

## DEBATE SUMMARY

### **The business of the environment: can the tension be resolved between resource extraction and environmental protection?**

Held at The Royal Society on 24<sup>th</sup> June, 2015.

The Foundation is grateful to The Michael John Trust and the Willis Group for supporting this debate.

This debate was one of a series of events celebrating the fiftieth anniversary of the creation of the Natural Environment Research Council.

The hash tag for this debate is #fstenvironment .  
Audio files of the speeches are on [www.foundation.org.uk](http://www.foundation.org.uk) .

- Chair:** **The Earl of Selborne GBE FRS**  
Chairman, The Foundation for Science and Technology
- Speakers:** **Professor Duncan Wingham**  
Chief Executive, Natural Environment Research Council  
**Professor Simon Pollard**  
Pro-Vice-Chancellor, School of Energy, Environment and Agrifood, Cranfield University  
**The Lord Oxburgh KBE FRS HonFREng**  
House of Lords
- Panellist:** **Professor Jane Francis**  
Director, British Antarctic Survey
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PROFESSOR WINGHAM said that issues of environmental science were now high on the national agenda, often higher than in other countries. Debate on the subject, involving development goals, had increasing environmental and social aspects. It was no longer a question of resource extraction versus development. With many natural resources now diminished or exhausted, it was more than ever necessary to define what we were protecting and why. Hence the value of the NERC which could give independent scientific advice on such issues as the impact of CFCs on the ozone layer (which led to the Montreal Protocol); variations in air quality, and the effects of pollution on biodiversity; and how best to cope with the changing environment (for example risks from sea level rise or extreme flood events). It was debate on such issues which led to the creation of the NERC. The sort of problems which it now faced was how to set out safe limits to pollution of water and air, limits to loss of biodiversity, and determination of a viable economic framework for society that recognised natural capital.

PROFESSOR POLLARD said we had to work out strategies for reframing the role of environmental sciences in a green economy, set up a circular economy, which could mend itself where necessary, and establish new skills in systemic risk, creation of resilience and appropriate use of

big data. In a few words this meant decoupling economic growth from extraction of resources, and work on how to do business which could take account of such factors as environmental governance, self-regulation, capacity for adaptation, respect for ethical standards and ability to take account of innovation, particularly in the field of technology. Here the role of the NERC was vital. In a few words we were now living in a world in which business, government and ordinary citizens were having to manage more volatility, uncertainty, complexity and ambiguity. The World Bank had set out a changing pattern in natural disasters, including such weather related events as floods, droughts, tsunamis, extreme temperatures and wildfires. The place of the NERC in all this was crucial.

LORD OXBURGH spoke of the need for us to take due account of the enormous changes taking place in a world created by humans who should be seen as an invasive species with multiplying numbers and increasing demand on resources. Our approach should involve better coordination of skills and disciplines. Somehow we had to decide how to go for sustainability, protect resources of natural capital, improve our understanding of how natural systems worked at global, regional and local level, and correctly assess the effects? Some issues were easier to understand than others, especially at local rather than global level: for

example acidification of the oceans, increases in greenhouse gas emissions, the effects of acid rain, or the impact of such projects as the Athabasca and North Alberta oil sands using opencast mining and hydrogenation of the extracted bitumen. The next big challenge involved the issues surrounding the exploitation of the Arctic. In most cases governments were those principally involved, faced by the need for new regulatory arrangements and promotion of better understanding of the issues involved. A good example in Britain was the current debate over on-shore shale gas which was a substantial but unpopular resource. In all this the importance of the NERC was paramount: to bring many apparently unrelated issues together, indicate the opportunities for exploitation of resources, with appropriate regulation based on scale, proportionality, and understanding of science. Most people in business and industry understood this, and wanted impartial advice independent of government.

Introducing the first discussion period, PROFESSOR FRANCIS said that the role of the British Antarctic Survey was a good example of what could and should be done. It had already been approached by industry and was working with it. Development of the Arctic and Antarctic offered great opportunities, but science had to establish the parameters of future action by the littoral States in the Arctic and under the framework of the Antarctic Treaty in the Antarctic. Here the role of the NERC could be critical.

In debate before dinner, some critical problems for society were raised: for example how to cope with inertia in coping with existing problems, how better to use existing infrastructure, especially in the field of energy, how to cope with climate change and its enormous effects, bearing in mind the particular responsibilities of industrial countries and general problems of equity. Here the current debate, leading to the UN Framework Convention on Climate Change Conference of the Parties in Paris in November/December 2015, had already brought out differences of approach.

It was important that science should be critical in putting together advice, some of it private and

some of it through governments. The question was and remained how to assess the interests involved to make the right judgments, in many ways the more local, the more difficult. There was a need to engage the general public at an early stage and for such organizations as the NERC to give genuinely independent advice. It needed to do more to assess the consequences of new technologies: a good example was the impact of solar farms that occupied previously agricultural land. At present there was a conspicuous lack of scientists in Parliament, particularly the House of Commons, so the scientific case was not always made at the right level. Each part of the world had its problems, for example tensions in China where there was a paramount need to maintain social stability with the result that such longer-term problems as climate change could not be dealt with as soon as was desirable.

The discussion after dinner related primarily to the role of the Research Councils, and coordination between them and the international community generally. Non-Governmental Organizations served a useful role in drawing attention to problems but not necessarily in finding solutions to them. Somehow we had to make better use of the science that was available, and assess the enormous risks that society now faced. There were also the legal aspects. How best to protect citizens and protect their assets? In spite of the work of the Research Councils, science did not always have the role it required. For example should there be a Chief Scientific Adviser reporting to the Governor of the Bank of England? More generally environmental awareness was increasing all the time, and there was a growing need to improve the functions of the Research Councils, determine their objectives, improve their assessments of risk, and achieve better coordination between them.

In summing up the debate, LORD SELBORNE drew particular importance to better valuation of natural capital and the need to make better use of opportunities for developing the green economy.

Sir Crispin Tickell GCMG KCVO

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The Business of the Environment

[www.nerc.ac.uk/latest/publications/strategycorporate/strategy/the-business-of-the-environment](http://www.nerc.ac.uk/latest/publications/strategycorporate/strategy/the-business-of-the-environment)

AngloAmerican

[www.angloamerican.com](http://www.angloamerican.com)

Arts and Humanities Research Council

[www.ahrc.ac.uk](http://www.ahrc.ac.uk)

BHP Billiton

[www.bhpbilliton.com](http://www.bhpbilliton.com)

Biotechnology and Biological Sciences Research Council

[www.bbsrc.ac.uk](http://www.bbsrc.ac.uk)

BP

[www.bp.com](http://www.bp.com)

British Academy

[www.britac.ac.uk](http://www.britac.ac.uk)

British Antarctic Survey

[www.antarctica.ac.uk](http://www.antarctica.ac.uk)

Department for Business Innovation and Skills

[www.gov.uk/government/organisations/department-for-business-innovation-skills](http://www.gov.uk/government/organisations/department-for-business-innovation-skills)

Economic and Social Research Council

[www.esrc.ac.uk](http://www.esrc.ac.uk)

Engineering and Physical Sciences Research Council

[www.epsrc.ac.uk](http://www.epsrc.ac.uk)

Glencore

[www.glencore.com](http://www.glencore.com)

Government Office for Science

[www.gov.uk/government/organisations/government-office-for-science](http://www.gov.uk/government/organisations/government-office-for-science)

House of Lords and House of Commons Science and Technology Select Committees

[www.parliament.uk/hlscience](http://www.parliament.uk/hlscience) and

[www.parliament.uk/business/committees/committees-a-z/commons-select/science-and-technology-committee/](http://www.parliament.uk/business/committees/committees-a-z/commons-select/science-and-technology-committee/)

Medical Research Council

[www.mrc.ac.uk](http://www.mrc.ac.uk)

Natural Environment Research Council

[www.nerc.ac.uk](http://www.nerc.ac.uk)

Rio Tinto

[www.riotinto.com](http://www.riotinto.com)

Severn Trent

[www.severntrent.com](http://www.severntrent.com)

The Royal Society

[www.royalsociety.org](http://www.royalsociety.org)

The Royal Society of Edinburgh

[www.royalsoced.org.uk](http://www.royalsoced.org.uk)

Science and Technology Facilities Council

[www.stfc.ac.uk](http://www.stfc.ac.uk)

Shell

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