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The Scientific Advisory System

This document is the Royal Society's response to the current House of Commons Science and Technology Select Committee inquiry into the scientific advisory system. It has been prepared by a group chaired by Sir William Stewart; other members were Professor Roy Anderson, Professor Julia Higgins, Sir John Houghton, Sir Dai Rees, Sir Martin Rees, Lord Selborne, Professor Ian Shanks and Dr Peter Collins (Secretary). It has been endorsed by the Council of the Society.

Introduction

At the outset we acknowledge that scientific advice is but one part of the broad swathe of advice that Ministers regularly require in order to discharge their duties effectively. But we contend that in a world increasingly dominated by the products and processes of science and technology - in education, in health, in business, in the environment and in many other areas - the provision of sound scientific advice is crucially important. Further, in comparison with most other countries, the quality of the scientific advice offered to the UK Government is generally high. Nevertheless, the current inquiry into BSE by Sir Nicholas Phillips should throw a great deal of light on the deficiencies that can and do exist in the interplay between scientific advice, the Civil Service and political decision-making. We welcome his decision to conduct his inquiry as openly as possible, and believe that his inquiry will demonstrate the difficulties that can arise at national and indeed international level when scientific findings are not made readily available and are thus protected from scientific challenge, and when the advice proffered is used selectively.

Culture

We welcome indications that the current Government is seeking to conduct its affairs more openly. We recognise that confidentiality can often be important, but believe that a policy that favours extensive use of confidentiality and the Official Secrets Act irrespective of need is unhealthy and counterproductive.

Ministers in general and senior civil servants in particular are often untrained in analysing and assimilating scientific advice, especially in relation to areas of public policy that have far-reaching implications. Even where advice is based on the most recent scientific results, it may be inconclusive, especially if the field is advancing rapidly and critical experiments are still in progress. Scientific advice may therefore often do no more than point to a balance of probabilities. It is then up to the Minister and senior civil servants to judge how to assess the relative risks of the possible courses of action and to decide, on political and other criteria, how to proceed. The difficulty of dealing with such uncertainty may encourage defensive behaviour such as controlling access to information and not sharing problems with colleagues (especially colleagues in other Departments). We believe that this approach is influenced by a Whitehall culture that puts a premium on having an

answer for every situation, in a context where few have had scientific training but where decisions are required irrespective of the scientific robustness of the case or the quality of the scientific advice given.

It is notable that the Chief Scientific Adviser found it necessary in March 1997 to issue a paper, *The use of scientific advice in policy making*, in which he emphasised the importance of integrity in collecting and assessing factual evidence, openness in soliciting and interpreting advice, honest acceptance of scientific uncertainty and full public explanation of how the advice received has been applied to making policy. We strongly endorse that approach.

It may be that the failings exposed by the BSE story will catalyse change; but the system has proved resistant to change on many occasions in the past. This is epitomised by the axiom that advice to the Minister is confidential, which on only very few occasions has been breached - for example, for a brief period during the 1980s when the ABRC's advice about the allocation of the Science Budget was published. If the present Select Committee inquiry can help to reduce the secrecy that characterises Whitehall, it will perform a valuable service towards improving the quality of public policy-making.

Recommendation 1: There should be a presumption that scientific advice to Government will be made openly available, unless it is demonstrably against the national interest to do so.

Sources of advice

The Government, and individual Departments, have access to many sources of scientific advice. Some of these are located inside Government or are owned or funded by Government, while others are outside and independent of Government. This diversity is valuable. We believe that it is impossible for Government Departments to retain, in-house, adequate capacity for all the scientific advice they need - because of the rapid and unpredictable advance of scientific knowledge, and because in-house scientists inevitably tend to get caught up in immediate short-term issues. Moreover, insider sources are controlled by the Official Secrets Act and, as mentioned above, are generally not free to publish their advice. Outsider bodies, too, may have shortcomings: for example, those dependent on income from Government may not always be wholly objective.

We consider the following sources of scientific advice to be particularly useful.

Ad hoc committees of relevant experts, appointed on a personal basis to provide expert advice on a specific issue and disbanded when the task is completed.

Independent bodies of international reputation, such as the Royal Society, the Royal Academy of Engineering and the Academy of Medical Sciences. Advice from such sources brings with it the endorsement of internationally recognised peers.

Standing committees in some areas of special interest, such as the Defence Scientific Advisory Committee.

Widespread consultation for specific purposes, such as that employed in the Foresight process.

Recommendation 2: The Government should make much more use of independent, external sources of advice. The generally authoritative and disinterested nature of such sources adds greatly to the public credibility of policies based on their advice.

Chief scientific advisers

Departmental CSAs were established as part of the Rothschild reforms in the early 1970s, to ensure that Departments could act as intelligent customers for, and users of, the research they commissioned. However, in most Departments their formal position has been emasculated since then, with the result that it is more difficult for them at their own initiative to raise issues with Ministers. While force of personality counts as much as formal rank, the right of direct access is crucial. A key role for CSAs is to get Ministers to recognise when a problem exists on which scientific advice should be sought. To be effective, CSAs must therefore participate in the critical policy groups and have the total support of the Permanent Secretary. At the same time, they must maintain extensive networks with the scientific community outside the Department so as to be alert to up-to-date issues and discoveries and know where to go for the best advice. CSAs must also be able to guide Ministers and Permanent Secretaries on the range of policy options available to them in the light of the scientific understanding of a given issue.

The key adviser in the system is the Chief Scientific Adviser to the Government, who has direct access to the Prime Minister and to all members of the Cabinet. This direct access must be sustained. His importance however is rightly determined by the views of the Prime Minister, the Cabinet and the Cabinet Secretary, as well as the scientific community.

We understand that the transdepartmental role of the Chief Scientific Adviser means that in general he focuses only on issues that affect Government *across* rather than *within* Departments. This transdepartmental role stems from the days when the CSA was located within the Cabinet Office, which dealt mainly with transdepartmental issues. These considerations lead us to the following recommendations.

Recommendation 3: There must be more openness and a fuller involvement of the Chief Scientific Adviser in scientific issues within each Government Department. To enable that to happen, the CSA should routinely be involved in meetings of appropriate Cabinet Committees, and should be alerted by the Cabinet Secretary to all S&T issues being considered at Cabinet level. He should, further, be copied the papers on S&T related issues emanating from within Departments and from specialist committees such as the Spongiform Encephalopathy Advisory Committee.

Recommendation 4: The CSA should retain his role in inputting advice directly to the Treasury and the Prime Minister on issues concerning S&T related expenditure within and across Whitehall.

Recommendation 5: In promoting the UK as a global leader and G7 country, it is important that the Government in its international dealings should promote the UK as a high technology base. In this connection, the CSA should routinely advise the Government on international scientific issues, and should normally accompany the Prime Minister during official visits to other countries.

Recommendation 6: Key issues arising within as well as across Departments should be raised at the Committee of Departmental Chief Scientists chaired by the CSA. We recognise that a useful start has already been made on strengthening transdepartmental coordination, but more needs to be done.

The Chief Scientific Adviser should be sufficiently professionally eminent to make an impact irrespective of his institutional location. However, whilst located within the DTI the CSA not only has direct access to the Prime Minister and Cabinet colleagues but also reports to the Minister for Science and the Cabinet Minister responsible for science who, in turn, themselves seek direct input to the Prime Minister on science issues. This may lead to difficulties.

Recommendation 7: If the OST is not to evolve into a full Ministry for Science, the CSA should be moved closer to the Prime Minister's Office again. Relocation to within the Cabinet Office would be one possibility, if a culture more sympathetic to science were to emerge there. A preferable alternative would be to relocate the CSA within the No 10 Policy Unit, where a small but effective and influential Chief Scientist's Office could be established.

There is a general issue of whether the CSA should have an S&T budget. This depends on what future arrangements are set in place concerning the location of the CSA. If the status quo remains, we reiterate what was said in the Society's 1992 report *The future of the Science Base*, which argued that the Minister for Science should have about 2% of the total Government spend on R&D to facilitate transdepartmental activities and certain EC-sponsored projects.

Vision

We recognise that, without a great deal of effort, the demands and time constraints of office in Whitehall make it difficult to exercise long-term vision except in the most superficial way. The tendency towards short-termism is reinforced by the way arguments over budgets, for example in PES negotiations, are focused on what can be measured before the next PES round. A similar phenomenon can be seen, we understand, in the performance objectives set for the Chief Executives of Research Councils. We believe nevertheless that successful Governments will be those that act to preserve long-term benefits despite the super-abundance of short-term and fire-fighting issues. It is important therefore to seek to ensure that appropriate building blocks for the long term are in place. It is the role of the Chief Scientific Adviser to show that strategic vision, to harness the inbuilt energy and resource of the scientific community, and to shape a positive way forward not just over the next 12 months but over the next decade.

Despite the important issues of the moment, which can often be addressed by, for example, time-limited ad hoc groups, we consider it essential that longer-term strategy, such as that related to Europe and against a global backcloth, be a key part of the CSA's remit. There is a danger unless firm action is taken that strategic vision and its implementation will be drowned by over-emphasis on daily pressures.

Recommendation 8: Realistic mechanisms should be developed to help ensure that the CSA preserves and enhances the longer-term vision essential for any country that seeks to be a global leader in the next century.

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