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THIRD REPORT

January 1997

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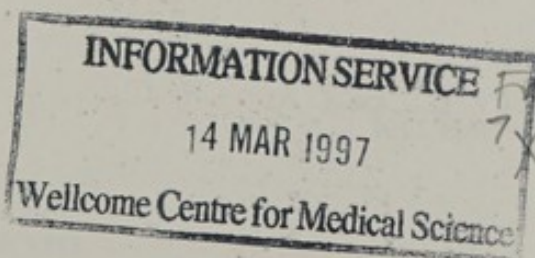
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The Rt Hon John Major MP

No 10 Downing Street

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Dear Prime Minister

I have the honour to submit the third report of the Panel which you appointed three years ago this month to advise you on key issues relating to sustainable development.

We are grateful for your prompt response to our second report. In this third report, we have identified new issues which we believe require priority and Government leadership in coping with them. We also comment briefly on progress on topics raised in both our first and second reports and draw attention to where, in our view, more work is necessary.

This year we look forward to the fifth anniversary of the United Nations Conference on Environment and Development held at Rio in June 1992. It is time not only for stocktaking on what was then achieved but also for pushing forward initiatives and identifying new directions. We appreciate the personal commitment of the Environment Secretary to sustainable development and its application to policy. But much remains to be done in suffusing the philosophy throughout government, both national and local, and translating it into practical results.

As before, we are grateful to those in government, whether Ministers or officials, and to those outside government, whether organizations or individuals, who have helped or contributed to the work of the Panel. I also record my warm thanks to my colleagues on the Panel and to our invaluable secretary for their contribution to our enterprise.

Yours sincerely
Crispin Tickell

CRISPIN TICKELL

Convenor

27 January 1997

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TERMS OF REFERENCE

The Government Panel on Sustainable Development was appointed by the Prime Minister on 25 January 1994 to advise the Government on strategic issues arising from the Sustainable Development Strategy and the other post-Rio reports on climate change, biodiversity and forestry¹.

The Panel's remit is:

- to keep in view general sustainability issues at home and abroad;
- to identify major problems or opportunities likely to arise;
- to monitor progress; and
- to consider questions of priority.

The Government consults the Panel on issues of major importance and the Panel has access to all Ministers. It keeps in touch with people in different sectors in Britain, and abreast of developments in other countries. It meets formally at least four times a year.

¹ *Sustainable Development: The UK Strategy*. Cm 2426. HMSO, 1994. ISBN 0-10-124262-X.

Climate Change: The UK Programme. Cm 2427. HMSO, 1994. ISBN 0-10-124272-7.

Biodiversity: The UK Action Plan. Cm 2428. HMSO, 1994. ISBN 0-10-124282-4.

Sustainable Forestry: The UK Programme. Cm 2429. HMSO, 1994. ISBN 0-10-124292-1.

INTRODUCTION

1. This report marks the end of the Panel's third year. Appointed by the Prime Minister in January 1994 when he launched the Government's Sustainable Development Strategy, the Panel's first and second reports² were submitted to him respectively in January 1995 and January 1996. The Prime Minister's replies were published with the Government's response in March 1995 and March 1996.
2. The Panel formally met four times in 1996. It selected four major topics for study which it considers warrant higher priority. These are Government procurement policy, subsidies, climate change and long-term energy supplies, and the impact of agriculture on biodiversity. During the year, the Panel has also kept under review issues related to air quality, and to the Government's latest household projections and the implications for future housing development. The Panel's views on all these topics are set out below. Additionally, this report contains a brief review of progress on the four main topics in each of the Panel's first and second reports.
3. Through its Convenor and other members, the Panel has been in touch with the Prime Minister, other Ministers and officials on several occasions. It has also kept in touch with the work of some of the many other bodies involved in sustainable development issues in this country, including the UK Round Table on Sustainable Development on which the Convenor is an *ex officio* member, and the Advisory Committee on Business and the Environment.
4. The Government has provided support for the Panel through an interdepartmental official group on sustainable development led by the Cabinet Office and the services of a small secretariat. The Panel commissioned papers from Government Departments on several topics and subsequently sought views from outside organizations and individuals. The Annex to this report lists those who supplied written comments.

² *British Government Panel on Sustainable Development First Report*. January 1995.
British Government Panel on Sustainable Development Second Report. January 1996.
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TOPICS

Government procurement policy

"... the Government will give a clear lead in its application of sustainability and environmental principles to its own operations." [Summary para.96]

"Departments and their executive agencies are also major purchasers of supplies. Treasury guidance has been provided to all Departments which recognises that specifications for goods and services should reflect the requirements of Departments' environmental strategies, seeking best value for money in the usual way." [para.29.15]

Extract from Government White Paper, *Sustainable Development: The UK Strategy*. (Cm 2426). January 1994.

5. Public purchasing is a major feature of the nation's economy. According to the Government's strategy for procurement³, central Government expenditure other than pay-related spending and transfer payments is about £40 billion a year, most of which is spent on procurement. In addition, purchasing authorities in the NHS internal market spend more than £20 billion a year.
6. Inevitably Government purchasing decisions have a big impact on the use of resources and on the environment. In the past procurement decisions seem to have been unduly influenced by short-term profitability. The Government's strategy now emphasizes the importance of adopting an integrated procurement process, *"... covering the whole cycle of acquisition and use from start to finish, to ensure quality and economy over time, not short term lowest price"*.
7. In its response to the Round Table's first annual report⁴ the Government stated that *"... Departments are free to specify their requirements in a way which meets their operational and policy objectives, including environmental factors wherever relevant, and they are expected to take account of 'whole life costs', which often involve environmental factors like energy consumption and waste disposal costs"*. Yet Departments do not specify the 'green credentials' expected of their suppliers; nor are suppliers expected to comply with environmental management schemes. The Government intends to issue Departments with new guidance on green procurement.
8. The Panel is disappointed that the Government has not adopted a more pro-active policy in this area despite its commitment *"... to make sustainable development the touchstone of its policies"*⁵. Purchasing is an important means to promote and be

³ *Setting New Standards. A Strategy for Government Procurement*. Cm 2840. HMSO, 1995. ISBN 0-10-128402-0.

⁴ *Government Response to the First Annual Report of The UK Round Table on Sustainable Development*. Department of the Environment. June 1996.

⁵ *Sustainable Development: The UK Strategy*. Introduction by the Secretary of State for the Environment.

seen to promote the policy objectives of an organization. In the private sector, many leading companies now operate on the basis that environmental awareness and good practice are good for business. *Business in the Environment* and others have been promoting the importance of supply chain management which can lead to increased efficiency, cost savings and improved risk management. As customers demand higher standards throughout the supply chain, environmental performance will increasingly become an important qualification by which suppliers are selected. Last year, the Advisory Committee on Business and the Environment issued for consultation a draft report on integrating the environment into business decisions⁶. Draft guidelines for action advise that *"beyond observance of laws and regulations, consideration should be given to many factors, such as the risk of adverse effects on humans and on the environment across the whole life-cycle of the product, service or process including supplied goods and services, work done 'in-house' and through to the ultimate, after-use disposal of any wastes"*. Application of these guidelines could become a major factor in the selection of suppliers.

9. By giving full weight to environmental factors in its purchasing decisions, the Government could have a significant influence on its suppliers, their pricing policies and on product design. It could thereby raise environmental standards and reduce pollution and waste in line with its commitment to sustainable development. **The Panel therefore recommends that the Government should actively promote sustainable development through its procurement policies and practices and require other public bodies to do likewise. The Government should also monitor its success at integrating environmental factors into its purchasing decisions and publish relevant information annually.**
10. The Panel believes that, following best practice in the private sector, the management systems of a potential supplier, including any environmental management system, should become a relevant factor in assessing tenders. Accreditation under recognized standards, such as BS7750, EMAS and ISO14001, may be a suitable way of meeting this requirement particularly for larger companies. Smaller companies may benefit from simpler, low-cost alternative schemes which need to be brought along. **The Panel recommends that the Government should announce a target date by which the environmental policy and practice of firms competing for public contracts will become an essential element in the assessment of all bids. New Government contracts should require suppliers to develop and maintain an environmental policy during the life of the contract.**
11. For the Government to recognise and support the now well-established trends in world markets by judicious use of its purchasing power would make good economic and environmental sense and be an effective means of contributing to sustainable development. **The Panel recommends that the Government should join with other countries in the European Union and the OECD to promote initiatives on green procurement.**

⁶ *Integrating the Environment into Business Decisions: The Consensus Approach*. Advisory Committee on Business and the Environment. October 1996.

Subsidies

"The Government has long been committed to the integration of environmental concerns into decision-making at all levels. ... Not all government policies and programmes will have significant environmental effects; but all need to be examined on a consistent and systematic basis." [para.29.2]

Extract from Government White Paper, *Sustainable Development: The UK Strategy*. (Cm 2426). January 1994.

12. Government subsidies affect all aspects of the economy. They exist for a variety of economic, environmental and social reasons. They may seek to compensate for additional costs, to promote particular forms of activity or to meet specific objectives such as the protection and conservation of a landscape or habitat. Most subsidies have environmental impacts although only a minority can be justified on environmental grounds alone.
13. It is not easy to estimate the level of public subsidies. The 1995/96 Public Expenditure Control Total contained over £7,300 million of subsidies paid by central government and local authorities, of which about £2,900 million was for agriculture, £2,300 million for public transport and £1,100 million for housing. But these are limited to subsidies in the strict public expenditure definition (unrequited current payments related to the provision of a good or service). A wider definition of subsidies could include tax exemptions, and capital grants and other expenditure, for example on transport infrastructure, provision of insurance cover, research and publicity. To these could be added implicit subsidies which occur where market pricing fails adequately to reflect external costs, for example those of pollution on the community as a whole.
14. Nor is it easy to assess the consequences of particular subsidies since their effects, including in some cases adverse environmental effects, may be widespread throughout the economy. Moreover, in many areas there are conflicting subsidies, such as energy pricing subsidies alongside energy conservation measures. One estimate puts environmentally damaging subsidies in Britain in excess of £20,000 million a year. While the absolute figures are uncertain, there can be no doubt that some subsidies, including some with specific environmental objectives, have adverse environmental impacts.
15. Elsewhere in this report, the Panel draws attention to some of the distortions implicit in the Common Agricultural Policy of the European Union where production-related subsidies can contribute to environmental problems. In the energy sector, the Panel has raised the tax position of domestic energy consumption relative to energy saving and other conservation devices. In transport, the Panel urged the Chancellor of the Exchequer in 1995 to tackle the perverse incentives implicit in the company car taxation system but there are substantial subsidies elsewhere, particularly to private road users. The Panel therefore welcomes the recognition in the Chancellor's

November 1996 Budget statement that "... motorists should bear the full costs of driving – not only wear and tear and congestion on the roads, but the wider environmental costs"⁷.

16. It is clear that the Government needs a comprehensive set of principles and practices for the use of subsidies based upon the concept of sustainable development. Subsidies require careful design to integrate economic, environmental and social objectives and to avoid inefficient cross-subsidisation or conflict with other subsidies or policies. They represent expenditure or tax foregone which could become available for spending elsewhere or for reducing taxation. Removing them could be a first step to taking on board environmental costs in the pricing of goods and services.
17. Inability to calculate costs and benefits precisely should not be allowed to impede sensible policy analysis. New subsidies should be subject to environmental impact appraisal and existing subsidies should be reassessed within a well-formulated programme. Where environmental costs are significant, there is a case for removing (or not introducing) the subsidy.
18. **The Panel therefore recommends that the Government should set up a task force to draw up, within a year, aims and principles for the future use of subsidies.** Key elements of the work of the task force would be:
 - to review the principal subsidies in the main economic sectors and in the main areas of environmental concern, in particular the tax regime and financing of the energy and transport sectors;
 - to identify subsidies which perversely encourage the use of environmentally-damaging goods or services, waste resources or have other environmentally detrimental effects and to draw up proposals for their reduction, abolition or removal in other ways, including phasing-in adjustments for those adversely affected; and
 - to identify subsidies which should be retained and where it may be possible to modify them to promote higher environmental standards.

The Panel also recommends that any proposals for new subsidies should be subject to environmental impact assessment.

19. Sometimes the removal of a subsidy would require the elimination of a tax exemption or the introduction of an economic instrument. One such example arises in civil aviation where international aviation fuel is excluded from tax. As the Chancellor recognized in his Budget statement, it will not be easy to secure the necessary international support to reverse this policy. Yet change in this area is important. Civil aircraft are currently responsible for about 2% of global carbon dioxide emissions and the sector is the fastest growing source of such emissions. The Panel urges the Government to continue to press for a new approach and to lend its support to any European Union initiatives.

⁷ Hansard, HC Deb (1996) 286, c 167.

Climate change and long-term energy supplies

"As we enter the next Century, new and difficult choices may have to be made if we are to achieve a sustainable future. We will need to find ways of breaking the link between economic development and increasing emissions of greenhouse gases, in particular CO₂. New technologies may emerge that will help to alleviate the problem, but they cannot be relied upon to solve it. Unequivocal evidence of the existence of human-induced climate change is unlikely to be available for some years, but meanwhile, taking a precautionary approach, we need to plan ahead now."

[Para.10.28]

Extract from Government White Paper, *Climate Change: The UK Programme*. (Cm 2427). January 1994.

20. Climate change has been an increasing preoccupation worldwide for the last quarter century; it profoundly affects energy policy everywhere. The First World Climate Conference was held in 1979; the Intergovernmental Panel on Climate Change (IPCC) was established in 1988 and published its First Assessment Report in 1990 for the Second World Climate Conference. That Report concluded that the concentration of greenhouse gases in the atmosphere had increased substantially as a result of human activity and that this was expected to enhance the natural greenhouse effect. At the Earth Summit in Rio in June 1992, over 150 countries signed the UN Framework Convention on Climate Change. Article 4 committed developed and certain other country Parties to "... the aim of returning individually or jointly to their 1990 levels ... anthropogenic emissions of carbon dioxide and other greenhouse gases ..." by the end of the decade.
21. In December 1995, the IPCC published its Second Assessment Report⁸ which stated that "... the balance of evidence suggests that there is a discernible human influence on global climate". This statement gave added impetus to the international negotiations in Geneva in July 1996 as part of the Conference of the Parties to the Framework Convention on Climate Change. In the words of the Environment Secretary, "... global climate change needs global action now. We have a clear message from the IPCC about what is in store for us if we do not act. The alarm bells ought to be ringing in every capital throughout the world".
22. The IPCC estimated that if no action were taken to curb the rise in carbon dioxide, methane and other greenhouse gases, the rate of climate change next century would be likely to be more rapid than it had been at any time during the last 10,000 years and sea level could rise by about half a metre by the end of the next century. In Britain, this could flood low-lying land, affect soils and crops, and imperil habitats including those of millions of migratory birds. Worldwide, the impact could be more dramatic, particularly for members of the Alliance of Small Island States, and for Bangladesh, Egypt and parts of China. Serious impacts are also expected on water supplies especially in the more vulnerable regions. Droughts and floods are likely to

⁸ *Climate Change 1995. The Science of Climate Change*. Working Group 1, Intergovernmental Panel on Climate Change. December 1995. Published also by Cambridge University Press, 1996.

become more intense and more frequent. Many living organisms, humans among them, would find it difficult to adapt to such a rapid rate of change.

23. Although climate change is expected to bring about an average increase in temperature worldwide, it is far from certain what the effects will be in particular localities. For example, it is possible that changes in the ocean current system could weaken the Gulf Stream and lead to cooler conditions in western Europe. By contrast, the Climate Change Impacts Review Group (CCIRG)⁹ has estimated that by the 2020s, the climate in the British Isles is likely to be about 1°C warmer and 5% wetter than the period 1961-90 and more geographically contrasted, with the dry southeast tending to becoming drier and the moist northwest becoming wetter. Droughts and floods might both become more common. Its report concludes that *"... changes in climate may lead to significant impacts ... and may require explicit adaptation policies and measures in certain sectors and areas"*.
24. Progress at international level in containing greenhouse gas emissions has been slow. About half of the major industrial countries look likely to fail to reduce emissions to 1990 levels by the year 2000. Although Britain is expected to meet its commitment, this success is largely due to the so-called dash for gas with coal-fired power stations being closed down in favour of new gas-fired stations. Meanwhile emissions are soaring in other countries and even if carbon dioxide emissions were to remain at 1994 levels, atmospheric concentrations would continue to increase for several hundred years. The Panel welcomes Government efforts to push forward international consensus and action on climate change, and supports, as a minimum, the proposal by the Environment Secretary that all industrial countries should aim to reduce greenhouse gas emissions to a figure between 5% and 10% below 1990 levels by the year 2010. Much greater reductions will be required later. **The Panel believes that the Government should continue to press other countries to meet their obligations for the year 2000 and recommends that the Government should strive to secure agreement, within the European Union and with the United States, on exacting new world targets beyond the year 2000 in time for the Third Conference of the Parties to the Climate Change Convention in Japan in December 1997.**
25. These aims impinge directly on the way in which all countries – industrial or otherwise – generate energy. Unless the major industrial countries give a lead, others are unlikely to tackle the problem effectively. In short, climatic factors must be brought more fully into decisions about the supply of energy and its use. In Britain the Government's pilot environmental accounts¹⁰ showed, for example, that in 1993 electricity generation contributed 1.5% of total value added (its share of gross domestic product) but produced 25% of greenhouse gas emissions; when emissions from electricity generators were reallocated to end purchasers of the energy, private households were revealed as the cause of 30% of greenhouse gas emissions. The accounts also contain information on the depletion of oil and gas reserves in 1993.

⁹ *Review of the Potential Effects of Climate Change in the United Kingdom. Conclusions and Summary.* Department of the Environment. July 1996.

¹⁰ *Pilot UK Environmental Accounts.* Office for National Statistics. *Economic Trends*, August 1996.

Building on this data and the Government's indicators of sustainable development, a way must be found for energy prices to reflect the effect of energy use on climate change and the need to develop alternative sources of supply.

26. The Government's view continues to be that its energy policy "... will best be achieved by means of competitive energy markets working within a stable framework of law and regulation to protect health, safety, and the environment"¹¹. But fossil fuel prices do not take account of damage to the environment, climate change and environmental costs generally; nor will the removal of subsidies or the introduction of more competition into energy markets ensure that environmental objectives are met. Indeed without bringing environmental factors into calculation of production costs, lower prices arising from competition could lead to continued waste of energy and discourage investment in energy saving and efficiency. A greater effort on energy conservation measures including incentives is therefore needed.
27. The availability of primary energy, as distinct from its use, is unlikely to be a major problem for the first half of the next century: at present rates of production and usage, proven reserves of fossil fuels are thought to be around 45 years for oil, 65 years for natural gas and 235 years for coal. While fossil fuels, particularly gas, will continue to have a role, most commentators (both in the industry and in the environmental lobby) expect renewable sources to become more important as their costs diminish. And environmental considerations will increasingly affect future choice of energy sources. The combined effects of environmental factors, technical innovation, financial pressures, restructuring and policies to reduce dependence on imported supplies, could lead to a much less carbon-intensive energy system, based on efficient, decentralized energy generation relying heavily on renewable energy sources. Some countries will look to nuclear energy, biomass, wind power and particularly to solar energy through use of photovoltaic cells. World energy markets are therefore likely to change significantly over the next century in response to these factors and to the predicted growth in world demand.
28. In Britain development of renewable energy has been piecemeal and has lagged behind initiatives elsewhere. The relative short-termism of competitive markets means that market forces alone will not lead to the development of renewable resources on the necessary scale. **The Panel considers that to reduce or even to contain emissions of greenhouse gases beyond 2000, the Government will need to develop a strategic energy policy which promotes energy efficiency and conservation in all sectors of society; incorporates costs relating to climatic factors into energy prices; and provides continuing support for non-fossil fuel sources of energy.**

¹¹ *The Energy Report. Change and Opportunity*. Department of Trade and Industry. HMSO, 1996. ISBN 0-11-515406-X.

The impact of agriculture on biodiversity

"The rapid growth in productivity [in agriculture] over the last 50 years has brought substantial economic benefits. The challenge for the future is to build on this success and to continue to produce an adequate supply of good quality food and non-food products while paying greater attention to the methods of production and their effects on natural resources and the environment." [Summary para.52]

Extract from Government White Paper, *Sustainable Development: The UK Strategy*. (Cm 2426). January 1994.

29. Agriculture is the main land use in Britain, covering nearly 80% of the total area. Much of today's countryside with its distinctive characteristics has been shaped by farming, and many current ecosystems have developed in response to agricultural practices. However farming methods in the past half century have changed rapidly as a result of policies which have favoured food production at the expense of the conservation of biodiversity and the protection of the landscape. In its second report the Panel examined the problems of forestry and the need for a strategic approach to integrate forestry with other land uses. This report focuses on agriculture in the wider context: how to reconcile continuing support for agriculture with the wider needs of rural communities, and the protection and where possible enhancement of the environment, its habitats, species and ecosystems.
30. The reasons for the adverse impact of agriculture on biodiversity include greater mechanization, increased specialization, higher use of agrochemicals and nutrients, simpler rotations, and the damage inflicted on existing habitats by such practices as land drainage. Many of these trends are driven by economic forces which are shared by other industries. All attempts to reconcile the pressures of modern agriculture with the conservation of biodiversity must take account of the need for British agriculture to be competitive with other producers and of the many other competing claims on the countryside.
31. Farming policy is influenced by both national and European agricultural policy and by external influences such as world trade negotiations. Despite the reforms of the Common Agricultural Policy (CAP) in 1992 and the objectives of the European Union's Fifth Environmental Action Programme, the environment still remains at the periphery of agricultural policy-making. There are strong pressures for further reform which are driven by the proposed enlargement of the European Union, the requirements of the World Trade Organization and concern that environmental objectives as well as rural socio-economic needs should be central to the CAP.
32. The Panel believes that the timing is propitious for a fresh initiative to reform the CAP through the current Inter-Governmental Conference and Britain's forthcoming Presidency of the European Union. This should aim at a significant redirection of funds from agricultural commodity support to direct environmental payments. The long-term objective should be to replace the CAP by a European Rural Policy of which a central objective would be to promote sustainable development, including

sustainable farming, in rural areas. **The Panel recommends that the Government should seek high-level support within the European Union for further and more fundamental reform of the CAP on these lines.**

33. In common with all Government policies, agricultural support measures should be evaluated in terms of their environmental implications. At present, agricultural payments are often in conflict with environmental objectives. This is particularly so in intensive arable areas and in areas of upland grazing. **In the short to medium term pending more radical reform of the CAP, the Panel recommends that environmental requirements should be attached to agricultural support payments so that payments are conditional on the farmer meeting minimum agreed standards set out in codes of practice.**
34. The Government's main instrument for encouraging environmentally sensitive management of land is the agri-environment programme. At present around 1.2 million hectares have been entered into agri-environment schemes. This represents about 6.7% of the total agricultural land in the British Isles and about 2.5% of expenditure on CAP schemes. There are in addition a number of schemes promoted by statutory agencies, local authorities and non-government organizations, which are designed to promote environmental objectives. Most of these can be described as pilot schemes from which valuable lessons have been learned, in particular the importance of developing policies which cover all aspects of land use. **The Panel considers that a major European Union initiative is needed to encourage Member States to draw up comprehensive incentives for land managers to secure and enhance a countryside rich in species, habitats and historical features.**
35. New agri-environment schemes are now needed to identify, conserve and enhance local biodiversity in the wider countryside. They should have clear objectives which reflect international, national, regional and local environmental policies. Farmers and other land managers are likely to respond more positively to policies which seek pro-actively to encourage the restoration of biodiversity than to policies which merely seek to protect through restrictions and punitive measures. While regulation has an essential role, the long-term objectives of reconciling competitive agricultural production with the conservation and enhancement of biodiversity will best be achieved by well-focused, practical schemes which command local support. Such schemes should be administered with one agency identified as the local coordinator, a practice being applied by government in other sectors.
36. In 1995, the Biodiversity Steering Group, set up under the UK Biodiversity Action Plan, published costed action plans for 116 threatened and endangered species and 14 key habitats of conservation importance, many of which are affected by agricultural practice.¹² Further work is in hand to implement these plans including the coordination of national and local biodiversity information systems. Local biodiversity action plans are now being prepared on a trial basis. The Panel considers that such plans, within the framework of the National Biodiversity Action Plan, should be a key

¹² *Biodiversity: The UK Steering Group Report*. HMSO, 1995. ISBN 0-11-753218-5.

component in formulating appropriate agri-environment measures. Farmers should be required to produce whole farm plans, drawing on the local biodiversity action plans, in order to qualify for environmental payments. They must be involved in the earliest phase of developing local biodiversity plans so that they are satisfied that the targets are both realistic and compatible with their business requirements.

37. Although modern agricultural practices are widely regarded as damaging to the environment, several pilot schemes have demonstrated that agriculture can enhance biodiversity while producing food competitively. The Government has promoted a number of initiatives designed to encourage the dissemination of best practice across industry. **The Panel considers that, in consultation with the agricultural industry and other interested parties, the Government should set national targets for agriculture to limit those features which have an adverse impact on the environment and to promote those which protect and enhance biodiversity and natural landscape.**

Air quality

38. Air quality is now an issue high on the political agenda, reflecting widespread public concern about the impact of transport-generated air pollution on health. In August 1996, the Government published a Consultation Draft of its National Air Quality Strategy; a final version is due to be adopted early in 1997. In November it published for consultation a proposal¹³ to widen the scope of its *Health of the Nation* strategy to establish the environment as a new 'key area' and to include outdoor air quality as one of the 'environmental health areas'. In December, the Government outlined for consultation information on how aspects of the air quality strategy were to be implemented, including the approach local authorities should take in reviewing and assessing air quality and a range of possible new powers to reduce air pollution in air quality management areas.
39. The Panel welcomes the target-based approach adopted by the air quality strategy. It remains to be seen whether the necessary resources will be made available at national and local level for the objectives to be achieved by 2005. Most of the measures required to improve air quality affect transport. The Government's recent Green Paper on transport¹⁴ recognizes increasing concern about the impacts of transport on the environment and about how far present levels of traffic growth are sustainable. But the measures required to tackle the unsustainable growth in road transport, to improve public transport and to promote greener forms of transport less harmful to the environment are not yet in place. **The Panel considers that stronger measures, both regulatory and fiscal, are required if air quality is to be improved.**

¹³ *The Environment and Health*. Consultative Document. Department of Health/Department of the Environment. November 1996.

¹⁴ *Transport. The Way Forward*. Cm 3234, HMSO, 1996. ISBN 0-10-132342-5.

Housing and land use planning

40. The suggestion in the Government's 1995 household projections that there could be up to 4.4 million more households in England between 1991 and 2016 has given urgency to the debate about the location of new housing and other development. The Government's Housing White Paper for England and Wales¹⁵ set the target that by 2005, half of all new homes should be built on reused sites. The Government's recent Green Paper on household growth¹⁶ notes that by 1993, 49% of new housing development in England was on previously developed land and invites views on an aspirational target of 60%. Nevertheless concern has been expressed in many quarters that without fundamental policy changes it will not be possible to maintain even current levels of use of previously used land and buildings and that much more new development will have to be located on greenfield sites.
41. Greenfield sites are generally easier and cheaper to develop than other sites. But their development imposes costs on the community as a whole in terms of increased traffic, demands for new infrastructure and degradation of the environment. Apart from loss of countryside, their development also contributes to the decline of existing urban areas. The Panel believes that complementary regulatory and fiscal measures are needed which would make it much more difficult for development to take place on greenfield sites and would encourage the use of previously used land. **It considers that ways should be found to bring these wider considerations fully into the costs of development.**

¹⁵ *Our Future Homes. Opportunity, Choice, Responsibility.* Cm 2901. HMSO, 1995. ISBN 0-10-129012-8.

¹⁶ *Household Growth: where shall we live?* Cm 3471. The Stationery Office, 1996. ISBN 0-10-134712-X.

REVIEW OF RECOMMENDATIONS IN FIRST AND SECOND REPORTS

42. In its first report the Panel made recommendations on four main topics: environmental pricing and economic instruments, environmental education and training, depletion of fish stocks and ozone depletion. It commented briefly on progress in these areas in its second report. It also considered four new topics: environmental accounting, biotechnology, forestry and the disposal of radioactive waste. This report now provides a brief update on these eight topics and suggests priorities for further action.

Environmental pricing and economic instruments

43. In its first report the Panel drew attention to the need for more detailed work on environmental pricing and advocated the wider use of economic instruments to ensure that environmental costs were properly taken into account. It also called for a gradual move away from taxes on labour, income, profits and capital towards taxes on pollution and the use of resources.
44. The Government has accepted that more needs to be done but, apart from the landfill tax and the annual increase in road fuel duties, there has been little progress in introducing economic instruments or greening the tax base. In its recent report¹⁷, the European Environment Agency concluded that, *"if environmental taxes are well designed ... they could deliver improvements in four key areas of public policy: the environment; innovation & competitiveness; employment; and the tax system"*. The Panel considers that the Budget offers scope for tackling positively key issues of sustainable development by taxing what is bad and rewarding what is good. **The Panel recommends that the Government should in future prepare and publish an overall assessment of the environmental consequences of measures in its annual Budget.**

Environmental accounting

45. In its second report the Panel recommended that the Government should give higher priority to the development of comprehensive systems of national accounts bringing together the three aspects of sustainable development, namely economic, environmental and social change.

¹⁷ *Environmental Taxes, Implementation and Environmental Effectiveness*. European Environment Agency. Environmental Issues Series No.1. Copenhagen 1996. ISBN 92-9167-000-6.

46. The Panel therefore welcomes the publication in August 1996 of pilot environmental accounts¹⁸ as a first step on this path; these complement the Government's sustainable development indicators¹⁹ published earlier in the year. The Panel notes the intention to bring production of radioactive waste and water emissions into the next year's accounts. **The Panel urges the Government to push ahead with further work on both national accounts and indicators and to seek to integrate the pilot accounts into the main national accounting framework.**

Environmental education and training

47. In its first report the Panel recommended that the Government should develop a comprehensive strategy for environmental education and training, and a database of educational resources; it also called for action to promote sustainable development in further and higher education institutions.
48. The Government's strategy for environmental education in England, published in June 1996, is disappointing. It reports on work in hand but lacks targets and specific funding. Its low key approach is inconsistent with the high profile and central role of education in promoting sustainable development. The various studies, completed or in hand, on environmental education materials are encouraging, and endorse the view that there is much more that could be done to improve education on environmental issues. In particular, the Panel commends the work by the School Curriculum and Assessment Authority on teaching environmental matters through the national curriculum²⁰.
49. The Review of the 1993 Toyne Report²¹ revealed that institutions of further and higher education showed "*considerable indifference*" to the recommendations in the Toyne Report. That report had recommended that such institutions should formally adopt and publicize, by the beginning of the academic year 1994/95, a comprehensive environmental policy statement, together with an action plan for its implementation. The "*vast majority*" of institutions had not done so. In most which had a policy at all, the focus was mainly on good housekeeping. The Review concluded that "*the size of the task of reorienting both academic and housekeeping practices tends to be underestimated and, in general, institutions have not made the link between environmental management and quality management. Hardly any progress has been made in respect of curriculum 'greening'*". **The Panel considers that this indictment of progress in one part of the education sector reaffirms the need for a much stronger lead from Government to build the principles and practices of sustainable development into all areas of the formal education system, as well as through a range of measures to**

¹⁸ *Pilot UK Environmental Accounts*. Office for National Statistics. *Economic Trends*, August 1996.

¹⁹ *Indicators of Sustainable Development for the United Kingdom*. Department of the Environment/Government Statistical Service. HMSO, 1996. ISBN 0-11-753174-X.

²⁰ *Teaching Environmental Matters through the National Curriculum*. The School Curriculum and Assessment Authority, 1996. ISBN 1 85838 123 1.

²¹ *Environmental Responsibility. A Review of the 1993 Toyne Report*. Shirley Ali Khan. HMSO, 1996. ISBN 0-11-753298-3.

industry, commerce and the wider community. So far as universities are concerned, the Panel continues to commend endorsement of the Talloires Declaration of 1990²².

Depletion of fish stocks

50. In its first report the Panel called for a review of the decommissioning scheme; the establishment of an Intergovernmental Panel on the Oceans; and for the Government to take a lead in promoting, in Europe and worldwide, long-term policies for the conservation of fish stocks and the protection of the marine environment.
51. Following on from the 1995 London Oceans Workshop, the UN General Assembly agreed in 1996 to strengthen the existing machinery for coordination of policies on the oceans. This is a high priority although the current proposals fall short of establishing a new Intergovernmental Panel which the Panel still believes is needed to promote a rational and sustainable use of world fishery resources. The long-term sustainability of fish stocks is threatened worldwide, bringing with it potentially severe consequences in terms of food security and employment and jeopardizing relationships between communities and countries. The fundamental problems identified in the Panel's two previous reports – of fish stock depletion and wastage alongside massive subsidies – remain unchanged.
52. During 1996 there have been discussions within the European Union on proposals to bring fleet capacity into better balance with what stocks will bear. Progress on this central problem is essential, and should not be delayed by debate on the problem of quota-hopping (for which a number of solutions can be envisaged). Britain urgently needs to work out with its European partners a system of controls to maintain sustainable fisheries for this and future generations. **To promote consensus on possible solutions, the Panel recommends that the Government should bring together representatives of the fishing industry, local fishing communities, scientists, conservationists, retailers and consumers in a new advisory forum.**

Ozone depletion

53. In its first report the Panel identified three priorities for action: breaches in the Montreal Protocol; the need for monitoring the effects of ultraviolet radiation at ground level; and the case for targets to phase out HFCs (used as substitutes for CFCs and HCFCs but with a high global warming potential).
54. The Eighth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer took place in November 1996. Limited progress was made on measures to assist developing countries to meet the controls on ozone depleting substances and on problems related to non-compliance by Russia. In October 1996,

²² *University Presidents for a Sustainable Future: The Talloires Declaration*. Tufts University European Center, 1990.

the Department of the Environment held a seminar on *Combating Environmental Crime* at which measures to tackle the illegal trade in ozone depleting substances were considered.

55. Following the Panel's recommendation, the Department of the Environment established a working group to look at the impacts of ultraviolet (UV) radiation at ground level. Its recent report²³ confirms that "... UV radiation can have significant effects on many processes. However at present serious gaps in our knowledge make it impossible to quantify precisely the damage resulting from decreased ozone levels". The report concludes that "if the commitments under the Montreal Protocol are fulfilled and other atmospheric factors do not exacerbate chemical ozone depletion, the increase in UV over the next few decades should be temporary and the resultant damage containable". Nonetheless, as the report points out, increased exposure to UV radiation will increase the likelihood of deleterious effects on biological systems, including in humans the increased risk of skin cancers and damage to the immune system. It estimates that ozone depletion expected over the next few decades will contribute to an additional lifetime risk of skin cancer in children alive today of between 4 to 10% greater than expected in the absence of ozone depletion. **The Panel believes that continued monitoring of the impact of levels of UV radiation is therefore essential to assess the adequacy of measures under the Montreal Protocol.**
56. The Panel notes that more Government/industry voluntary agreements have been drawn up to limit emissions of HFCs and urges both parties to continue to explore ways of replacing ozone depleting CFCs and HCFCs by alternatives which are not greenhouse gases.

Biotechnology

57. In its second report the Panel recommended that the Government should take steps to secure international agreement to a comprehensive protocol on genetically modified organisms (GMOs); bring together interested bodies in this country to draw up principles governing biotechnology and GMOs; and consider with others in the European Union systems for impact appraisal, liability and emergencies following commercial releases of GMOs.
58. The Panel notes that the working group established by the Conference of the Parties to the Convention on Biological Diversity has now met and will be meeting again during 1997 with the aim to have a draft biosafety protocol ready by 1998. Following the Panel's recommendation, the Department of the Environment is organizing a national conference in March 1997 to establish likely developments in biotechnology, their benefits and broad implications for human health and environmental safety, and how these will influence the principles on which biotechnology regulation is based.

²³ *The Potential Effects of Ozone Depletion in the United Kingdom*. The Stationery Office, 1996. ISBN 0-11-753313-0.

This conference is timely. Recent moves to introduce GMOs (for example genetically modified soya) into European food markets have exposed concerns about their long-term safety and emphasized the importance of giving consumers information on which to make a choice. These problems reinforce the need for the Government to keep under review current systems for the assessment of environmental impact, risk appraisal and liability in the development and use of GMOs.

Forestry

59. In its second report the Panel recommended that the Government should draw up a national forest strategy supported by regional strategies containing targets with incentives to meet them.
60. The Panel notes several initiatives and consultation exercises in different parts of the country, including the publication of a joint Forestry Commission and Countryside Commission discussion paper on woodland creation in England²⁴. The progress report on *Sustainable Forestry: The UK Programme* is still awaited. **The Panel reiterates the need for the Government to develop a national strategy and supporting regional strategies for forestry.**

Disposal of radioactive waste

61. In its second report the Panel recommended that the Government's research strategy on radioactive waste should be widely based, covering intermediate-level waste and all options for disposal; and that the Government should review the way in which information is provided and decisions taken.
62. The Panel notes that work on the research strategy into disposal of high-level waste and spent fuel will start shortly and is expected to take two years. The conclusions of a recent study for the Department of the Environment suggested that a large effort to research and develop partitioning and transmutation would not be justified in this country but that research elsewhere should be kept under review. The Radioactive Waste Management Advisory Committee is expected to publish in January 1997 its advice to Government on the proposals by Nirex for publishing the results of its scientific programme.
63. The Panel remains concerned about shortcomings in this country and abroad in tackling the serious problems of radioactive waste. **It believes that the future role of nuclear power, the options for handling radioactive waste, and the danger that nuclear waste might contribute to the proliferation of nuclear weapons, are all issues which warrant urgent consideration at the highest international level and on which the Panel urges the Government to take a lead.**

²⁴ *Woodland Creation: Needs and Opportunities in the English Countryside*. Forestry Commission/Countryside Commission 1996.

ANNEX

ORGANIZATIONS AND INDIVIDUALS WHO SUBMITTED WRITTEN PAPERS OR COMMENTS ON TOPICS

Government Departments

Ministry of Agriculture, Fisheries and Food
Department of the Environment
Department of Trade and Industry
HM Treasury

Other organizations

Association for the Conservation of Energy
Biotechnology and Biological Sciences Research Council
British Agrochemicals Association Ltd
British Butterfly Conservation Society Ltd
British Herpetological Society
British Standards Institution
British Trust for Ornithology
Business in the Environment
Buying Agency
Conservation Communications
Council for British Archaeology
Council for the Protection of Rural England
Country Landowners Association
Countryside Commission
Countryside Council for Wales
Energy Saving Trust
English Nature
Environment Agency
Farmers' Union of Wales
Federation of Small Businesses
Friends of the Earth
Game Conservancy Trust
Greenpeace
Institute of Biology

Institute for European Environmental Policy
 LEAF (Linking Environment and Farming)
 Local Government Management Board
 National Energy Foundation
 National Farmers' Union
 National Society for Clean Air and Environmental Protection
 National Trust
 Natural Environment Research Council
 Royal Botanic Garden Edinburgh
 Royal Institute of International Affairs
 Royal Society for the Protection of Birds
 RURAL (Responsible Use of Resources in Agriculture and on the Land)
 SAFE Alliance (Sustainable Agriculture, Food and Environment)
 Scottish Natural Heritage
 Scottish Wildlife and Countryside Link
 Shell International – London
 UK Centre for Economic and Environmental Development
 Wildlife and Countryside Link
 Wildlife Trusts
 World Energy Council
 WWF-UK (World Wide Fund for Nature)

Individuals

Professor I Fells, University of Newcastle
 Mr J S Flemming, University of Oxford
 Professor C H Gimingham OBE, University of Aberdeen
 Mr D Green, Combined Heat & Power Association
 Mr C Haskins, Northern Foods plc
 Professor Sir John Horlock, Royal Society
 Professor J S Marsh CBE, University of Reading
 Dr C H Osman
 Professor D Pearce, Mr D Maddison, Mr N Adger and Ms H McLeod, Centre for Social and Economic Research on the Global Environment (CSERGE), University College London and University of East Anglia
 Professor C M Perrins LVO, University of Oxford
 Mr J Robertson
 Dr P A Rowlatt, National Economic Research Associates



