

CSA's Programme: Rolling Reviews of Department Science

OSI Review of Defra Science November 2006

Defra's Formal Response - General observations

We very much welcome the review and congratulate OSI on the considerable effort that the Department invested in its production. Generally we are happy with the findings and the fair and constructive recommendations.

The review is largely positive about the improvements in the use of science that we have introduced in Defra. Defra is a large department with a complex agenda and considerable depth of experience in procuring and using science and related evidence. We are pleased that the review reflects the significant progress that Defra has made in the five years since the merger of MAFF and areas of DETR, and commends the direction of travel determined through the Forward Look, Evidence and Innovation Strategy and the Horizon Scanning and Futures programmes. We see this as an important step towards continuation of the Science in Defra Reform programme introduced and implemented by Defra's first Chief Scientific Adviser, Professor Howard Dalton. There are considerable challenges still before us, many of which this Review has clearly articulated, such as the need to continue to improve our internal capability to use science and further broaden and embed the approach taken through our Evidence & Innovation Strategy.

In responding to the recommendations, we are often reporting on the actions we have undertaken in the 18 months since the review began; many of the recommendations coincide with conclusions we had reached internally and have already started implementing. As such we have responded positively to each of the 14 recommendations in the review, most of which we have been able to accept in full or at least in principle subject to resource availability and the outcome of Defra's current renewal of its organisational structures. We will be able to determine how best to deliver on some of these recommendations as the renewal process takes shape.

The review identifies areas of good practice and commends Defra in a number of areas:

- **Staff:** We are commended for having a cadre of expert and highly professional staff with a science background.
- **Chief Scientific Adviser:** The appointment of our Chief Scientific Adviser (CSA) has been key to many aspects of Defra's effective use of science. The CSA has had an important and positive role to play in developing Defra's science strategy, reviewing and harnessing existing research, improving the quality of the Department's science, accessing external sources of expertise and as head of profession. Above all, he has brought independent scientific advice and challenge to Defra's policy making
- **Dispersal of science staff into policy areas:** The benefits of the dispersal model, which was introduced so that the scientists could sit

alongside their policy colleagues, have improved the Department as an intelligent customer for science. The closer interactions between science and policy staff are improving understanding of evidence needs and consequent take-up of findings using the knowledge gained to meet policy needs. We agree that the dispersal of science staff has been positive too in terms of helping formulate research questions and monitoring the science. We are addressing the need to strengthen the sense of a Defra science community through our Head of SET Profession project.

- **E&IS:** Defra has used its 10 year Forward Look (*Evidence and innovation: Defra's needs from the sciences over the next 10 years*) and Evidence and Innovation Strategy (E&IS) to enable a strategic approach to planning and co-ordination of its investment in science. We are pleased to be commended on our use of a top-down and multidisciplinary approach to look at how to obtain the evidence and innovation required to meet the Department's needs and as a basis for resource allocation. The E&IS process has become Defra's corporate mechanism for identifying future science needs and has also served to highlight the Department's general effectiveness in reviewing natural science knowledge; identifying gaps and prioritising; and making good use of external experts for advice and for collaborative research. In the recently published '*Approach to Evidence and Innovation*', we set out a number of challenges we need to address if we are going to continue to improve.
- **Quality assurance and peer review:** Our new procedures and the Joint Code of Practice (which we initiated and which has been taken up by others) are yielding good results. We appreciate recognition by the review of our commitment to increasing the evaluation of completed work and the use of peer review at all stages of its science projects.
- **Programme management:** Both staff and processes were complimented and reflect the amount of effort that we have put into this.
- **Publishing:** We welcome the positive comments in the review about our good record of publishing the science we commission.
- **Stakeholder consultation:** We are pleased to be recognised as a market leader among government departments in stakeholder consultation. There are also many good examples of stakeholder engagement done well, the Environmental Research Funders Forum (ERFF) and the Sustainable Farming and Food Research Priorities Group were mentioned specifically but there are others cited in the case studies and main report. This is an area of continuing development and increasing activity for Defra.
- **Horizon scanning :** We have put a lot of effort into identifying our science needs and it was gratifying to see that there was common agreement on the areas identified for further development. Defra has indeed been in the vanguard of HS among government departments with some successes given the lack of established practice on which to build. We expect the systematic renewal of the HS and futures function to pay dividends if it is sustained and resourced as a long term strategic commitment.
- **Science Advisory Council:** Since being established in 2004, the Science Advisory Council (SAC) has developed its role to support the CSA, to provide a challenge function for the science and associated processes, to engage with the wider science community and to provide another means of interaction between the natural and social science communities.

- **Science, economics and statistics:** Since the merger of the two Departments, we have made a point of bringing the natural and social sciences together in developing our planning for evidence and innovation and are pleased that the report recognises the strength of this arrangement.
- **Social science:** The report encourages us to develop our social science capability, something we indeed recognise as a priority. The review points out that the present centralisation of social researchers in Defra seems appropriate given the small cadre of staff with such expertise so that best use may be made of the limited resource although more devolved arrangements may be more appropriate in the longer term.

Defra's Formal Responses to the Recommendations of the OSI Review of Defra Science

Recommendation 1

Defra should build on existing good practice (seminars, workshops, secondments, etc.) to strengthen links between scientists across the department, including with the central science team. The role of the CSA and central science team is key in facilitating and implementing this.

Defra fully accepts recommendation 1.

As pointed out in the review, the importance of science and evidence in general is appreciated in Defra. One of the aims of the CSA as the Head of Science Profession (HoSP) is that he champions the development and maintenance of a Defra science community. We recently held our second Science Forum, attended by over 220 scientists from core Defra and its agencies. Our HoSP Team is already planning to expand its activities to build on these successful forums and our lunchtime science seminars. We are working closely with our Science Communications team and initial options include organising communications training for scientists, setting up 'self-support' groups on topics such as research management and promoting the work of Defra scientists in both our 'One Planet Science' magazine and the Defra-wide 'Landscape' newsletter.

We will deliver our response to this recommendation through our Head of Science Profession Project.

Recommendation 2**Defra should:**

- a) **continue to develop its social research resource;**
- b) **further develop contact with the wider social research community; and**
- c) **provide guidance to policy and implementation teams to ensure that social science considerations are fully integrated into science projects from the beginning.**

Defra fully accepts recommendation 2.

2(a) The success of Defra's policies depends not only on evidence provided by natural science but also on understanding of the costs and behaviours involved. We agree that Defra's social research capacity must be expanded appropriately if this expertise is to be available across the policy spectrum. Defra has begun to take this capacity issue seriously and our Head of Profession for Social Research has secured agreement to appoint two new researchers to provide specialist input into the development of environmental policy. Additionally, new policy guidance currently being developed stresses the importance of social research input at all key stages.

Many social science evidence needs were defined in the Evidence & Innovation Strategy process and were documented in the consultation carried out in 2005. A recently established central social research, advice and support capability has been working with policy areas on priority themes as well as undertaking cross cutting strategic research. For example, a series of papers was commissioned to identify what was known about behaviour change. This has contributed to a "people-based focus" by focussing more attention on why people behave as they do and how we might go about encouraging different behaviours. Where special social research skills - such as stakeholder involvement approaches - have not been available internally, we have drawn on external expertise through academic placements.

2(b) We have made good progress in engaging the wider social research community, including collaborative working with social researchers in other Government Departments and exploratory discussions with ESRC about jointly commissioning a Research Centre. We are looking to further develop our social science capability. We have a concordat with the ESRC that provides a structure for co-operative working and has led to the establishment of ESRC studentships and fellowships.

2(c) Scientific research and monitoring, economic and statistical analyses, social research and the views of experts or stakeholders are some of the different sources of evidence which can be used to inform policy. The balance varies between contributions each type of evidence makes in different policy areas, and on different types of policy questions. For example, whereas statistics can provide robust data on the incidence of particular activities,

economics has a key role to play in analysing the efficiency of resource allocation and social research informs policy development and implementation by explaining how social groups and institutions respond to different forms of intervention. Different types of evidence, from different disciplines, need to be brought together so that we understand what the evidence tells us in total. Guidance will be produced to ensure that social science and other relevant evidence considerations are fully integrated into science projects from the outset.

Recommendation 3

Defra should:

- a) **more consistently play a lead role in engagement with its stakeholders;** examples of good practice to copy more widely include the Sustainable Farming and Food Research Priorities' Group and the Environment Research Funders' Forum; and
- b) **ensure that it is aware of, and draws on, the best possible sources of advice;** regardless of whether this happens to be from among its Executive Agencies, academia, or internationally.

Defra fully accepts recommendation 3

3(a) In our recent "*Approach to Evidence & Innovation*", we recognised the value that could be gained through stakeholder engagement. We acknowledge that there is still room to improve our ability to identify priority evidence or innovation needs relating to policy questions. Engaging our stakeholders will be key to this improvement. This was highlighted in the E&IS consultation responses and we can cite a number of specific examples that demonstrate how this is being done through our use of stakeholder fora, deliberative processes and *ad hoc* engagement on specific issues:-

- the SFF Research Priorities Group;
- the pilot project to construct the SCP evidence base;
- the Ashridge study on managing the SCP evidence base from a relational perspective;
- the Animal Health and Welfare DG Strategy of working in partnership sheep and goat stakeholder groups to discuss National Scrapie Plan schemes;
- the Environment Research Funders Forum;

Defra has set up a Stakeholder Engagement and Intelligence Team which, while not specifically science focussed gives an indication of the Department's commitment to stakeholder consultation etc.

<http://intranet/cd/teams/corpcomms/stakeholder/stakeholder.asp>. We are also about to initiate research specifically to explore how Defra uses stakeholder

and public engagement to build its evidence base and develop its approaches to innovation.

3(b) Given the nature of Defra's remit, we rely on the UK and international research base as a primary source of knowledge and advice. Defra's CSA, Prof. Howard Dalton, has focussed our efforts on increasing the level of strategic dialogue with our main science partners to raise levels of mutual awareness and comprehension.

Defra's own laboratory agencies are among these major science suppliers and the expert advice they provide to the department has been recognised in the recent publication "*Our Approach to Evidence & Innovation*":

"2.3.3...These agencies provide world class, strategic expertise and facilities in areas of science with direct relevance to Defra's remit. Through its Laboratory Strategy, Defra is working with these agencies to secure their long term future and to preserve Defra's access to essential scientific services."

Furthermore, we recognise that Defra could make even more use of advice from a wider range of sources such as the UK learned societies and professional institutions in addition to liaising directly with our own agencies in the Defra family or with the research councils. Indeed, we have been talking to the Royal Academy of Engineering to foster closer links and to use their expertise in areas where we need expert advice.

Defra frequently draws on external expertise to help it to consider and evaluate evidence. Much of this activity takes place at the level of individual policies; a well recognised example of good practice in our current advisory structures is the Animal Health and Welfare DG's Implementation Group the Spongiform Encephalopathy Advisory Committee (SEAC). Defra plays a leading role in inter-agency coordinating committees on science, including the Global Environment Change Committee, the Inter-Agency Committee on Marine Science and Technology (both chaired by our CSA) and others, such as the UK Biodiversity Research Advisory Committee (UKBRAG), and the BBSRC/NERC Soil Research Advisory Committee (SRAC). The review draws particular attention to the way we have developed and made use of our Scientific Advisory Council (SAC) with its wide range of academic, industrial and public sector experts, to provide advice and challenge to our science.

But there are other forms of advice on which we need to draw such as that from consultations and other public engagement mechanisms. To explore how Defra can more appropriately and transparently make use of such forms of evidence and advice, we are currently co-funding two senior Research Fellows with the ESRC who will report on how Defra can improve in this regard.

As the Department's policy and regulatory duties are heavily influenced by EU and international agenda, we have to work closely with the large number of international organisations and programmes that contribute to our understanding of areas of major policy. European Commission Scientific Committees and other advisory bodies provide evidence and advice to the

EU's policy development processes. Scientific advisory bodies provide scientific and technological advice to the parties to multilateral environmental agreements such as CITES, UNFCCC, and CBD, while others such as IPCC and IFCS provide scientific advice for intergovernmental deliberations. Organisations such as UNEP, OECD and the FAO also play important advisory roles. Collaboration and coordination of research through the European Research Area networks and other international bilateral activities also open up additional sources of evidence and advice to the Department. With this in mind, we have provided active input to the formulation of the EU's Framework programme 7 in relevant sectors, successfully ensuring that UK and Defra needs are well represented, and will remain active members of the GCSA's Global Science and Innovation Forum, supporting his role in developing a coordinated approach to international engagement on science and innovation.

Recommendation 4

To complete the successful implementation of its E&IS, Defra needs to:

- a) prioritise its science activities on the basis of risk**, e.g. to policy and other evidence needs, measured in terms of economic, human and environmental costs and benefits (see para.58)
- b) avoid gaps or overlaps between and within sectors by:**
 - **engaging across all its internal DGs and with all its key external stakeholders** (Agencies, OGDs (including devolved administrations), RCs, RCIs and industry): see Recommendation 3(a); **and**
 - **marrying higher level strategy and sector-level priorities**

Defra fully accepts recommendation 4.

Defra's Evidence & Innovation Strategy process has established a process for identifying E&I needs on the basis their relevance to delivering stated policy outcomes. Following on from this the E&IS enabled us to develop a new risk-based model for determining how R&D resources should be aligned with our priorities. Since the OSI Review was conducted we have refined this model which involves assessing the economic, human (health/safety and social/quality of life) and environmental costs and benefits that could be realised from the desired outcome and the R&D needed to achieve it. Our R&D resources have now been aligned with our priorities following the adoption of this model. We will seek to further develop and re-use this model in order to ensure our R&D activities continue to directly support our policies and operations.

Prior to the E&IS, individual Directorates in Defra had already been conducting cross-team engagement through the Programme Management Group process and holding periodic stakeholder meetings. But a major

benefit of the E&IS has been the improvement in Defra's ability to identify cross-linkages between the evidence and innovation activities across the department as a whole. This is already enabling a closer joining up of higher level strategy and sector-level priorities (for example our R&D budget spent across sectors has now been aligned with our higher level strategy). Through the consultation on the E&IS our stakeholders have also benefited from being able to identify such cross-links (as a number of responses to the consultation suggest). This process has of course also more readily enabled the identification of gaps across the research base.

As '*Our Approach to Evidence & Innovation*' suggests, as well as seeking to embed the process developed through the E&IS, we are also aware that there are benefits to be gained from being able to identify cross-linkages and gaps of this kind on a wider scale. Aim 1 of our recent publication states that we intend to widen the scope of our approach to E&I planning to include relevant bodies, and as such we are already exploring how to widen this approach to Defra's agencies and delivery bodies through considering current areas of good practice in joined-up strategic planning and delivery.

Recommendation 5

Defra should build horizon scanning (HS) into its strategic framework so that effort on HS is sustained as a primary resource commitment.

Defra fully accepts recommendation 5.

The Horizon Scanning & Futures (HSF) programme has not only been valued within Defra but has recently featured in the HM Government report "*Risk: Good Practice in Government*". Through '*Our Approach to E&I*' Defra has identified HSF as a key activity within Defra's strategic evidence & innovation process and set out specific actions to be taken in the coming year:

Aim 1 includes the commitment to publish good practice and governance guidance establishing a revised HSF programme that communicates its findings to the research base and other funders to inform their strategies.

Aim 5 states that we will continue to develop our understanding of the drivers for innovation and potential policy approaches to delivering both radical and incremental innovation. HSF research has a critical role to play because an appreciation of possible futures will provide intelligence for understanding the context for long-term innovation and the opportunities presented by emerging technologies.

Recommendation 6

Defra should:

- a) **ensure the wider adoption of good practice and consider suggested specific improvements to its commissioning processes** (identified in paras.63-65 above); **and**
- b) **aim to reduce the administrative burden of its many small science projects by:**
 - o **simplifying the commissioning and management processes for smaller science projects. This should not be at the expense of quality control.** The Home Office's QUAD approach (para.66) should be considered; and
 - o **reducing the number of small projects commissioned**, for example by increasing the number of longer-term projects and programmes or by seeking to increase the proportion of larger, collaborative projects (albeit only where this will benefit the science, for example by improving the compatibility of data sets).

Defra accepts recommendation 6 in principle.

6a) Defra has recently introduced a system through which it ensures that the science it procures is of a suitably high standard. This is particularly important if Defra is to continue to build on its reputation among scientists and the general public as a department that relies on sound evidence. Consequently there is a need to balance the simplification of the commissioning process against ensuring the quality of science and for this the calibre and experience of the scientists involved in these processes is crucial.

In recent years, Defra has put much effort into improving and rationalising its procurement processes for research. The main drivers for this activity are to ensure we purchase high quality research at the best value for money and, in doing so, also simplify and standardise practice internally and for our contractors.

In 2005, we introduced a Science Handbook for all our science teams to follow in procuring research. This has helped ensure standardised and best practice across all stages of procurement and project management. At the same time, we developed a new series of standard forms for research procurement. We have a Science Information System which holds corporate data on research projects and publishes research project information direct to our website; and for many years have operated an alerting service for contractors to notify them of Defra research competitions, which is accessible to all. From April 2006 we launched a number of Research Framework agreements with our main contractors to introduce greater efficiency to and simplification of the contracting process.

Nonetheless, we are acutely aware of the need to continue to adapt and improve all these processes. We are already on version 5 of our Science Handbook, demonstrating that our internal guidance is regularly adapted to reflect the need for science teams to demonstrate better value for money; we

are already developing new, streamlined forms and processes for letting low risk/value, short duration work and are introducing clearer guidance to help science teams decide the most appropriate procurement method for each type of project.

We will investigate the QUAD approach further, although we already operate simple processes for calling for Expressions of Interest from contractors. The detail and length of tenders for full proposals usually depends on the value and risk of the project in question and it is important to allow flexibility in the tender process to reflect this. Our aim in further developing the Science Handbook is to provide science teams with the options and advice they need to operate flexibly and ensure the best value for money for Defra and our contractors, whilst still demonstrating best and consistent procurement practice.

6b) We recognise the practical benefits of recommendation 6b and we are taking steps to embed its principles into our commissioning processes as version 5 of our Science Handbook demonstrates. We welcome the fact that the OSI review recognises that some projects let by Defra are of necessity small and urgent. We accept the desirability of moving towards longer term contracts and more joined up small projects within longer programmes especially in areas of strategic importance such as sustainability, biodiversity and veterinary science but we are also cognisant of countervailing pressures because with continuing budget changes and the requirements for evidence based policy, there is an incentive to let a larger number of smaller contracts. This is especially the case e.g. in the biodiversity area where the evidence needs are very large and the budget is very small (about £2 million p.a.).

Recommendation 7

OGDs should note and, where appropriate, adopt Defra's recent approaches to quality assurance¹ and peer review¹ of science.

Defra fully accepts recommendation 7.

Although this recommendation is for other departments to take forward we welcome it and would like to emphasise that our peer review and quality assurance processes have significantly benefited our research programmes.

Recommendation 8

Defra needs to increase its use of (post-completion) evaluation of science. Such evaluations should consider both fitness for purpose and added value. (There is expertise in OGDs such as DTI for Defra to draw on).

Defra accepts recommendation 8 in principle.

We agree with recommendation 8 and recognise that Defra science (and all evidence) needs not only to be fit for purpose, in terms of adequately addressing the research questions that are posed, but also relevant, in terms of posing appropriate policy-related questions in the first place so that the evidence can add the greatest value to the policy process. The E&IS has enabled Defra to ensure that the evidence and innovation needs we identify are directly relevant to our stated strategic objectives. But it is also important to recognise that policy evaluation is also a critical part of evidence-based policymaking and the adoption of a systematic approach to such evaluation is required. This should seek to assess the effectiveness and value of the evidence in contributing to the knowledge base supporting policy, and should complement the evaluation of policy itself within the context of an evidence-based policy making cycle.

Aim 1 of 'Our Approach to Evidence & Innovation' states our intention to embed high quality appraisal, monitoring and evaluation practice into policy-making throughout the Department. Efforts are already underway to introduce regular quality assurance 'checkpoints' at key stages of the policy-making process as part of a wider programme to transform the way that policy is designed and delivered by Defra. Progression through these checkpoints will be dependent on the ability to demonstrate that evidence from appraisal, monitoring and evaluation has been collected and utilised. Alongside this we will also need to consider how to evaluate the added value and fitness for purpose of longer term science that may not easily fit into an individual policy-making process but have an effect on a strategies, direction and policy-positions.

Recommendation 9

Defra should make its use of science more open to challenge so that both internal and external stakeholders can monitor the sensitivities of policy to changes in the underpinning science.

Defra accepts recommendation 9 in principle.

Evidence in most forms (scientific, economic, opinions etc) is open to interpretation and challenge, and this needs to be reflected in the evidence base drawn on by Government. Communicating and opening up our evidence base is therefore essential.

Our public advisory committees such as SEAC (Spongiform Encephalopathy Advisory Committee) play a valuable role in public challenge to the use of science in Defra. We also run a number of programmes of work to challenge the quality and relevance of our science (Peer Review Programme, Science

Audits, and R&D programme reviews) which, while managed internally, engage outside expertise and are published; We provide detailed information on the processes concerned and their outputs via our website.¹ In the public and media domains, we manage a science communication programme to encourage discussion and understanding of our research in wider audiences.

We acknowledge the challenge of being clear about how science is used in policy-making. Given the differences in the nature of scientific research results and policy development this is not an easy task, but it is nevertheless something we are exploring and would appreciate exchange of good practice on this issue with OSI and OGD colleagues, as well as centres of public media expertise (such as the Science Media Centre).

Recommendation 10

Defra should:

- a) **together with some of its main stakeholders, examine options for improving the awareness, integration and (especially external) availability of its data.** (The EA web-site has been suggested as an example of good practice for availability of data).
- b) **develop and maintain its science / knowledge information system(s) as a means of enabling better cross-sectoral and multi-disciplinary awareness of existing knowledge and to avoid corporate memory loss and duplication of effort.**

Defra fully accepts recommendation 10.

10 (a) As the OSI Review recognises, Defra research is routinely made publicly available and generally shared effectively. As was recognised in “Our Approach to Evidence & Innovation” we depend on a wide range of datasets including long-term environmental, social and economic data. We acknowledge there are improvements that can be made in this area, especially given the opportunities afforded by continuing developments in Information Communication Technology, and Aim 2 of “Our Approach to Evidence & Innovation” reflected this:

“Information Management. We will collect and develop data to meet current and future needs and aim to reduce costs, for example by making more use of administrative data. Where possible we will join up our data gathering and monitoring activities with other organisations by working with bodies such as the Environment

¹ <http://defraweb/science/how/agencyScienceAudits.htm> for details relating to Peer Review, Joint Code of Practice, and Science Audit process plus Science Audit Results; <http://www.defra.gov.uk/science/how/programmes.htm> for outputs from Peer Review Reports; and <http://defraweb/science/publications/default.htm> for outputs from DG R&D programme reviews).

Research Funders Forum (ERFF). Existing tools, such as RADAR (Rapid Analysis of Disease and Animal-related Risk) and the Rural Evidence Hub, have already started to bring together diverse datasets to meet specific requirements. Initiatives will build on this with new approaches mixing static and dynamic data”

Linked to this Defra is currently undertaking a re-organisation of its website to consolidate and improve the way we publish and retain information, including research information, and by doing so make it more accessible to all interested parties and the public.

We’re grateful for the example of good practice for availability of data provided by OSI which we shall follow up. But we have areas of good practice ourselves which we are already seeking to learn from more widely. The Defra air quality website, for example, contains all the raw data ever measured on air quality in the UK back to 1960 (including detailed emission inventories of greenhouse gases) and displays current data within an hour of it being measured at over 100 sites around the country. The website is very transparent and a good example of how to make data and research available.

10(b) Defra recognises that research/evidence information is a key corporate resource. We are looking at ways to further develop our Science Information System and our Library service to act as an information/knowledge hub within Defra for this. We are also looking to act upon a number of our Scientific Advisory Committee’s recommendations related to accessibility and dissemination of data².

Through our Evidence and Innovation Strategy we have identified the need for greater emphasis on multi-disciplinary secondary analysis to answer policy questions. Such secondary analysis, which can simply be the assembly of existing dispersed information, relies on in-house experts, advisory committees, evidence networks and effective knowledge management systems. Defra is increasing the amount of such work it commissions, as well as setting specific goals for the distribution of information, and this was reflected in Aims 2 and 4 of “Our Approach to Evidence & Innovation”.

“Knowledge Management. We will continue to improve our approach to knowledge management, including initiating a pilot project on knowledge communities and collaborative tools for knowledge management.”

“Interpreting existing evidence in new ways. We will improve the assembly and synthesis of existing evidence through better knowledge management which will improve our ability to interpret evidence.”

We recognise that if scientific evidence is to be successfully integrated and geared towards improving policy making, communication at all levels it needs to be facilitated and improved: whether between scientists in their various disciplines; scientists and policy makers; between advisers and decision takers (Ministers); or between Whitehall, the scientific establishment and the

² [http://www.defra.gov.uk/science/documents/papers/2006/SAC-G\(06\)14EndToEndReview.pdf](http://www.defra.gov.uk/science/documents/papers/2006/SAC-G(06)14EndToEndReview.pdf)

general public. Such communication will require scientific training for administrators and policy training for scientists (being addressed in part through the embedding of Defra scientists within policy units), media training for all and a willingness to exchange information laterally at low levels in the hierarchies (with ICT help). Understanding of the different timescales required for evidence gathering and political decisions must also be taken into account.

Recommendation 11

To ensure a coherent picture, all scientific advisory bodies set up to advise Defra Ministers should report via the CSA. This is a recommendation that OGDs should also follow.

Defra accepts recommendation 11 in principle.

While we accept the principle and intent of Recommendation 11, we cannot give an unqualified acceptance to this because there are advisory bodies that have statutory independence from the CSA, e.g. ACP (Advisory Committee on Pesticides) and VPC (Veterinary Products Committee). We can accept it for new bodies where appropriate, but without changes of legislation we cannot establish formal reporting lines for some established bodies. There is a related issue around some advisory bodies being required to report jointly to Defra ministers and ministers in the devolved administrations (and for some committees more than one Department), which makes a requirement to report through the Defra CSA unworkable.

However, the principle that our CSA should be aware of the work of all our advisory committees and content with their application of the GCSA's "*Code of Practice for Scientific Advisory Committees*" is fully accepted. The CSA's role with advisory committees in general should be to accept their outputs because she/he has:

1. made sure that the terms of reference are appropriate
2. made sure that they have the appropriate expertise to deliver their terms of reference (a role in appointments)
3. made sure that they follow appropriate procedures in delivering advice (consultation, peer review, openness, clarity about uncertainties).

Recommendation 12

OGDs which use a significant amount of science should consider adopting Defra's and MoD's approaches to having an over-all Science Advisory Council.

We welcome the fact that Recommendation 12 of the Review suggests that Defra's model for its SAC should be adopted more widely.

Recommendation 13

Defra should ensure it achieves and maintains the right balance of internal scientific expertise. This could be assisted in a variety of ways, for example by:

- a) making better provision for succession planning;**
- b) reducing the rate of staff turnover (e.g. financial incentives for key experienced staff to stay in post longer)¹;**
- c) greater use of secondments into and out of the core department** (i.e. including exchanges between Defra and the Environment Agency or Defra Laboratory Agencies);
- d) implementing a consistent approach to tracking staff deployment and expertise** (e.g. as part of the department's development of its knowledge management systems: see Recommendation 10(b)).

Defra partially accepts recommendation 13.

We intend to act on items *a*, *c* and *d* subject to certain constraints (see below). However, changing the policies and resource allocation relating to item *b* lies outside Defra.

We feel that there is scope for acting on item *b* in that it is essential that the additional expertise brought in by a scientist should be recognised in some way and this will help to reduce staff turnover. Mechanisms we suggest are “promotions in post”, the use of bonuses for significant science-based pieces of work (e.g. detailed scientific analysis of evidence, reviews) and support to ensure posts are correctly graded. We will explore the possibilities with OSI and OGD colleagues.

Our Head of Science Profession (HoSP) Team has already begun scoping ways in which we can manage scientific expertise in the Department. Over the past 3 years, the Head of Science Profession (HoSP) team has been working with Howard Dalton and Defra scientists, engineers and technical specialists to determine what the CSA's HoSP role should look like. This exercise involved very wide consultation with Defra scientists. This identified that the HoSP needed to promote and ensure a culture of excellence for science workers, promote the recognition and reward of science as a career, provide support on career progression and help provide structures for the appreciation of the specialist skills of scientists.

Following the consultation, we developed our HoSP Strategy³ and have defined an Implementation Plan⁴ which sets out what we will do to build

³[http://intranet/sid/ChangeManagement/HeadOfProfession/documents/HoSP\(05\)48.pdf](http://intranet/sid/ChangeManagement/HeadOfProfession/documents/HoSP(05)48.pdf)

⁴[http://intranet/sid/ChangeManagement/HeadOfProfession/documents/HoSP\(06\)64.pdf](http://intranet/sid/ChangeManagement/HeadOfProfession/documents/HoSP(06)64.pdf)

scientific capability in Defra. We are currently consulting on a Continuing Professional Development (CPD) framework for Defra scientists that recommends 60-100 hours per year are spent on professional development, 35-50 of which should be on science; this CPD activity would be assessed during annual appraisals. We are also working on providing information on CPD opportunities for scientists (including secondments), publishing the career histories of a range of Defra scientists on our HoSP website to provide potential direction and inspire our scientists, organising training on science communications, and reviewing guidance on recruitment. The HoSP team will be putting their recommendations to Defra's Management Board early next year.

Ideally, we would like to provide for Defra scientists a similar level of governance and support given to other Government professions but there is no "Government science service" equivalent to the GES, GSRN etc and correspondingly none of the central support that the heads of profession in those services can provide.

Defra's Human Resources Division are currently developing a new 'People Strategy', which will focus on providing better HR services and people-management processes, building leadership and capability and maximising flexibility. We have asked to be kept abreast of developments in this area and will negotiate for a central 'skills database' to support our work.

Recommendation 14

As a matter of urgency, Defra should conclude agreements with other funders and partner organisations, making the resource commitments needed to sustain the science expertise and infrastructure that will enable the department to meet its policy and delivery needs.

[Also see Recommendation 4 above]

Defra accepts recommendation 14 in principle.

Defra is a major investor in science and we therefore have a role to play in helping to maintain the sustainability of the research infrastructure in areas of relevance to our activities. Our recent "Approach to Evidence & Innovation" states that we have a responsibility:

"To ensure the maintenance of essential strategic capabilities within the UK research base on which Defra relies – including in responding to emergencies and countering major risks – via joined-up strategic planning."

Defra has gone through significant change over the last few years – and the science we need to underpin our priorities has had to change too. Our reorientation of R&D spend has been planned strategically and has been well

communicated through our Forward Look, consultation on E&IS and individual communications with the other major funders including the research councils.

We have taken a broad view of our science capability, and in some areas have increased funding, for example our spend at the Hadley Centre has increased by 40% over the past 5 years. This rise in funding in areas of increasing priority has meant we have had to reduce funding in more mature areas that are now of less relevance to our operations.

We acknowledge that we need to develop an understanding with other major funders regarding our long term needs and the capabilities of the research base, and have recently held productive discussions with a number of these organisations to explore how we can do this as we move forward. Developing this understanding is required to enable a workable agreement to be reached.