

Royal Society Comments on the Government's Interim response to the Report of the BSE Inquiry

Summary

- An understanding of the underlying scientific principles, set in the widest context, is essential when developing many policies of concern to central Government and the public services. It is therefore essential that policy makers have access to the best possible scientific advice.
- The Government has issued some robust guidelines on scientific advisory committees, but there is a danger that its context has been interpreted too narrowly and only seen as relevant to crisis management, rather than being embedded within the Department's overall strategy, and particularly its risk management strategy.
- Scientific advisory committees should be independent and have well defined terms of reference.
- It is important to be able to make full use of the expertise available across the UK and from abroad, and in some cases this will require open and transparent arrangements for conflicts of interest.
- The secretariat of any committee should report to the chairman rather than being in the policy line.
- The operation of advisory committees should be as open as possible. The publication of advice puts it in the public arena and gives an opportunity for consideration by others in the science base.
- There must be satisfactory ways of considering the spectrum of scientific opinion, bearing in mind on the one hand the danger of scientific conservatism and on the other that some dissenting opinions may have no scientific basis or are otherwise misconceived.
- There must be a clear audit trail of how decisions were reached so that if new evidence become available it is easy to check whether this requires the decision to be reopened.
- The key to the management of Departments research is for it to be generally open to competition, but it is also important to encourage collaboration between Government research laboratories and others in the science base.
- For new and complex situations such as the emerging BSE epidemic, there is a case for the Chief Scientific Adviser establishing a small advisory research committee to take stock of existing knowledge and current research programmes and to advise the relevant Departments and Research Councils where further work is required.

A. OVERVIEW OF SCIENCE GOVERNANCE

1. An understanding of the underlying scientific principles, which should be taken to include economics and the social sciences and the knowledge base underpinning engineering and medicine, is essential in developing many policies of concern to central Government, the National Health Service and other public agencies. It is therefore crucial for policy makers at all levels to have access to the highest quality scientific advice. However, recent health, food safety and environmental problems, most notably BSE/vCJD, have raised doubts about the ability of both the Government to understand and make best use of proffered scientific advice and the scientific community to reach a consensus where there are still uncertainties in the evidence.
2. The Phillips Report¹ provides a comprehensive picture of the shortcomings on both sides during the developing BSE epidemic up to 1996. The Council of the Royal Society therefore established a Working Group, with membership listed at the end of this statement, to advise it on the science governance issues raised by the Phillips Report and on the consultation by the Office of Science and Technology (OST) on a draft code of practice for scientific advisory committees. The Society issued a response to the latter in December 2000².
3. After considering the Government's interim response³ to the Phillips Report, which is in the form of a consultation document for which responses are requested by 11 May, the Working Group drafted the following statement of some general principles, building on its earlier response to the draft code of practice for scientific advisory committees, and in Chapter B a commentary on the questions raised in Chapter 4 – Science and Government, Chapter 5 – Openness, and Chapter 6 – Risk and uncertainty, of the Government's interim response.

1 Introduction

4. Over the past four years the Government has issued a range of documents that have a bearing on the issues of science governance, some of which predate the publication of the Phillips Report. These include the following OST documents:
 - Guidelines 2000 Scientific Advice and Policy Making, July 2000 (first version 1997)
 - A draft Code of Practice for Scientific Advisory Committees, March 2001
 - Review of risk procedures used by Government Advisory Committees dealing with Food Safety, July 2000
5. OST is to be commended on the preparation of these documents and on the way that it monitored and evaluated the guidance on the use of scientific advice. Nevertheless, it is important to recognise that while such guidance documents are important, they are not in themselves sufficient to ensure that major problems such as BSE, or indeed major public projects or policy issues, will be handled adequately in the future. It is the way that the guidance and codes are incorporated into overall Departmental and cross-Departmental systems that is important. It is less than clear, for example, that the Government's response to the Foot and Mouth outbreak has taken the guidance fully into account, for example: in the use made of epidemiology at all stages; in its consideration of relative risks of various ways of disposing of slaughtered animals; of the process of vaccination and the long term management of stock; and of cross Departmental issues such as the links between farming and the tourist industries.

6. It is important not to underestimate the difficulties of developing and subsequently implementing agreed policy, particularly in circumstances such as the developing BSE situation, where at least five major generic problems can be identified:
 - a. lack of definitive or conclusive scientific facts;
 - b. differing scientific interpretations of the available inadequate information;
 - c. the need for Ministers and officials to decide on a **proportionate** response with at least some of the possible ways forward having large opportunity costs, economic impacts on sections of the community or increased risks in the wider picture;
 - d. hard pressed officials, the more senior having many other urgent concerns, under pressure to advise on the way forward from: Ministers; opposing stakeholders; public opinion; and the media;
 - e. difficulty in public admission of uncertainty.

Furthermore, there is a danger that in the next crisis, while officials will take great care to avoid the specific mistakes identified in the BSE inquiry, they may well make other mistakes leading to an inappropriate response to the problem, and officials need to be alive to this danger.

7. To cope effectively with a crisis situation demands the highest skills and professionalism by all parties. It is still to be shown that the recent changes to the operation of the Civil Service following the Modernising Government White Paper (March 1999)⁴ will be sufficient to make the necessary changes to the "Whitehall Culture", which in the past has tended to emphasise policy development rather than the management of its implementation. Furthermore, for their part, there may well be important lessons to be learnt by the scientific community, particularly with regard to reconciling different interpretations of scientific information, and especially where minority opinions are being voiced outside of the scientific establishment.
8. It must also be recognised that while best practice for the arrangements for securing scientific advice points to a separation of advice from policy making (see next section), this itself causes potential interface problems. For example, officials may not be able to understand the full implications of the scientific advice and, equally, the scientific advisers may not have sufficient practical knowledge of the overall system under consideration to ensure that they are putting their advice in the correct context.
9. It is crucial to take more account of the people involved, and make sure that we have:
 - Officials with the right skills and breadth of view
 - Science advisers with appropriate knowledge and good communications skills
10. It is also important to take the widest possible view of areas that might be affected by the issue in question and to explore whether potential solutions might lead to severe adverse implications in other areas. This is particularly a difficulty where these areas are the responsibility of another Government Department, or where a solution might result in the export of a problem overseas, possibly to developing countries less able to handle the problem.
11. Large high technology companies have built risk assessment and risk management into their overall operating procedures, rather than see them as a fire-fighting bolt-on. Government Departments similarly need to ensure that they have in place similar overall processes. Identifying the need for, and obtaining, scientific advice should be an integral part of this. This message has underpinned the Chief Scientific

Adviser's guidance over the use of scientific advice, but there is a danger that this has been interpreted too narrowly and only seen to be relevant to the highly technical aspects of a Department's portfolio to allow it to manage in a crisis, rather than as part of a total integrated system able to manage the entirety of the risks facing all the relevant Departments.

2 The Context of Science Advice

12. The UK's science base is an important resource that can potentially provide expert scientific advice in all areas of potential concern, and can also provide access to the leading experts elsewhere in the world. It can be accessed through a number of different routes including: ad hoc enquires of individual scientists; national academies; Research Councils and learned societies; and ad hoc and standing committees established by the policy makers. In addition, national academies, Research Councils and other bodies may independently establish groups to explore a scientific issue that they consider should be taken into account by Government or other national or international public bodies.
13. It is important that the Government has a robust mechanism for deciding on the best approach in a particular circumstance. One important criterion is that of timing. In urgent cases, the establishment of a formal committee may take too long. The Phillips Report makes this clear over the delay in getting answers to the most urgent questions while the Southwood Committee was being established, and the foot and moth epidemic underlines the need to put such advisory groups together, on occasions, on a timescale of days. The Chief Scientific Adviser, possibly in consultation with the appropriate national academy, should be in a position to advise on the most appropriate way forward, including any urgent interim arrangements while a scientific advisory committee is being established. Similarly, while committees can be expected to advise on risk assessment, it is for the Department to be responsible for risk management.
14. In all cases it is important to recognise that the scope of the advice is limited by the expertise of the person or members of the group or committee providing the advice. In particular, it is essential for a scientific advisory committee not to advise on policy issues unless this is included in its terms of reference and the committee has appropriate expertise. It should certainly not accidentally stray into policy formulation, which should remain the responsibility of the relevant executive body and in most national issues ultimately for Ministers.
15. There will be times when independent bodies, such as national academies or learned societies, may wish to comment on science policy issues, as a voice of a particular community. In which case it is important to distinguish between such commentaries on policy, and advice on scientific evidence and its interpretation. While we would not claim that the latter will ever be entirely value free, it will be important for the policy maker to be able to distinguish between the two extremes and also intermediate cases.

3 Science Advisory Committees established by the Policy Maker

16. Particular issues that need to be considered carefully include:

Role

- It is important to be clear at the start what role is expected of the new committee as this will influence the choice of chairman and membership, and also inform such issues as likely workload. The role should be formalised into terms of reference.

Chairman

- The independence and expertise of the chairman - we believe strongly that the chairman must take responsibility for the operation and output of the committee. It is more important to appoint as chairman an independent scientist who has both committee management and presentation skills, than to have detailed knowledge in the subject in question. It is in the members of the committee that the detailed scientific knowledge should be found.

Membership

- In drawing up a balance of expertise within the membership it is important to consider whether it would be appropriate to invite scientists from abroad. Not only may the best expert in a particular area be at a foreign laboratory, a member from outside the UK may be able to offer a different perspective on the overall problem.
- If there are ranges of opinion within the scientific community, it is important to ensure that minority views are considered by the committee. Unless this is accomplished by having suitable representation on the committee, the chairman must ensure that all viewpoints are considered.
- There is also a role for "lay" members of such committees; in some cases this may be best served by having someone with scientific expertise in a completely different field who can provide a different perspective and possibly ask the difficult question.
- Securing the best experience and expertise may well require having members with potential conflicts of interest. While this is usually taken to mean personal or corporate (eg firm or university) financial or potential financial interest, potential conflicts also include membership and support of activist and/or political groups. The arrangements for handling all forms of conflicting interests must be open and transparent.
- In some circumstances, there may be merit in considering the mechanism used in the United States, whereby membership of an advisory body is published on a website allowing a certain number of days for comment on overall balance or special consideration of conflicts of interest. However, a final decision on the membership should rest with the sponsoring Department, not with public opinion.
- Time demands on members – it is essential to ensure that members have sufficient time to make a full contribution to the committee, and that employers are aware of this commitment. This includes being clear at the outset what are the likely time demands and to ensure that the committee agendas are not too heavy. Nevertheless, members must recognise that in exceptional circumstances the workload may be heavier than originally thought.
- In our earlier response to the OST code of practice for scientific advisory committees, we raised the issue of indemnities for members who had acted in good faith. We recognise that SEAC members have received a letter of indemnity, and that the current draft of the code of practice refers to the statement on indemnities in the code of practice for members of boards of Non Departmental Public Bodies. It is, however, important to clarify the situation of members of committees that are not so constituted.

Secretariat and senior officials

- The independence of the secretariat - as we stated in our response on the code of practice we consider the independence of the secretariat to be crucial. It should always report to the chairman of the committee and if possible consist of secondees from outside the policy section. At the very least the management of the secretariat should be outside the policy-line.
 - The Phillips Report commented on the role of senior officials as “ assessors” to any advisory group. Such assessors can form a valuable link to the Department or Departments concerned, but must be careful to separate science advice from policy making.
17. As indicated in the previous section, the Phillips Report identified occasions where urgent policy decisions were delayed waiting for the next meeting of an advisory committee. It is crucial for the policy maker to determine the timescales on which advice is required. In really urgent cases where delays can literally be fatal, ad hoc meetings or virtual meetings using the Internet or teleconferencing are possible. In other cases, where timing is of less concern, it is important not to establish artificially tight deadlines, as these can lead to less than optimal advice. This is particularly true where there are uncertainties, as pressure to reach a decision may lead to inadequate consideration of opposing views. This could result in delays dealing with press and public concerns over stifled debate, or at worst the implementation of wrong policies that may be difficult to reverse.
 18. A crucial issue is that of ensuring that the members have sufficient time to prepare themselves for the meeting, and that the business of the meeting is organised such that it does not impose impossible burdens on the members. The suggested use of new communications technologies mentioned in the previous paragraph may help in this respect. Consideration should be given to secondments, possibly on a part time basis for the chairman and key members of the committee when the workload demands this. In addition or alternatively the committee needs to have resources to enable the secretariat or research assistants to investigate particular issues or to commission assessments.
 19. Another issue that may warrant further consideration is how to ensure that standing advisory committees remain fully effective. There is a danger that they can become institutionalised. One way forward is to have a relatively short fixed-term, say three years, for the chairman and membership of such groups, but with some re-appointments and staggering of appointments to ensure continuity.
 20. Our response to the code of practice confirmed our support for openness and transparency in the operation of scientific advisory committees, and for the chairman to take the lead in any public or media briefing.
 21. We also believe that the committee should not merely respond to the questions raised by the Department, it should also draw attention to other related issues, and to new research findings that may shed new light on unresolved issues, or may change earlier decisions.
 22. There will be times when advisory committees will have access to unpublished results, and in such cases there may be pressure for the prior release of results before they are published. The committee themselves need to be satisfied that they have fully investigated the experimental findings and the analysis, or have obtained and are satisfied with external referees' reports.
 23. It is important for the committee to decide on how it will undertake risk assessment. The committee should also ensure that the key steps in its development of advice are recorded so that it can be more easily reconsidered in the light of new research findings.

24. As the Phillips Report stresses, it is essential for the Government to ensure that its top Civil Service professional advisers are able to retain and be seen to retain complete objectivity and independence. This is particularly true of the Chief Medical Officer and the Chief Scientific Adviser, who ideally should be eminent experts in their field, brought in for a fixed term. These senior advisers require advice on detailed aspects of science, medicine and technology, and have personal ad hoc and in some cases standing advisory groups and committees, who should follow the best practice for scientific advisory committees

4 Role of Other Bodies

25. National academies should, in principle, be independent of Government and can provide:

- independent scientific advice, either on their own initiative or at the request of Government;
- suggestions of suitable chairmen and members of scientific advisory committees;
- advice on peer review of research programmes, projects and on the outcome and analysis of scientific investigations, surveys and studies.

Although closer to Government, Research Councils and other relevant Non Departmental Public Bodies (NDPBs) can also provide a rapid objective response on questions within their areas of responsibility and expertise. National academies and Research Councils may be particularly appropriate where advice is required urgently.

5 Resolution of Conflicting Scientific Opinions

26. It is important that the scientific community takes on board the need to give adequate attention to views that conflict with the current majority or scientific establishment opinion. While such maverick views may turn out to be totally misconceived, the best way to handle the situation is to have honest and if possible open and transparent debate. If the conflict continues after such an exercise there is less scope for claims that the scientific establishment had stifled debate. If the outcome is that there remains uncertainty, then the advisory committee must be open about this and where possible provide professional risk analysis to the policy maker. The advice might also be able to identify further research that would help to resolve the issue, and its likely timescale and resource requirements. A helpful discussion on this can be found in Chapter 2 of the 21st Report of the Royal Commission on Environmental Pollution⁵.
27. The Intergovernmental Panel on Climate Change (IPCC) has a well-developed methodology for consulting a wide range of views, and an outline of this is attached at Annex A. These are comprehensive, but time consuming and expensive and probably could only be justified in full for major international concerns. Nevertheless, scientific advisory bodies may well find that some aspects of the IPCC arrangements can be adapted to their particular situation.
28. We were also impressed by the way that the Food Standards Agency has opened up its advisory mechanisms to public scrutiny. For example, in the way its review team on BSE Controls held open meetings with stakeholders to allow them to query the developing findings, and posted successive versions of the developing report on the FSA website. Again, this may not be appropriate in all circumstances, but does provide pointers to possible mechanisms for scientific committees. Another organisation that has opened up its activities is the National Radiological Protection Board.
29. Finally, one of the purposes of being open and transparent about advice and underpinning analysis is that this provides an opportunity for scrutiny by the wider scientific community and stakeholders. This aspect of informal peer review is important and the scientific community should be pro-active in ensuring that this further scrutiny takes place, and in communicating any problems to the appropriate authority.

6. Management of Research

30. The key to the management of Departmental research is for it to be open to competition, but it is also important to encourage collaboration between researchers in Government research laboratories, Research Council laboratories and institutes, UK universities and centres of excellence overseas. A key feature is peer review not only of the overall portfolio of research and individual projects, but also of detailed research protocols of large and expensive long-term experiments.
31. In the past there has been a tendency, perhaps exacerbated by budgetary cut backs, for the various players to jealously guard their patch. We acknowledge that Government Departments have over the last few years started to open up their research programmes to competition, and taken steps to publicise their future research plans, but believe that there is still some way to go to adopt and embed fully these practices.
32. We recognise the importance of maintaining core capabilities within Government and Research Council Laboratories and the wider research community largely in the universities: research capability cannot be turned on and off like a tap. Government and Research Council laboratories and institutes exist precisely because it is necessary to maintain long-term facilities and indeed studies, especially where the outcome should not depend on the continuation of a particular researcher or research team. Biomedical research requires animal housing and secure containment facilities, and trained staff. Equally, there is a need to ensure the maintenance of a pool of highly skilled researchers across the science base.
33. It is essential for Departments to have a long-term planning horizon and to develop appropriate research strategies. Departments have concordats with relevant Research Councils, which can help inform basic research planning, but more general publicising of Departmental strategies will allow wider comment, and inform the research community of likely future research contracts, and also perhaps fruitful areas for strategic underpinning research.
34. The Phillips Report criticises the lack of direction of research, especially at the early stage of the BSE epidemic, and suggests that a research supremo, bringing together research funded by MAFF, DoH, AFRC and MRC, might have improved the situation. We agree that in such a complex situation better coordination should have been put in place. However, we do not believe that an executive research supremo would necessarily have improved the outcome. We suggest that the most appropriate structure lies in the oversight inherent in the Chief Scientific Adviser's remit. In such circumstances the CSA should establish a small research committee, or seconded expert, charged with:
 - building up and maintaining an overview of the current knowledge of the areas in question;
 - liaising with all of the relevant bodies, both within the UK and overseas;
 - ascertaining current research in the area in the UK and abroad;
 - advising on what further research needs to be done. This is likely to address major practical issues, and should not be seen as exclusive, but rather setting the scene for the research programmes of the various funders; and
 - liaising with any relevant scientific advisory committee.

It is to be considered what relationship such a research committee or adviser should have with any relevant science advisory committee.

35. Such a research advisory arrangement is only required in complex situations, and should only have a limited life: handing over to a joint committee of funding bodies at an appropriate time, probably no longer than two years. The joint committee and individual funders should then be responsible for securing advice at the appropriate level from the scientific advisory committee and peer review

arrangements.

36. While funded bodies should retain executive responsibility for commissioning research, this should all be peer reviewed and as much as possible open to competition from the entire science base. Furthermore, it is essential for each funding body, and particularly Government Department, to have mechanisms in place to monitor research outcomes relevant to them.
37. There should be a presumption that there will be unhindered publication of research results in the peer-reviewed literature. This not only provides a quality control on the publication itself, it also throws the results into the public arena for further debate. However, while this is an essential first step, in some cases Departments also need to provide bona fide researchers, including those at centres of excellence overseas, with access to more detailed data and to material and reagents to allow confirmation or research findings.

7. Departmental Expertise

38. Discussion on departmental expertise has tended to concentrate on the scientific expertise within Departments to allow them to make best use of science advisory arrangements. However, first and foremost, Departmental officials must provide the expertise and experience of the area in question. In the case of BSE, MAFF was the source of expertise on, for example, veterinary practice, food safety regulation and detailed knowledge of abattoirs and the meat and bone meal industry. The officials must also provide the links to relevant officials in other Departments, in local government and in other public agencies.
39. It is also important for Departments to have sufficient expertise to put scientific advice within the context of the overall situation. Officials need to be able to formulate the right questions for the scientific advisory committee and to be able to check that the advice received is an appropriate answer to these questions. Officials also have to reconcile conflicts between the scientific advice and the other policy issues, for example Government policy on the particular question, the cost, acceptability and practicality of implementing action based on the scientific advice.

8 Risk

40. The ability to handle risk satisfactorily has always been an important issue on which a Government has been judged. However, an increasingly complex and technologically based world, coupled with the public's lower tolerance of danger imposed from outside rather than personal choice, has promoted risk in the political agenda.
41. The Phillips Report makes a clear distinction between risk assessment and risk management, and the need to ensure that the latter is clearly the responsibility of policy makers. Risk assessment is much more difficult in cases where the uncertainties include lack of knowledge of underlying processes, for example whether BSE was transmissible to humans. Committees commissioning risk assessment should make clear where they perceive there are uncertainties and how they bear on the overall assessment.
42. We are concerned that some risk analysis is insufficiently rigorous. There are well-developed risk assessment procedures developed in the engineering industry to cover uncertainties in various parameters, and the wider applicability of these should be explored. These include continuous review of the precautions as more evidence becomes available.

43. The precautionary principle is widely used without defining what is meant by the term. We believe that it needs to be considered as a two-stage process. First to ensure that when taking a decision on a response to a particular issue, the policy maker is aware of the full picture rather than arguments based merely on rhetoric. It is essential to ensure that cost and benefit considerations are drawn as widely as possible, rather than looking to the short term or, for example, only considering the effect on a particular geographic area, or component of a particular economy. Certainly, the precautionary principle should not be used as an easy way of circumventing a rigorous risk-benefit analysis of all the material costs and benefits, even where it is difficult to quantify these. Second, when the full picture, including the uncertainties, is available, the precautionary principle can be invoked in appropriate circumstances to take proportionate action in advance of scientific proof, or by leaving appropriate margins, or by proceeding in a step fashion, with appropriate monitoring arrangements.

44. Probably the most difficult problems are those requiring fast responses, and well-developed contingency arrangements should be in part of each Department's overall risk management strategy. The arrangements should include:

- anticipation of potential problems; in the case of diseases of food animals, this should include robust surveillance systems with suitable incentives for farmers and veterinary staff to report cases promptly to the appropriate authorities;
- regularly updated contingency plans, which are owned by all parts of the Department/Departments likely to be involved in any particular issue;
- training of officials to handle emerging situations – possible development of suitable “disaster games” as the civilian equivalent of the military war games.

It is important that while scientific advisory committees may be an important component of the contingency planning, they should not be seen as a substitute for it.

45. Such forward planning has a cost, but this pales into insignificant when balanced against the significant costs of the slaughter of over five million animals during the BSE crisis and over two and a half million animals during the foot and mouth epidemic.

46. It is clear that the handling and outcome of the BSE story has sensitised the general public to health, food safety and environmental issues, and it is essential to restore the public's faith in the arrangements to secure public safety and the long-term health of the environment. Arguably, the way that the BSE situation was handled contributed to the public's disquiet over genetically modified crops, MMR vaccines and mobile phone masts. It will take time and much effort to retrieve the situation. The message of the Phillips Report is that:

- trust can only be restored by a policy of openness with the public, i.e. information should be given factually in full and without spin;
- the public must be told what advice is being sought and what advice has been received; and
- most importantly, where there is uncertainty, the Government should not shrink from saying that it does not know.

We believe that the Government has had some success in recovering the public's confidence in British beef.

47. As indicated in its response to the OST consultation on a proposed code of practice for scientific advisory committees¹, the Society strongly supported the proposals made there for openness, and it endorses the strengthened statement in the current draft of this code of practice⁶. Nevertheless, it is important to explore where the scientific community should be more open when developing scientific advice, and in particular in its handling of opposing opinions on available scientific facts. Claims of unwillingness to consider outsider views and, of conflicts of interest (if only to maintain an elite club), however unjustified, have only increased public disquiet and confusion. In all cases, it is important to test established or majority opinion against claims by other parties and to give such dissenting parties the opportunity to explain their methodologies and analyses.
48. On the wider issue of consultation generally by both scientific advisory committees and the Government, there is helpful guidance in the 21st Report of the Royal Commission on Environmental Pollution⁵. While this is largely directed to communication of environmental risk, it has wider applicability.
49. There may also be some helpful lessons to be learnt in communicating facts and the process of risk assessment to the general public from the arrangements established to explore the risks and benefits of small local projects such as the siting of new incinerators.
50. A crucial point from these is that openness is more than communicating facts. There is a need to bring the general public more into the debates on the development of policy so that they feel that they own the outcomes. The Government has taken important steps in this direction, and most Departments now have a section on their web sites devoted to consultations. There is, however, a danger of consultation overload, and that relevant organisations, let alone members of the general public, are not able to keep up with the consultations in their areas of interest. It needs to be recognised that in many cases there is not time to consult on the way forward. It is therefore important to distinguish between issues or stages in the development of complex policy where consultation is essential, and those issues or stages where it is best to go forward, keeping the public and others aware of developments so that they can comment in parallel. The media has an important role to play here.

B. SPECIFIC COMMENTS ON CHAPTERS 4, 5 AND 6 OF THE GOVERNMENT'S INTERIM RESPONSE TO THE PHILLIPS REPORT

1. The Society's general views on the issues covered by Chapters 4, 5 and 6 of the Government's interim response are set out in the first chapter of this document. Here we will confine ourselves largely to responding directly to the questions raised.

CHAPTER 4: SCIENCE IN GOVERNMENT

2. At first sight, the Government's interim response to the science governance issues raised in the Phillips Report seems comprehensive, but it is by no means certain that we have in place adequate overall systems to handle similar future problems much better. It remains to be seen how well the Government's response to the Foot and Mouth outbreak stands up against the various guidance documents and relevant parts of the interim response.

Position of the Devolved Administrations

3. It is most important for the Government and the devolved administrations to work together on issues with a UK or wider impact. There is a limit to the amount of available top quality scientists' time. Where possible advisory committees should draw on scientists across the UK, and indeed elsewhere in the world, particularly elsewhere within Europe. Where devolved administrations consider that they should have their own advisory committees to consider particular local dimensions, these should keep in touch with related groups elsewhere, and where appropriate at a EU level.

A. Obtaining and Using Scientific Advice

4. The proposals set out in section A of the interim response, which are largely based on the OST guidance and draft Code of Practice documents, are comprehensive, and OST is to be congratulated on the timely issue of the original guidelines before the publication of the Phillips Report. However, it must be recognised that such guidance, while necessary, is not a sufficient response to the issue, and is actually the easy part of the exercise. It is more difficult to ensure that the entire system is in a position to respond to major problems such as BSE and the recent Foot and Mouth epidemic. Battles are not won through having excellent manuals on maintaining and using equipment, essential though such documents are.
5. It is not clear, for example, that MAFF contingency arrangements for handling a possible foot and mouth outbreak were sufficiently robust; in particular, whether the Department brought epidemiological expertise and alternative strategies to the slaughter policy to bear on the problem at the earliest possible stage, and we hope that there will be a review of procedures when the outbreak has been overcome. At a more detailed level, we have studied recent SEAC minutes and it would appear that the committee is still being over-burdened with business, and also appears to be being used in a reactive rather than a pro-active mode. Part of the latter problem may turn out to be the way that the publicly available minutes are drafted.
6. We still have concern over the arrangements for choosing members of advisory committees, especially where there is a need to move quickly. There is always the danger of only including obvious candidates known to officials, and advice should be sought outside Government to ensure as wide a field as possible. We recognise that the best people may not be available. We view with concern the difficulties that have arisen in appointing a new chairman of SEAC.

7. It is essential that Departments have sufficient in-house expertise to relate the scientific advice to the issues in question, including the practicalities of the various policy options, cost benefit analysis etc. They must be able to mobilise and use all of the components as soon as a crisis is identified. On the more limited of detailed scientific expertise, we note the interim report's comments on the outcome of the Nicholson Report⁷ and will be monitoring the situation. We believe that consideration should be given to securing more secondments into (and out of) the civil service, perhaps administered by the office of the chief scientist in each Department. This is particularly true now that there is less flow into Departments from Government laboratories.
8. However, consideration of internal scientific expertise should not detract from the recognition that Departmental officials need to have a detailed knowledge of the overall practical arrangements in the area in question, such as – in the case of BSE – an understanding of the role of the veterinary service, the regulations concerning abattoirs and the meat and bone meal industry, and an understanding of what was actually going on on the ground. It may be that in the modern civil service, officials should expect to be associated with areas of work for longer than hitherto, and again more secondments from the industries and professions concerned may be of benefit.
9. The interim response rightly draws attention to the need to ensure that the full range of scientific advice is heard, and the need to taking account of independent scientists who have opposing views based on either different experimental data or different interpretations of commonly accepted data. We believe that the science community has a joint responsibility with Government to ensure that all views are taken into account in reaching a decision, and that in cases where there is doubt that this is clearly and openly recognised. Furthermore, that the community should be alive to relevant new experimental information that has a bearing on the issue and which may require re-consideration of previously agreed decisions. As the Society stated in its response to the first OST consultation on a code of practice, this would be facilitated by having published audit trails of the steps taken by scientific advisory committees in reaching a particular system, clearly showing the key points in the decision.
10. As discussed in the first part of this document, the Society believe that much can be learnt from the IPCC procedure for reaching a consensus outlined in annex A, and from the FSA approach of open consultation on the issues and publication of successive drafts. If followed in full, both require considerable time, which may not be available, for example in some rapidly developing situations, such as the foot and mouth epidemic, where speed is of the essence. Nevertheless, we would emphasise that Departments should not to set artificial or unnecessarily tight deadlines. Not only might this lead to inadequate consideration of the options leading to mistakes, it may also be otherwise counter productive in that it could lead to delays responding to media reports that particular view points had not been properly evaluated.
11. We support fully the moves to ensure that supra-national regulatory bodies follow best practice in obtaining advice and in decision-making.

B. Managing Research Programmes

12. The Society's views on research management by Government Departments are set out earlier in this document, and the proposals in the interim response go a long way to meeting these. Particularly points we wish to stress are:
 - at the start of a new problem there may well be a case, under the direction of the Chief Scientific Adviser, for the short term appointment of a central person or body to advise the research funders on current research and areas where further work is required;

- there is an important role for Government research laboratories and Research Council institutes, especially where there is a need to maintain expensive facilities for containment, or to couple research with surveillance or testing services, or to sustain long term monitoring;
 - nevertheless, it is important to ensure that the expertise and knowledge from the whole of the science base are brought to bear on the issue and hence that as many research programmes as possible should be openly advertised, with collaboration between the various parts of the science base encouraged;
 - that future research programmes, the research projects and the detailed research protocols be open to peer review.
13. The publication of research strategies by funding bodies is an important step; it aids coordination and facilitates informed comment, and also informs the research community about fruitful areas for strategic underpinning research. Government Departments should also be proactive in explaining their research portfolios to Research Councils, building on the arrangements in their concordats with the Councils, and taking action to keep in touch with the university research programmes in their area of interest.

Public Availability of Research Results

14. The availability of research reports is an important first step, but in some cases it is access to more detailed data and also material and reagents to allow confirmation of results that are important. Departments should have arrangements for providing underlying data and materials and reagents to bona fide researchers, including those at major laboratories abroad.

Delays – funding and other resources

15. The arrangements under the new multi-year spending reviews has removed the annual bidding mentality and forced Departments to consider contingency arrangements as outlined in the interim response. This should provide for most eventualities, but in some rare cases there may well be a need to make a financial commitment beyond the scope of these contingency arrangements, and in these cases it will be important for the Treasury to look more favourably on a bid from the reserve than it did during the early phases of the BSE situation.

Horizon Scanning

16. The Research Councils, especially the BBSRC, MRC and NERC – are well placed to contribute to horizon scanning and arrangements should be put in hand to make use of this resource. The national academies, learned societies and professional bodies also have a role to play.

Co-ordination of research Programmes

17. The coordination of TSE research by the Joint Funders Group appears to be working well, but this has taken some time to evolve. It is important that there is a methodology that can be adopted to ensure that once a multi-dimensional problem has been identified, it can be handled on a pan-Whitehall and pan UK basis, including in all cases the relevant Research Councils, with a focus on the outcome and not on bidding rivalries.

Chapter 5. OPENNESS

18. The working groups general views on openness are set out in the section 9 of chapter A.
19. The Food Standards Agency (FSA) has set an excellent example of openness in its dealings, and the willingness of its Chairman to take personal responsibility for communicating with the media. We were impressed by the openness in drawing up its recent review of BSE controls, and in particular the way that it:
- enabled stakeholders, including representative of consumers, to question scientific advice at open for a, where questions were also allowed from the audience;
 - published successive drafts of its review on its web-site
20. There are limitations to the use of web sites for publishing agenda, minutes and draft documents, in that not everyone has access to the Internet, and those that do can easily miss new documents, unless there is pro-active advertising in other media. In the case of the high profile FSA issues, this might not be a problem, but knowledge by the general public of a committee's website and its current business cannot be assumed.
21. We recognise that Departments have put in place measures to implement the Government's commitment to trust in the public, and in general their websites now have much more information on consultations and draft policy documents. There is a danger, however, the very comprehensiveness of this information can be a problem in that those that can access these web sites may have difficulty in identifying items of particular interest for them. Hence, the structure of the sites needs careful consideration. It is also important for the use of these websites to be monitored to ensure that they are reaching a good cross-section of the target audience.
22. On the final question concerning the effectiveness of the steps the Government has put in place to secure public trust, these have been tested recently, for example, over MMR vaccines, mobile phone masts and the foot and mouth epidemic. On the latter, the issue has been complicated by the proximity to the General Election. However, the degree of openness and its effect will need to be examined once the epidemic has been contained. On first two, the jury is still out on whether the Government has the maintained public's confidence on these issues.

Chapter 6 RISK AND UNCERTAINTY

General Framework for Government Policies

23. As indicated above in connection with its guidance on scientific advice, the successful implementation of best practice cannot be assumed from merely the production of guidance documents and codes of practice. The same is true for implementation of best practice in risk management. A structured approach by Departments is not a substitute for training of officials, and experience of actually undertaking such an activity, but it could form the formal basis for such activities.
24. With similar caveats, it is important for the Government to develop guidance on contingency planning and for assessing policy options.
25. We believe that the Government could make better use of risk management techniques and decision-making procedures developed by the engineering industry.
26. On the use of the internet, as explained in the response to chapter 5, it is important to ensure that all interested parties are aware that information has been posed on the web-site and its address. This may require advertising in newspapers and on TV; another possibility would be a dedicated Ceefax/Teletext page.
27. The key to communicating risk is to be as open as possible. The public's perception of risk has been analysed in many different ways. There is general agreement that there is general intolerance of risk that is involuntary, especially where it does not confer any particular benefit to the individual, or to the group with which the individual identifies. On the other hand, individuals are often willing to accept significant risks as the price for getting sought after benefits. There also may be distortions created by sensational reporting in the media or by pressure group campaigns. However, a climate of openness is likely to limit the duration of such distortions.
28. We support the Government's statement on the use of the precautionary principle in the context set out in paragraph 43 of Section A, and would stress the need for a full risk-benefit analysis, even where there are difficulties in quantifying effects and uncertainties, before any policy decision is taken.

Membership of the Working Group

The Council of the Royal Society has endorsed this response to the consultation over the Government's interim response to the Phillips report. It was prepared by a working group chaired by Professor Brian Heap FRS, Vice President and Foreign Secretary of the Society and Master of St Edmund's College, Cambridge. The other members were:

Sir Geoffrey Allen FRS	Chancellor of the University of East Anglia
Sir Tom Blundell FRS	University of Cambridge
Sir Walter Bodmer FRS	Principal, Hertford College, Oxford
Sir John Houghton FRS	Co-chairman, Scientific Assessment Working Group, IPCC
Professor Peter Lachmann FRS	President of the Academy of Medical Sciences
Professor John Lawton FRS	Chief Executive, Natural Environment Research Council
Professor Denis Noble FRS	University of Oxford
Sir George Radda FRS	Chief Executive Medical Research Council
Sir David Weatherall FRS	

Supported by:

Dr Keith Root	Royal Society
Ms Sarah Dodman	Royal Society

Annex 1

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC) CONSULTATION ARRANGEMENTS

The procedure for IPCC Assessments is as follows:

- a) scoping meeting held to plan content of assessment (typically 10-15 chapters), involving about 100 scientists from wide range of relevant disciplines and wide range of countries
- b) identification of lead authors drawn from a range of relevant disciplines and as far as possible from different countries.
- c) contributions invited from as many scientists as possible (typically hundreds)
- d) meetings held involving lead authors and key scientists covering different areas of the assessment.
- e) preparation of first draft by lead authors
- f) meeting of 100-200 scientists held to finalise first draft
- g) first draft sent for review by experts worldwide –request for nomination of experts very widely circulated
- h) expert review comments taken into account in preparation by lead authors of second draft
- i) meeting held to finalise second draft and to prepare draft of Technical Summary (TS) –typically about 50 pages - and Summary for Policy Makers (SPM) –typically less than 10 pages
- j) Second draft including TS and SPM sent for review by governments – also sent to experts who reviewed first draft
- k) government review comments taken into account in preparation by lead authors of final draft of chapters, TS and SPM
- l) final draft of SPM sent to governments in preparation for Plenary Meeting of IPCC Working Group (typically attended by delegates from about 100 countries and by representatives of lead authors to defend the science) at which the SPM is agreed sentence by sentence.
- m) Lead authors revise text of TS and chapters to be consistent with agreed SPM

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References

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 - ⁵ Setting Environmental Standards, 21st Report of the Royal Commission on Environmental Pollution, TSO, Cmd, 4053 1998
 - ⁶ Code of Practice for Scientific Advisory Committees: draft for second round consultation, OST, March 2001.
 - ⁷ Review of Science and Technology Activities across Government, Council for Science and Technology, July 1999.