coming sharply into political focus. As I shall show, action is underway in a variety of fora.

10. I have called my lecture "Common Future - Common Challenge: British Aid Policy and the Environment". 'Common Future' because the Brundtland Report was absolutely right - we are all in this together. "Common Challenge" because, I shall argue, we need to move, and we can move, beyond the reactive to the pro-active.

11. I make no apology for limiting myself to the **international challenges**. I regard the international dimension as both the most challenging and in some key respects, the most interesting. What is more, Ministers are invariably well-advised to stick to their own responsibilities.

12. With that in mind, I should like to start by drawing two **distinctions**.

13. The first is the obvious one, namely that environmental problems not only have different impacts in developed and developing countries, but that solutions in the two pose different degrees of difficulty. The problems faced by developing countries are often more acute, their environments are more fragile and more liable to flood, cyclone and drought.

14. In saying this, I am not minimising our own domestic environmental challenges and opportunities. Developed countries have made mistakes in the past, which will prove costly to correct.

Ensuring that our future development takes careful account of the environment, and that it is based on sustainable growth, will involve dislocations and economic trade-offs. It will need imagination to make full use of the new possibilities available to us. But we are a rich country, with good soils, a temperate climate, educated, healthy and well fed people, a long scientific tradition and democratic institutions. We face the problems of affluence and have the resources to determine the quality of growth. In Britain we have the luxury of making choices, and probably both the time and the resilient resource base to be able to afford some mistakes. We exercise those choices in an atmosphere of vigorous debate.

15. Poor countries have to deal with the problems posed by fragile ecologies and uncertain weather against a background of poverty, rapidly expanding populations, lack of qualified manpower and a limited scientific base. While they face exceptionally difficult choices, many countries do not have the democratic institutions needed to develop a consensus which all can respect. That said, developing countries perhaps stand to gain even more than we do from responsible use of the environment - and at least they may be able to avoid the mistakes we have made. Experience has taught us that prevention is cheaper than cure. If one addresses environmental concerns early enough in implementing projects, a "green" approach may actually save money.

16. My second distinction is between 2 classes of environmental problems - the global and the local. **Global problems** are those that inevitably affect the whole of mankind and can only be solved if all the world's nations collaborate. **Local problems** are to some extent "location specific" and are amenable to national or regional action.

17. Of course, in the real world the distinction is not clear-cut. So, for example, widespread deforestation is global to the extent that it destroys species and increases carbon dioxide, but also local in its effects on soil erosion and rainfall. Most people would surely agree that global problems include depletion of

the stratospheric ozone, the build-up of green-house gases, climate change, loss of genetic diversity and the exhaustion of major irreplaceable natural assets. In a sense it is the collective scale of national or regional problems which produces the global threats.

18. The local problems of principal concern to developed countries are largely caused by reckless industrialisation and unthinking affluence. They include the pollution of air, water and soil. This may be very widespread but it is still capable of solution by the north alone. Developing countries on the other hand face a long litany of local resource degradation problems including deforestation, desertification, soil erosion and salinisation. They suffer industrial pollution and the effects of rapid urbanisation, unclean water and inadequate sewerage disposal.

19. One of the most important international environment issues we will face over the coming years will be to engage the developing world in the drive to tackle global issues; this will certainly involve helping them tackle what they see as their own priority environmental difficulties which may not currently pose any global threat.

20. In focussing on the international dimension I have been greatly helped by the **excellent lecture** by Sir Sonny Ramphal. He sketched out the scale of degradation through deforestation, desertification and pollution of soil, water and air. He graphically demonstrated what he called:

"The simple, and terrible, truth... that poverty and environment are inextricably interlinked in a chain of cause and effect".

21. He stressed the role of population pressures. He touched on the implications of possible climate change. He looked at the emerging international response to environmental issues and suggested some tools that decision makers needed. He raised the

problem of national sovereignty. His presentation was eloquent, but like all good inaugural speakers he stopped when the argument got interesting!

22. I share many of Sir Sonny's views on the environment, above all his stress on the linkages between poverty, population pressure and environmental degradation. I want to try to develop his arguments further and to suggest that there are practical measures we can and should be taking. There are many important issues such as global warming and the depletion of the ozone layer, but since I am Minister for Overseas Development, I propose to focus this evening on the problems of population growth and the fate of the tropical forests.

First, the scale and nature of the problem.

23. Sir Sonny made the **population** issue more immediate by quoting statistics from just 2 countries. We need to look at the overall picture as well. The Brundtland Report cites United Nations figures which suggest that World population will stabilise somewhere between 8 and 14 billion or from 60% to nearly 200% above today's level.

24. The range in these projections is enormous. It is as large as this precisely because we have the chance to influence the outcome. At the bottom end of the range, we could increase food production per head, through foreseeable improvements in agriculture, and could keep present food habits. At the top end, we could not. There would have to be massive changes in diet and in our use of the environment.

25. It is one of the most **important paradoxes** of development that, in order to ensure that population growth stabilises near the bottom end of the projected range, we need to **improve** children's chances of survival. Provide mothers with literacy, education, employment opportunities, and child health programmes, and you provide alternatives to numerous births as a way of ensuring security in old age.

26. As Minister for Overseas Development, I try to explain that paradox to the public at large. Too many people in the rich countries still think that the poor of the developing world are feckless because the rational behaviour of the individual does not coincide with the good of the local or the global community. Very poor families have so many children mainly because so many of their children still die before reaching puberty. If development efforts and aid programmes have one fundamental purpose, it is to stop so many babies dying. That does not just need primary health care programmes, but sustained increases in incomes and improved sanitation, agriculture, education and the rest. One good way to measure whether real progress is being achieved in a developing country is to look at the figures of infant mortality.

27. It is the same with environmental degradation. Poor people do not deplete their resource base out of perversity. As experienced farmers the rural populations of developing countries know only too well the consequences of over-using marginal lands. But they do not have resources on which to fall back in hard times. Their savings are not put into Volvos or BMWs; they take the form of trees or cattle. Once those are gone, survival itself dictates the choices. Help a family today to find a way out of dire poverty and sustainable use of resources tomorrow becomes a possibility.

28. Poverty and population pressures, which are increasing faster than peoples' ability to adapt systems of production, are very powerful causes of environmental degradation. It is no wonder that the symptoms of that degradation are so alarming.

29. Sir Sonny properly drew attention to tropical deforestation and quoted the FAO figure of an annual loss of 11 million hectares. That figure represents an area the size of Scotland, Wales and Northern Ireland. It is the most widely quoted because it is the latest we have for global forest loss drawn up from internationally comparable data. However, it relates to 1980 and certainly underestimates the present position. Figures for the last burning season produced by the Brazilian Space Research Institute suggest that that country alone lost 30 million hectares of savanna

woodland and rainforest in 1988. British newspapers under "Shock Horror" headlines described that as being an area equivalent to the size of Belgium. Sadly the reality is even more shocking and horrifying. 30 million hectares is 10 times as big as Belgium, larger indeed than the whole of the British Isles.

30. But let me move on from statistics to their consequences. Why does such destruction matter? After all, deforestation was so widespread in Russia and North America in the 1860s that it was then responsible for the largest release of carbon dioxide into the atmosphere. The expansion of agriculture, which followed this burning and cutting down of the forests, provided the basis for subsequent industrialisation and growth.

31. Unfortunately, as we all know from horrifying television programmes, today's burning of the rainforest is unlikely to have such providential results. The soils below the lush vegetation of Amazonia are fragile and poor. When the forest is cut down and burnt the ash gives a once for all boost to the soils, but the minerals are soon leached out and the organic matter, with its valuable water-holding and soil-conditioning properties, is destroyed. The poor migrants from the drought-ridden north east of Brazil or the slums of its large cities all too often find that their dreams of growing abundant crops on a secure homestead are an illusion. Their back-breaking work has merely cleared land for absentee ranchers. Even pasture deteriorates, and ten years after clearing, much of the land is hard baked desert or scrub unpalatable to cattle.

32. This cycle is tragic enough. But in the process a resource of global environmental importance is being destroyed. Forests, and especially rainforests, can play a major part in checking the gradual warming of the earth's atmosphere. Mankind releases carbon dioxide into the air from power stations, transport systems, factories and homes. The forests counteract this, in part, by absorbing carbon dioxide as long as they grow and are not burnt or left to rot. The forests, while they live, help to stabilize the earth's climate. But as long as they are being cut down and burnt at present rates, this contributes between 10 and 20 percent to net

global carbon dioxide emissions. So, while power generated from fossil fuels - and most such power is generated in rich countries - is by far the most significant source of greenhouse gases, we cannot afford to ignore tropical deforestation in our studies of possible climate change.

33. The rainforests are important, too, in a global context for their genetic diversity. Because almost all the insects have yet to be identified, no one knows whether rainforests harbour 2 or 50 million **species!** We do know that the complex ecosystem of the forests means that many of the species are highly adapted to their ecological niche and have unusual and therefore valuable properties. It is no accident that 40% of all drugs prescribed in the US are based on chemicals derived from rainforest species. Nor is it accident that the US National Cancer Institute has identified 2,000 rainforest plants with the potential to fight cancer.

34. Darwin taught us that species loss is an inevitable part of natural selection. Probably 98% of all the species there have been over the past 400 million years are now extinct. But that works out at one loss every 27 years. Burning of the forest for unsustainable agriculture means we are losing species at a rate of 2 a day. You may recall that Lady Bracknell told Ernest.

"to lose one parent may be regarded as a misfortune; to lose both looks like carelessness".

35. If the World Resources Institute is right and we lose 13,000 plant species by the year 2000 from Latin American rainforests alone, our wanton destruction will be more than careless, and our descendants will talk of calamity not misfortune.

36. The British public is most concerned about loss of rainforests because of these global interests. But as an aid donor concentrating on the poorest countries, I am at least as worried by the damage to the **local** environment by loss of forests throughout the developing world. Deforestation affects regional weather patterns and rainfall: there is evidence of this from Amazonia and

from West and Central Africa. The forests of Rwanda need to be protected, not only for the sake of the mountain gorilla, but also to protect the livelihood of Rwandan farmers. Trees are of the greatest importance in arid areas. This has been graphically described by a Somali pastoralist:

"Villagers have no factories or industries. We have land, we have water and after that we need trees. Allah created trees because animals need them just as people need land... our lives depend on our animals and they depend on trees. The trees save our lives in drought. Trees are male camels for us - they bear our burdens".

In the west, "energy crisis" means sudden shocks in the price of oil. In Africa, it means shortage of **fuelwood**, the price of which - assuming it is available at all - is measured in women's time. As wood becomes even more scarce, dung is burnt instead. That means essential nutrients are no longer available for crops. The crops foregone each year because of that loss of natural manure may well be greater than the annual total food aid provided by all the world's donors.

37. The degradation does not end there. Organic matter and trees both help to prevent **soil erosion**. The World Bank estimates that to make up the nutrients carried off by soil erosion would cost India \$6 billion in replacement fertiliser each year. That is 45 times our substantial aid programme to India.

38. Soil degradation wreaks appalling human misery. The Horn of Africa has had more than its share of suffering in the 1980s. Displaced people trek back and forth across hostile land. We are faced with the heart-rending sight of starving babies in feeding camps - that appalling symbol of the failure of every sort of development, political as well as economic. The immediate causes are war and drought, but these people are also environmental **refugees**. It is no coincidence that Ethiopia's descent into acute vulnerability to famine follows the stripping of forest cover from

its highlands. Ethiopian forests now cover one tenth of the area they did in 1900. Lands stripped of their tree cover cannot retain what moisture there is. When rain comes, it is not absorbed. We are faced with the mocking spectacle of disastrous floods in areas usually regarded as arid wastes. When life is precarious, people are more likely to fight over precious water and pockets of good soil. Tribal loyalties become more important if group survival is in question.

39. So even one type of degradation - deforestation - can have profound consequences: loss of genetic diversity, climate change, loss of soil fertility, soil erosion, flood and famine. And I should stress again that deforestation is only one example of the environmental problems we need to overcome.

40. This may all have seemed a touch apocalyptic. But we must not be paralysed by pessimism. Asked once whether he was an optimist, Winston Churchill said he didn't see much point in being anything else. What we need is to be imaginatively, practically and resiliently constructive. Indeed that is the whole value of the Brundtland Report. The earlier Club of Rome was politically, not to say economically and technologically, naive in insisting that we must all give up the benefits of 20th century affluence. By preaching 'No Growth', they ensured they had 'No Influence'.

41. The World Commission chaired by a serving Prime Minister, and including 8 Ministers or former Ministers, was much more astute and realistic. The Report does not say 'Carry on as You Were', but it does give a **message of hope**. It points to sustainable growth and the elimination of poverty as the basis for an environmentally sound world. It asserts that technologies can be found if the will exists. Faced with that approach, which politician will dare cast doubt or refuse to take up the challenge?

42. I believe profoundly in the importance and possibility of **sustainable development**. It is, of course, difficult to define simply, but it was neatly characterised by the Brundtland Report as meeting the needs of the present without compromising the ability

of future generations to meet their own needs. To bring that about, requires three things. It requires **political will, resources and the right mechanisms**. I want to spend the rest of the lecture exploring all three.

43. Political will appears to be available in developed countries and in some developing ones. The Prime Minister's speech to the Royal Society last September made her personal commitment quite clear and showed that growth and environmentalism go together. She pledged:

"The Government espouses the concept of **sustainable economic development**.

Stable prosperity can be achieved throughout the World provided the environment is nurtured and safeguarded."

44. President Bush stressed environmental issues in his election campaign and Budget Address, and has nominated the President of the American World Wildlife Fund as head of the US Environment Protection Agency. President Gorbachev, who has a background in agriculture, apparently has plans to double expenditure on environmental protection by the early 1990s. President Mugabe and Prime Minister Gandhi both chose to take part in the UN Debate on the Brundtland Report.

45. Two swallows do not, alas, make a summer. Other developing countries will need to follow the lead taken by Zimbabwe and India. They will also need to join in action on both global and local problems. As I have argued already, that is more difficult for developing countries than it is for us. We can and we must help to generate the necessary political will. That will is demonstrated by the welcome decision of President Moi of Kenya to address the Ozone Layer Conference in London next Sunday.

46. Generating political will involves action and persuasion at several levels. First, to have any credibility at all, we in the West must solve our own problems. I call this the older greenhouse effect - people who live in glasshouses shouldn't throw stones!

Developed countries must adopt the right policies to deal with both global and local environmental problems. Only if we do that can we hope to convince developing countries that global issues, like climate warming and the ozone layer, affect them as much as they do industrial nations. The Maldives know that global warming and a rise in the level of the oceans could mean disaster for them. But other developing countries may regard global preoccupations as not their concern. They will point out that it is the North's demand for thermal energy, not the burning of forests, which is the main source of carbon dioxide emissions and they will emphasise the enormous scope for energy saving in the North. So developed countries will have to show that they are doing all they can to solve the problems they themselves are causing.

47. Second, we must make clear that we recognise that developing countries will have different priorities. Their own local environmental problems - of drought, flood control or soil erosion - will often have greater urgency for them. They will insist that global concerns should not penalise them for their present poverty; they need the freedom to develop and industrialise. If energy efficient and "environment friendly" industrialisation demands higher additional costs, developing countries will naturally push their own priorities. They will seek more open markets, so that they can earn the necessary resources to afford action, and they will be right to do so. The poorest countries will look for more effective aid and for more of it. The developed countries for their part will need to show appreciation for recipients' domestic concerns and priorities. There may be scope for **packaging assistance** to cover, not only those factors which contribute to global problems, but also help for local environmental issues such as soil erosion or fuel wood shortage. Both partners (the aid donor and the recipient), and the world at large, would gain. In all such cases, we need to find a way forward which allows poor people and poor countries to improve their material well-being.

48. Some have tried to short circuit this cooperative building of political will. They have argued for using blanket

environmental **conditionality** against developing countries seem to be ignoring the global environmental good. It has been suggested that aid should be conditional upon a developing country's policy on all environmental issues. As some may know I certainly do not reject the principle of conditionality linked to aid. But it must be sensible and practicable conditionality. I certainly believe that one should encourage environmental concern in aid recipient countries, for example by trying to persuade them to give forestry projects a higher priority. This is an example of the policy dialogue that is such an important instrument for ensuring that our aid is effective. Equally, it is right to make specific project conditions about pollution standards. What I oppose is the argument which says one should cut off all aid to a country which does not immediately respond, for instance, to what the outside world says about its approach to this or that aspect of environmental policy. That smacks of sanctions. What we want are enthusiastic converts not press-ganged laggards. If we do not help countries to develop their resources sustainably, and to find alternative livelihoods, it is all too likely that they will be forced to pillage their existing resources even faster.

49. Equally I cannot agree with those North American pressure groups who seek to make progress by imposing their own domestic environmental protection legislation on development projects. For one thing it's bad ecology. Standards set for temperate, highly urbanised environments may make no sense in tropical rural areas. For another, it wrongly assumes that developing countries have the basic data and monitoring capacity required. While global standards are often inappropriate, internationally agreed guidelines linked to local or regional factors may well have a role to play here. As part of a more constructive approach there is the need to **strengthen institutions** in developing countries so they can decide on appropriate standards, monitor them and enforce them. We are doing just that ourselves, for example by financing a number of trainees in environmental disciplines. It might seem to take longer than conditionality, but the results will, we believe, be more sustainable.

50. So much for political will. What about **resources**? That is not just a question of money. It is important to remember the Brundtland Report's strong message that environmentally sensitive development could often reduce costs.

51. The first need is to follow the Prime Minister's dictum in her Royal Society speech:

"We must ensure that what we do is founded on **good science** to establish cause and effect".

52. I suspect that members of that Society and of this University would not be surprised to learn how many gaps there are in our understanding of tropical ecosystems and of the interactions of development and environment. To devise solutions which are simple, appropriate, affordable and therefore sustainable, we will often need the best scientific minds. A Nobel Prize has not gone to those who made the oral rehydration therapy salts, used to combat diarrhoea, cheap enough to be distributed on a massive scale. Yet the problem was not an easy one and I suspect the benefit to mankind outweighs that from some much more prestigious scientific endeavour.

53. One area requiring attention is improving the genetic potential of trees which are hundreds of years behind agricultural crops in terms of selective breeding. We need to start by taking and labelling seeds of known provenance. To ensure the high status of such work we need wider recognition of its importance at the higher levels of academia.

54. To encourage more emphasis on **forestry research** of all types I have recently announced an additional £500,000 a year for international collaborative work. We shall be using part of that for a study by the World Conservation Monitoring Centre which is associated with these lectures and located on Huntingdon Road. The Centre will be making a special study of protected areas when FAO updates those obsolete deforestation figures I mentioned earlier.

55. One area where our understanding is particularly weak is on the extent, expected trends and strategies for coping with **desertification**. A UN Conference on Desertification provided the opportunity for a baseline assessment in 1977 which was followed up by a questionnaire from the United Nations Environment Programme in 1984. The latter was based on a broader definition of the area at risk. Yet a comparison of the two has provided virtually all the widely quoted statistics on desertification used ever since. A whole United Nations Plan of Action to Combat Desertification was drawn up on the basis of the 1977 figures. The Plan calls for inputs of more than \$4.5 billion each year but has never received backing on anything like that scale.

56. The ODA has always preferred to tackle desertification as part of natural resource management rather than as a separate problem with its own priorities. The latest analysis from Ridley Nelson of the World Bank suggests we were right and claims that there is little point in throwing huge sums at what he prefers to call dryland degradation. The new study questions the scanty data and rejects the old concept of steadily advancing sand dunes moving southwards from the Sahara. Instead Nelson claims that, after allowing for fluctuations in rainfall, deterioration flows outward from centres of population pressure. So the problem may be as much socio-economic as climatic. The study urges new localised adaptive research and rejects the famous grandiose plan to put a green belt across the Sahel from Dakar to Djibouti. Faced with such contradictory advice, a decision maker could be forgiven for prevaricating and calling for more research!

57. The emphasis on science needs to involve developing country scientists, especially on work on global problems. We can expect the governments of developing countries to be more heedful of predictions on global warming if their own researchers have played a part in formulating the assumptions or processing the results. A world scientific constituency needs to be built which can sensitise decision-makers in north and south alike.

58. Apart from - or perhaps as a part of - good science, we need **good economics**. We need economics because the science will

tell us what we need to do, while the economics should help to tell us how we can best do it. This University has a particularly proud tradition in that discipline. It also has a Department of Land Economy which is associated with these lectures.

59. I hope both the Faculty and the Department will take on board a fervent plea to step up work on environmental economics. It is crucial that those worried about the environmental effects of projects and policies should talk the language of economics if they are to influence Ministries of Planning and Finance in developing countries.

60. Some in this University used to object to **cost benefit analysis** on the grounds that it did not take proper account of the long-term future, nor of factors which could not be quantified. Both points are important in assessing the environmental dimension of projects. However, we still need a mechanism for helping to allocate scarce capital amongst the developing world's possible projects. We have commissioned a Cambridge graduate who went on to be one of our Senior economists, to write a practical handbook on integrating environment in project analysis. It is a difficult task and I am sure others should be encouraged to comment (though not at our expense!) His text will complement a general **manual** that we have just produced for all our programme managers, which is intended to ensure that the environmental dimension is properly considered throughout the project cycle.

61. Apart from micro economics we are working with the World Bank at a more "macro" level. We have commissioned British consultants to study the trends in the supply of and demand for natural resources in the Hills of **Nepal** and to explore the possibilities for encouraging environmentally appropriate behaviour through macro-economic and other policies. The study is based on the World Bank's premise that degradation in developing countries is too widespread to be tackled by projects alone. The first phase suggested that on some reasonable assumptions food, fuelwood and fodder deficits would be common throughout the Hills by 2011 and might have an economic cost per head of as much as \$60 to import

substitutes from outside the Hills. This top figure is a third of current GNP per head. No wonder the Nepal National Planning Commission has shown great interest in what started off as a donor initiative, and has played a major role in selecting the policy instruments to be analysed in the second phase of the project. The World Bank is financing similar work in up to 29 other countries. The series should provide some much needed insights into the true causes of degradation.

62. Good science and good economics should help us make best use of the third kind of resource, **money**. They should also remind us that throwing money at a problem may not solve it.

63. You will expect me to talk about aid flows and I will come back to that, but firstly I want to talk about even more significant resource transfers. For example, energy pricing, agricultural trade and debt management are just as much part of good environmental economics as the study in Nepal I have just described.

64. The most obvious way to promote sustainable development is to ensure that consumers and producers pay the full environmental cost of their activity. We all know countries where demand for electricity is almost infinite because tariffs are set very low or charges are not collected. The results are unnecessary thermal power stations and an environmental cost to all of us. It is not always easy to ensure that the market reflects full environmental cost, but we can make a start by eliminating harmful subsidies.

65. Those subsidies can take many forms. The EC's Common Agricultural Policy and the agricultural support systems of the United States and Japan conspire to ensure that the world prices facing many developing country commodity exporters are far too low. That increases their need to deplete their resource base more quickly, and it reduces their ability to afford environmental protection. I am not saying higher prices would automatically improve the environment - they might instead lead to increasing pressure on more marginal land (as the CAP has done). My point is

that more open agricultural trade is a necessary, though not a sufficient, condition for sustainability.

66. The argument is not just true for agriculture. Trade has a much bigger impact on most developing countries than aid ever can have or should have.

67. Many people would argue that we also need to think about debt in our effort to find resources for environmental protection. We have always rightly distinguished between two types of debt. The first type is that owed by the very poorest countries to governments and the International Financial Institutions - basically the debt of sub-Saharan Africa. The other type is that owed to commercial banks by the better-off developing countries and here I am thinking primarily of Latin America. We launched some 18 months ago our initiative on African debt and, thanks to the breakthrough achieved at the Toronto summit, Paris Club rescheduling is now underway, reflecting the Toronto consensus. Seven countries have already benefited. The problem of Latin American debt is again under active discussion. Our approach to these problem is to avoid two particular risks. We do not want to transfer the problem from banks to taxpayers, nor do we want to deter the banks from lending in these countries again. Too many of the proposals made so far would have this effect.

68. Some environmentalists want to bring in additional resources through **debt swaps**. One might expect them to have been supported by northern pharmaceutical companies who may have a more immediate interest in keeping rainforests than do hard-pressed governments of poor countries. Lending banks are likely to be more cautious. But where such swaps are entered into voluntarily and genuinely release additional resources, they can be a useful tool. I note an interesting debate among academics and voluntary organisations on this issue. But I would not want to overstate their potential contribution. Naturally, if NGOs provide large sums of money for this purpose, they will need to be convinced that the environmental commitments undertaken are firm and durable.

69. I come then to aid. I am not seeking to re-open the public expenditure round. However, I think that it is clear that official development assistance of the right quality, properly spent, is an essential part of the cooperative effort to find resources for sustainable development. Our own economy is now sufficiently strong for us to have started increasing our aid programme again in real terms. I hope that we can continue to afford to do that.

70. We must also look for ways to focus our aid effectively. Demonstrating our environmental concern, the Prime Minister pledged that the ODA would

"direct more of our aid to encourage the wise and sustainable use of forest resources".

71. The **forestry initiative** has 4 components. I have already mentioned the additional aid for forestry research. We are encouraging recipient countries to direct more of the aid we provide to forestry. We are currently completing an exercise to identify countries where we feel we can have a comparative advantage in offering forestry assistance. I have also just announced an annual grant of £1 million to the World Wide Fund for Nature for jointly funded projects. We both agree - the WWF and ourselves - that more than 70% of that money should go to forestry conservation projects. The final component is **training and institution strengthening**. We have world-renowned expertise in tropical forestry in this country (even if a lot of it is centred on Oxford!) We intend to use that expertise both to strengthen our in-house capacity to appraise and monitor forestry projects and to provide technical assistance and training for our increased effort overseas.

72. Let us now turn, finally, to the **mechanisms** for global sustainable development. By mechanisms, I mean the international institutions.

73. For over 40 years, international relations have been dominated by the consequences of an experiment that Rutherford conducted on the other side of Cambridge in 1919. I understand

that when he split the atom he thought it would be of no practical use. I am told he continued to think so until his death in 1938. However, nuclear weapons, the Cold War and disarmament have shaped alliances and pre-occupied governments since the 1940s.

74. I believe that, over the next 40 years, the environment will come to form much of the business of international relations. Environmental protection, like arms control, will be complex and difficult to negotiate on an international scale. The two issues are alike, in that both concern the survival of the human race on this planet. But with nuclear weapons, everyone realises that, however necessary they are for security, they are extremely dangerous. Environmental damage, on the other hand, can arise from peaceful economic activities considered, until only very recently, as harmless, even beneficial. We are only beginning to understand the ecological principles at work, which have to be respected to ensure good environmental practice. All countries have a stake in the solutions. All need to be involved in finding and applying them.

75. Inevitably the arguments about global environmental questions are bound to involve issues of **sovereignty** and **equity**, mutual interest and mutual help. It will not be easy to strike the right balance.

76. For example I talked earlier about the genetic diversity of rainforests being of global importance. Very few political leaders would draw the conclusion reached by the Indonesian Minister of State for Population and the Environment, Emil Salim, who was a distinguished member of the Brundtland Commission. He has described the rainforests as a global resource requiring and deserving finance from all nations for their protection. This is not the view of the Brundtland Report itself, which confined the global commons to Antarctica, the Oceans and Space.

77. A different sort of reaction comes, for example, from Brazil, which has been very jealous of its national sovereignty and territorial integrity ever since Spanish and Portuguese disputes

over the Treaty of Tordesillas. In Brazil, rainforest has hitherto been regarded as a purely national resource to be used in accordance with national priorities. Interference by outsiders is deeply resented although at the same time international opinion seems to be having an effect - thank Heavens! - in raising local perceptions of the value of Amazonia.

78. A local Brazilian Senator reacted to a visit by 5 US Senators and Congressmen in January by writing in a Sao Paulo newspaper:

"If on the one hand the presence of these arrogant would-be lords of the earth tramples on our sensitivity, on the other it shames us that we have no strategy to exploit Amazonia in a way that preserves the environment".

79. No country, whether developed or developing, can be compelled to change its policies towards the environment. Any international system which sought to use compulsion would defeat its own object. Those who do not want to change their ways could easily evade its requirements. The only way to better environmental practice is to convince countries that it is in their own best interests to change. We have to show them that protecting the environment means a better life, both for themselves now and for their children. We have to make all countries understand that global environmental problems affect every one of them. There can be no free riders, for example, in the efforts to control climate change.

80. Developed and developing countries are already co-operating in identifying mutual interest in protecting the environment. But in the aid field, respect for national decisions has meant that concerned donors have so far provided money for conservation as part of traditional aid programmes. Projects have happened only when recipient governments attached priority to them; and it may be difficult for them to increase the priority for environmental projects when local people are crying out for schools or health

car. But we in Britain have long recognised that improving living standards goes hand in hand with tackling environmental problems. "I believe that this fundamental objective of our aid programme can only be achieved if recipient countries and donors work together on strategies for sustaining the use of renewable natural resources." (I make no excuse for quoting verbatim what I wrote in the foreword to the ODA's booklet on "The Environment and the British Aid Programme" two years ago.) Well directed aid programmes can serve as an encouragement to the adoption of good environmental practice, as they are already encouraging sound economic policies in recipient countries.

81. Another powerful influence on the perception of common interest is clear, well-founded scientific evidence. The scientists have warned us plainly of the dangers of depleting stratospheric ozone by CFCs. On the basis of this evidence, an international regime for protecting the ozone layer has been agreed through **persuasion and diplomatic negotiation**. The Montreal Protocol marks a real breakthrough in international negotiation on environmental issues. But not all countries are involved. In particular, China and India, which have the potential to be major producers of CFCs are not signatories. In an effort to persuade all the non-signatories that CFCs pose a real threat to every nation, we are hosting a major international conference on Saving the Ozone Layer next week. This will provide a showcase for new technology, for example in refrigeration, which will avoid the dangers of CFC emissions. I very much hope that more countries will decide to join the Protocol. I believe we have good arguments to convince them. But in the end, no-one can compel them to join.

82. Some might welcome a supra-national body with powers of compulsion. But this would be a serious error, even more so because, while we have the scientific evidence on CFCs, we do not yet have it on climate warming. We know the danger is there; it will be only too apparent if industrial emissions of carbon dioxide raise world temperatures and bring spring tides lapping over the Thames Barrier. But at this stage we cannot assess the scale, the timetable or the way different regions of the world will be affected. We need more science; and

we need to prepare the economics, so that when the scientific results are in, we shall know the best measures to adopt, for developed and developing countries alike.

83. The perception of mutual interest develops slowly and pragmatically. Let no-one kid themselves that we are ready for a culturally and climatically diverse global village to be ruled by an environmental policeman. The world's environmental plight is too important and too immediate for daydreams of supra-nationality to waylay us. We have no time for windy generalities and vapid pieties. Nor can we afford to waste years in wrangles about new institutions. We must use what we have. We must look out for and build on practical initiatives. It may not suit those in the green movement who want to overturn the world made by people, in order to preserve the natural world, but our approach must be heroically prosaic.

84. The successful work done to date on CFCs shows a way. The Tropical Forestry Action Plan with its emphasis on practical coordination and frank discussion is another model. The Inter-Governmental Group on Climate Change has made a successful start. The United Nations Environmental Programme, fresh from its Montreal Protocol triumph, is poised to secure agreement on a Convention on the Transboundary Movement of Hazardous Waste.

85. All these initiatives share at least two features: a substantial British involvement and a connection with the United Nations system. The UN is all too often castigated as a talking shop, but it is the most appropriate forum we have. If it did not exist already, we should need to invent it. But why on earth try to invent it twice over? The UN already has institutions dealing with the environment, social issues, refugees and agriculture. It is up to us to ensure that the UN functions as effectively as possible if we are to achieve sustainable development. That, naturally, begs a host of questions - but we would be better served trying to address those than engaging in the attempt to build new castles in the air.

86. Other institutions must also play key roles. I have mentioned the World Bank a great deal this evening. Environmentalists, especially American ones, love to suggest that its only "green" interest is the "greenback". It certainly helped to finance some projects which went disastrously wrong, as its greatly strengthened Environment Department would be the first to admit. But criticism tends to centre on six of the literally thousands of projects it has helped finance. I believe lessons have been learnt and my staff in London and Washington continue to monitor performance. The Bank is now, as befits its stature, the leader in environmental research and policy initiatives amongst the donors. We keep closely in touch with the Bank's thinking, as the Nepal study demonstrates.

87. I am also pleased that environmental collaboration between bilateral (country) donors is growing through the Development Assistance Committee of the Organisation for Economic Cooperation and Development (the **OECD**) in Paris. Environmental expertise is in short supply and we can usefully share experiences with each other. We also need to discuss together how to handle certain types of project. If global warming means that we should take more explicit account of green-house gas emissions from power stations in our economic appraisals, then we will obviously have to decide guidelines with other donors. Otherwise, if we suggest to a recipient that an energy efficiency project might make more sense, all that is likely to happen is that the recipient will take the efficiency project from us and ask another donor for the power station.

88. I depend for my peroration, as I did for my initial remarks, on my youngest child.

89. Seeking to explain for her the other day the meaning of Pandora's box, I looked up Lempriere's "Classical Dictionary" and read there the description of how Epimetheus opened the beautiful box, given to Pandora by Jupiter. When Epimetheus lifted the lid, "there issued from it a multitude of evils and distempers which dispersed themselves all over the world and which, from that fatal

moment, have never ceased to afflict the human race. Hope was the only one who remained at the bottom of the box...."

90. At the risk of abusing the fable, we don't want Hope to remain under wraps. The job for politicians in the next few months and years is to get Hope to fly. We should not delay. We shall of course save the earth. There is no other option. But we must start the hard, grinding, practical work now.

91. "Wise men", wrote Cavafy, wise himself, "are aware of future things/just about to happen". Even wiser men work together when it is an implacable necessity, to stop some future things happening at all. We must and we will. "Evils and distempers" may darken the heavens, but Hope is taking wing.

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