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SELECT COMMITTEE ON
SCIENCE AND TECHNOLOGY

**EFFICIENCY UNIT SCRUTINY
OF PUBLIC SECTOR
RESEARCH ESTABLISHMENTS**

REPORT

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SELECT COMMITTEE ON
SCIENCE AND TECHNOLOGY

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OF PUBLIC SECTOR
RESEARCH ESTABLISHMENTS

REPORT

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- (Q) refers to a question in oral evidence in HL Paper 5-II
 (p) refers to a page in HL Paper 5-II

ORAL AND WRITTEN EVIDENCE - SEE HL PAPER 5-II

ORAL AND WRITTEN EVIDENCE

Royal Society of Edinburgh

- Written Evidence
- Oral Evidence, 13 October 1994
- Supplementary Written Evidence

Royal Society

- Oral Evidence, 13 October 1994

Institution of Professionals, Managers and Specialists

- Written Evidence
- Oral Evidence, 13 October 1994

Natural Environment Research Council

- Written Evidence
- Oral Evidence, 19 October 1994

Ministry of Agriculture, Fisheries and Food

- Written Evidence
- Oral Evidence, 19 October 1994

Biotechnology and Biological Sciences Research Council

- Written Evidence
- Oral Evidence, 27 October 1994

Construction Industry Council

- Written Evidence
- Oral Evidence, 27 October 1994

WRITTEN EVIDENCE

- University of Bath
- Building Employers Confederation
- Chartered Institute of Building
- Chartered Institution of Building Services Engineers
- Efficiency Unit
- Forestry Industry Committee of Great Britain
- Horticulture Research International
- Institution of Civil Engineers
- Marine Biological Association of the UK
- Medical Research Council
- National Farmers Union of England and Wales
- Nottingham Trent University
- Royal Academy of Engineering
- Save British Science Society
- Scottish Office
- Department of Trade and Industry
- University of Warwick

References in the text are as follows:

- (i) refers to a question in oral evidence in HL Paper 2-II
- (ii) refers to a page in HL Paper 2-II

ORAL AND WRITTEN EVIDENCE - SEE HL PAPER 2-II

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- Royal Society of Edinburgh
Written Evidence
- Oral Evidence, 13 October 1994
- Supplementary Written Evidence
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Oral Evidence, 13 October 1994
- Institute of Professional Managers and Specialists
Written Evidence
- Oral Evidence, 13 October 1994
- Natural Environment Research Council
Written Evidence
- Oral Evidence, 19 October 1994

FIRST REPORT

29 November 1994

By the Select Committee appointed to consider Science and Technology.

ORDERED TO REPORT

EFFICIENCY UNIT SCRUTINY OF PUBLIC SECTOR RESEARCH ESTABLISHMENTS

CHAPTER 1 INTRODUCTION

1.1 In May 1993 Her Majesty's Government published their science white paper, *Realising our potential*¹, which placed emphasis on the understanding and application of science and its contribution to wealth creation and the quality of life. In this they announced their intention to "undertake a scrutiny of the public sector research establishments to review, sector by sector, the future status of establishments, looking in depth at privatisation, rationalisation and different options for ownership"².

1.2 This scrutiny was undertaken largely in the first half of 1994 by the Efficiency Unit of the Cabinet Office. The Scrutiny team consisted of five full-time members seconded to the Efficiency Unit from various Departments, and a part-time member seconded from the private sector. Its terms of reference were:

"On a sector by sector basis:

- to identify those public sector research establishments where early privatisation is feasible and desirable;
- where early privatisation is not feasible or desirable, to identify the potential for rationalisation of facilities or capabilities, and recommend means of implementing such rationalisation;
- to consider whether changes to current ownership and financing arrangements for establishments would lead to more effective operation of the open market and better value for money; if so, to recommend one or more alternative models."

The Scrutiny team reported in July 1994.

1.3 The then Chancellor of the Duchy of Lancaster, the Rt Hon William Waldegrave MP, announced shortly before the publication of the Report that a period of four months would be

¹ *Realising our potential: A Strategy for Science, Engineering and Technology* (Cm 2250). HMSO, May 1993.

² *ibid.*, p 46.

granted for public consultation on the Scrutiny team's Report, and it was with this in mind that the House of Lords Select Committee on Science and Technology conducted an enquiry¹. In response to a call for evidence (see Appendix 2), several witnesses presented written and/or oral evidence, all of which is published as Volume II of this Report². The Committee are grateful to all who contributed to the enquiry.

1.4 The Committee's enquiry did not concern itself in detail with all of the Scrutiny team's recommendations, but instead concentrated on a few of the larger issues. These are set out in the Committee's Report under the following headings:

- the conduct of the Scrutiny (Chapter 2);
- the Scrutiny team's proposals (Chapter 3).

1.5 Prior to the publication of this report, and in time to advise the Office of Science and Technology of progress before the 11 November deadline for submissions to their consultation exercise, the Chairman of the Committee wrote to the Minister for Science to outline the opinions which the Committee had reached during the course of the enquiry. This letter is printed in Appendix 4.

1.6 Throughout this Report, the following terms are used:

- "GREs" refers to Government Research Establishments, which are research establishments wholly or predominantly owned or sponsored by Government Departments;
- "RCIs" refers to Research Council Institutes, which are research establishments wholly or predominantly owned or sponsored by Research Councils;
- "PSREs" refers to Public Sector Research Establishments, the collective term for GREs and RCIs;
- "the Report" refers to the Efficiency Unit's report, *Multi-Departmental Scrutiny of Public Sector Research Establishments*³;
- "the Scrutiny" refers to the scrutiny exercise undertaken by the Efficiency Unit in preparing the Report;
- "the White Paper" refers to the Government's 1993 science white paper, *Realising our potential: A Strategy for Science, Engineering and Technology*.

All other acronyms can be found in Appendix 5.

¹ The members of the Sub-Committee which undertook the enquiry are listed in Appendix 1. The enquiry took place at the same time as (but separate to) an enquiry on the same subject by the House of Commons Select Committee on Science and Technology (HC Paper 19, session 1994-95).

² For a list of witnesses, see Appendix 3.

³ HMSO, July 1994.

CHAPTER 2 THE CONDUCT OF THE SCRUTINY

2.1 It was noticeable at a very early stage, and even before the publication of the Report, that the Scrutiny had aroused concern from many quarters. The then Chancellor of the Duchy of Lancaster, the Rt Hon William Waldegrave MP, announced in a press release on 2 February 1994 the terms of reference of the Scrutiny, and in a House of Commons written answer on 3 March 1994 listed the 53 PSREs to be covered by the Scrutiny. But as early as 16 March 1994 the Royal Society noted in a press release that it was "concerned that the way that the exercise is being undertaken does not inspire confidence that it will provide a secure basis for decision making".

2.2 At the heart of these early criticisms were complaints, later voiced to the Committee by several witnesses, that the terms of reference, the timescale allotted, and the choice of PSREs to be scrutinised were inappropriate for the complex issue of the management of such a large section of the United Kingdom's public sector science. After the publication of the Report, an additional complaint was added: that changes had been recommended without adequate calculations of the depth of the supposed problems or the cost of the mooted solutions.

Typical among these complaints were the following:

- (i) the Royal Academy of Engineering stated that:

"The Terms of Reference and the news release ... accompanying the launch of this particular review indicate a strongly doctrinaire approach on the part of the Government. The impression given is that the scrutiny team was being pointed towards privatisation as the preferred option wherever possible, with other options only being acceptable where privatisation is not feasible" (p 107);

- (ii) the Institution of Professionals, Managers and Specialists (IPMS) stated that:

"In the short timescale allotted to them the Efficiency Scrutiny team have succeeded in demonstrating that the issues are complex but have not had the time to discuss the issues in sufficient depth" (p 21);

- (iii) the Royal Society, in reply to the question whether they felt that the choice of PSREs to be scrutinised was logical, rational or wise, answered:

"we do not see the logic of the selection that was made and perhaps that is a sufficient answer" (Q 34);

- (iv) the Biotechnology and Biological Sciences Research Council (BBSRC), after analysing the extent of the reorganisations and rationalisations that had affected themselves and their predecessors over the last decade, stated that:

"The financial costs of institute restructuring are therefore high and implementation requires a considerable managerial effort. All this emphasises the need to calculate overall costs and benefits before embarking on the sort of changes implied in the report. In the time available to them the scrutineers were unable to make even preliminary calculations" (p 78).

Perhaps more worrying were the comments concerning the overall effect of the enquiry, such as stated by the Royal Society of Edinburgh:

"The review has seriously damaged the morale of scientists already hemmed in by other political and financial constraints, has jeopardised existing and prospective collaborative links with industry and could undermine existing good relations between institutes and Universities" (p 2).

2.3 Before examining in greater detail these complaints, it should be noted that witnesses were often keen to state a belief that the Scrutiny team operated in a professional manner, but were constrained by the factors mentioned above. For example, the BBSRC noted that:

“Despite the scale and speed of the review the scrutineers were able to visit BBSRC and each of [the BBSRC’s] eight institutes at least once. Based on the Council’s experience, the scrutineers went about their fact-finding field work in an open manner and as thoroughly as the timetable allowed. At all stages they were approachable and prepared to discuss issues within the Scrutiny’s terms of reference” (p 77).

In addition, the IPMS were keen to point out that:

“The team is ... to be congratulated on carrying out the Scrutiny to such a short timescale and, despite the political constraints, demonstrating the complexities and contradictions in the current system and the fact that there are no simple solutions” (p 22).

THE TERMS OF REFERENCE

2.4 It was a concern of many witnesses that the Scrutiny team was restricted by their terms of reference to a search for privatisation candidates and not asked to consider whether the present arrangements should be endorsed. For example, the Royal Society stated that “it would have been better to have begun with a deeper analysis of the current situation before assuming a solution which is privatisation” (Q 38), and that “the present arrangement ... was not allowed in the Scrutiny because the *status quo* was not acceptable” (Q 36). Similar feelings led the IPMS to state that “it has been a largely wasted exercise, but it should have been a useful one with the right terms of reference” (Q 70). In measuring efficiency, we believe that any scrutiny must consider all methods available to measure that efficiency. The Scrutiny had terms of reference which limited their report to issues of privatisation and rationalisation which are not in themselves sufficient as yardsticks of efficiency.

An additional complaint concerning the terms of reference was that they were not concerned with the effectiveness of public science and would therefore not contribute to that science’s efficiency. The Marine Biological Association of the United Kingdom stated that “No attempt was made either to understand the scientific activities within the laboratories or to set the recommendations within a scientific strategy” (p 101).

Save British Science (SBS) stated that:

“It is remarkable that this review by the Government’s Efficiency Unit gives little or no thought to the kind of management structures which can best ensure the highest quality and effectiveness in the way these functions and responsibilities are carried out” (p 111).

Professor Bruce Proudfoot, General Secretary of the Royal Society of Edinburgh, thought that “some of the real questions in terms of quality and most effective use of public funds have not been addressed in the report” (Q 11) and that the Report addressed “the narrow financial side of the Public Sector Research Establishments without asking how effectively this money was being used” (Q 12).

That the review was more interested in a narrow definition of value for money seemed apparent to other witnesses. Professor John Krebs, Chief Executive of the Natural Environment Research Council (NERC), noted that:

“the first element of any cost benefit analysis is to identify the currency: what is it? It is a maximisation or optimisation process. What is the currency you are trying to optimise, is it scientific papers per pound, is it patents per pound of investment or what? So that would be stage one, to identify the currency. Once you have got the currency you can start to stack up the costs and benefits, but you also have to recognise the constraints.

You may have an ideal solution if you were starting from a *tabula rasa*¹, but we all recognise that we have to evolve from where we are now and that may severely constrain any optimisation in an ideal world. The reason I say that the Scrutiny Report does not carry out the cost benefit analysis is they do not define currency" (Q 100).

We will return shortly to the issue of cost-benefit analyses. Instead of concentrating on cost-benefit analyses, the Scrutiny team concentrated on the identification of areas where they believed the missions of PSREs to be overlapping or duplicated. But it was argued that, in attempting to rid PSREs of areas of overlap and duplication, the Scrutiny team was ignoring essential competitive and collaborative driving forces in public sector science. The Royal Society of Edinburgh stated that:

"science depends on independent replication; therefore different bodies are going to be working in the same area and in that sense there may well be overlap but that is in fact the way in which science advances." (Q 7).

Save British Science noted that:

"In the consideration of possible mergers of PSREs with apparently overlapping missions scientific effectiveness should be dominant. The advance of knowledge often benefits from the existence of independent lines of research, approaching from different directions" (p 111).

This narrow definition of value for money and the failure to recognise the benefits of a certain level of overlap or duplication led some witnesses to conclude that the Scrutiny's aim was not to save money for United Kingdom science through more efficient management but to find ways of squeezing the science budget. While we believe that there is insufficient evidence for us to support this view, and we note with approval the statements in the Scrutiny Report that the underlying considerations concerned value for money and the effective provision of scientific expertise and advice, it is nevertheless clear that the Report has failed to reassure many that this was not simply a cost cutting exercise.

2.5 We are concerned that the Scrutiny team were from the outset restricted by their terms of reference, which placed a higher priority on privatisation than on any other model of reorganisation which could be achieved; and we believe (notwithstanding the "prior options" concept) that other appropriate options should have been given the same weight as privatisation in the terms of reference and that the Scrutiny appears to have been Treasury-led rather than science-led.

2.6 We do not believe that sufficient attention has been paid to the question of the effectiveness of public sector science in the pursuit of wealth creation and quality of life as laid down by the White Paper, without which any study of the efficiency of the management of that science has little value.

THE SCRUTINY'S TIME-SCALE

2.7 The Scrutiny team began work on 13 December 1993, produced a working document describing their findings at the end of March 1994, and published their report in July. Between the end of January and the middle of March visits were made to all the relevant PSREs. To many witnesses, it seemed that this timetable was unrealistic. The Royal Society of Edinburgh stated that:

"the belief that the review could cover such a large part of the PSRE system on the given time-scale illustrates a lack of understanding of the area ... the discussions held with the directors of the PSREs reviewed and such site visits as were undertaken were too brief to ensure that the Scrutiny was well informed" (p 2).

¹ i.e. a clean sheet.

NERC added to this, stating that:

“We would question whether it was really possible in the time allowed for the team to adhere fully to the “normal efficiency scrutiny procedures” of seeing what actually happens on the ground, and for full interaction and discussion on the work being done by the establishments. Only a few hours were spent at any one NERC laboratory” (p 59).

While it was physically possible for the team to visit all of the establishments included in the Scrutiny, we are doubtful that a full analysis of the work of all of the establishments could be undertaken in the short time available. The establishments were not easily comparable, as the Report itself acknowledges:

“Some 50 establishments were included within the ambit of the Scrutiny. They vary in size from 48 staff to 8000; in function, from basic research on molecular biology to testing of large engineering/building structures; and in form from integral parts of Government Departments to registered charities/companies limited by guarantee, and from non-departmental bodies overseen by boards with their own statutory functions to laboratories partly or fully integrated with university departments.”¹

2.8 We do not believe that sufficient time was given to the Scrutiny team to reach a proper understanding or undertake an effective review of the needs of the 53 PSREs involved in the study.

THE CHOICE OF PSRES

2.9 Criticisms by witnesses of the choice of PSREs focused on the complaint that it appeared illogical and that (perhaps consequentially) the choice appeared to be inappropriate. The Royal Society of Edinburgh stated that:

“The basis for the selection of establishments was not clear. Why, for instance, were only some of the MRC Units included? The lack of any clear rationale for the choice simply reinforces the view that the key strategic objectives for the review should have been decided in advance” (p 2).

Other witnesses mentioned specific PSREs which they regarded as suitable for inclusion in the scrutiny: for example, the Marine Biological Association of the United Kingdom and the Royal Society expressed surprise at the omission of the Institute of Oceanographic Science Deacon Laboratory, and the IPMS believed that the Defence Research Agency (DRA) should have been included (Q 75). It was also argued that the Scrutiny was an exercise more suited to GREs (which had been emphasised in the White Paper as the subject for scrutiny) than to RCIs. NERC chose to stress the:

“fundamental differences in the primary roles of GREs and RCIs. Although they carry out some R&D, the GREs are primarily concerned with the provision of scientific and technical services and advice to underpin Departmental policy. The primary role of the RCIs relates to the science base missions of the Research Councils” (p 58).

The failure to take into account this difference, according to NERC, muddled the Report:

“The emphasis on the limited area of GRE/RCI interface and on rationalisation between GREs and RCIs, with their very different missions, seems to have confused the recommendations on organisation and ownership models, particularly in the marine science area” (pp 58-59).

¹ Report, page 3.

The difficulty of comparing RCIs with GREs gives rise to the problem of comparing like with like. This is exacerbated since there is no overall transparency in the ways in which Government Departments, on the one hand, and Research Councils, on the other, determine how contracts for research are to be awarded. Asked whether the Ministry of Agriculture, Fisheries and Food had competitive tendering for research contracts which were effectively as open to RCIs as to the Department's own research establishments, the Permanent Secretary, Mr Richard Packer, conceded that while progress had been made towards reaching this goal, "It is not true that all of the research is competitively tendered at the moment" (Q 132).

However, some witnesses, for example the Chartered Institute of Building Services Engineers, expressed satisfaction with the choice of the PSREs, and NERC conceded, albeit with reservations, that "the case for extending the review to RCIs may have been justified" (p 58).

2.10 We note that the original concept of the Scrutiny as set out in the White Paper was revised with the result that the Report covered a range of PSREs which proved unduly wide.

2.11 We believe that attempts to assess the relative efficiency of comparable research establishments will only be possible if increased transparency and common procedures are adopted in the processes by which Government Departments and Research Councils fund, account for and review their respective programmes.

COST-BENEFIT ANALYSIS

2.12 Warnings were frequently made concerning the costs of the type of reorganisation which the Scrutiny team proposed. Professor Tom Blundell, Chief Executive of the BBSRC, which had undergone much reorganisation in the past decade, noted that:

"We have, for example, already spent £125 million over this period of time both in redundancies as well as in rebuilding rationalised institutes and moving people physically. It costs quite a lot for each individual, probably £30,000 to £40,000, even if you are relocating scientists to restructure an institute without redundancies. So it seems that any plans for rationalisation could incur very, very high costs. It is absolutely essential to map those requirements both of the scientific opportunity and of the customer against the costs over a period of time" (Q 159).

NERC stated that:

"The Scrutiny does not attempt any cost-benefit analysis of the proposed models of ownership or rationalisation. To propose change simply on grounds of rationalisation, customer-contractor relationships or regional interest is to consider only a small part of the cost-benefit equation. The costs of relocation and/or rationalisation are very large. The gains in terms of scientific output and value for money would have to be demonstrably substantial to compensate for such a drain on R&D budgets" (p 59).

Other items were missing from the analysis. The Report does not set out those areas where it believes overheads to be excessive, and, as is noted by NERC, "the timing of the Scrutiny has not allowed full account to be taken of the significant post-White Paper changes in the Research Council system" (p 59).

2.13 We believe that, because reorganisation of PSREs can be highly expensive, major changes should not be undertaken now, but only once there is a clear recognition of the benefits to be derived in terms both of efficiency and effectiveness.

2.14 We are not satisfied that the proposals in the Report have been made using adequate cost benefit analyses; we would also have expected the report to have identified areas in which overheads are considered to be inappropriately high.

CHAPTER 3 THE SCRUTINY TEAM'S PROPOSALS

3.1 The Committee will not comment on each of the Scrutiny team's proposals, but will instead concentrate on its recommendations concerning privatisation, Treasury rules, models for reorganisation, the linkage of PSREs with universities and the creation of Directors of Rationalisation.

PRIVATISATION

3.2 It has already been mentioned in the previous chapter that some witnesses felt that the Scrutiny team was restricted by the assumption in its terms of reference that privatisation was the best option for reorganising PSREs. However, the Scrutiny only found two candidates for privatisation: ADAS¹, currently owned by the Ministry of Agriculture, Fisheries and Food (MAFF), and the Building Research Establishment (BRE), currently owned by the Department of the Environment. The Scrutiny recommended that the latter candidate should be the subject of a review by the Department of the Environment examining the case for moving elements of it into the private sector, taking account of the planning under way for the Transport Research Laboratory and the National Engineering Laboratory.

3.3 There was little objection among witnesses (with the exception of the IPMS) to the privatisation of ADAS. While the IPMS believed that there was "little supporting evidence in the Report to support [the] recommendation [to privatise ADAS]" (p 41), the National Farmers Union regarded its privatisation as "long overdue" (p 106). MAFF felt unable to comment extensively on the issue, noting that "Ministers will want to reflect carefully on the options for [ADAS's] future while bearing in mind the recommendation" (p 70), but added that they were:

"surprised that [the Scrutiny team] felt able to come to the conclusion [that ADAS should be privatised] given that only 25 per cent of the work of ADAS is concerned with R&D and there are a number of complex technical legal issues involved in the future of ADAS which we are wrestling with at the moment and certainly one would not be able to come to a conclusion from considering the research element of it only" (Q 125).

However, MAFF have since announced their intention to privatise ADAS².

3.4 We agree that the research and development component of ADAS might be a suitable candidate for privatisation.

3.5 The plans for BRE were more controversial. The IPMS regarded them as "deeply flawed" (Q 79), and many witnesses from the construction industry expressed their dissent from the recommendation. The Construction Industry Council (CIC) stated that:

"there is a strong feeling throughout the whole of the construction industry that privatisation in relation to the Building Research Establishment either in whole or in part is not appropriate (Q 177).

They noted that:

"the idea that it would belong to a company or a group of companies out in the industry and be run on commercial lines really we feel would be disastrous for the country. The Building Research Establishment has an immense asset to this country in the knowledge base that it has built up over the years since it started. If that knowledge base were transferred into a commercial environment, the people who have to tap into it it would find it more difficult and there would be a different set of guidelines under which it would operate" (Q 183).

¹ Formerly the Agricultural Development and Advisory Service.

² MAFF press release, 24 October 1994.

The Building Employer's Confederation believed that:

"the transfer of any or all of the BRE to the private sector would result in a reduced service to the industry and could also result in the disappearance of some of the current services from the industry" (p 94).

Specific attention was paid to the idea that, to aid the privatisation process, the BRE might be subdivided. This, the Building Employer's Confederation felt, "would produce a much weaker and less sound structure" (p 93), and the Chartered Institute of Building Services Engineers felt that:

"simply removing the less profitable activities in order to create a more privatisable entity will not contribute one iota to the efficiency or the effectiveness of the way in which BRE conducts its business" (p 94).

This determination to maintain the integrity of the BRE led the CIC, supported by the Chartered Institute of Building, to propose that the BRE could form the basis for a national centre for building research. This, they felt, would be "run by industry, supported largely by industry funds, but also providing the level of authoritative support that Government needs" (p 87). The CIC noted that they had been undertaking negotiations with the Department of the Environment on this proposal (Q 187).

Opposition to the Report's proposal that the BRE be privatised was received primarily from witnesses fearful that the construction industry would have to pay additional costs to a private sector successor. But the BRE's excellence has been achieved by its integration of all matters of building research, and privatisation may affect not just the costs of its services, but also its effectiveness.

3.6 While accepting that ownership of the BRE does not need to be maintained by government, we are concerned that plans to privatise the BRE might result in its break-up. We recommend that the BRE is kept as an integral establishment selling its expertise both to government and industry.

3.7 We agree with the Report's conclusion that the privatisation prospects of those PSREs in the Scrutiny whose parent Departments have not proposed privatisation are limited.

TREASURY RULES

3.8 Witnesses responded positively to the Scrutiny team's proposal in recommendation 35 that "all PSREs should at a minimum have the flexibilities inherent in net running cost operation". Treasury rules often restricted PSREs from making longer-term strategic borrowing decisions. The Royal Society of Edinburgh noted that these rules made it impossible for the Royal Botanical Garden Edinburgh to borrow in the open market (Q 23). The Royal Society believed "Treasury guidelines should be revisited to gain greater efficiency" (Q 60); and the IPMS thought that "the ability of PSREs to maximise their opportunities is heavily constrained by Treasury accounting rules" (p 47) and that it was necessary to:

"look at Treasury rules and the whole basis of financing to enable research establishments to develop in the way the Government is asking them to, to be outward looking and innovative, and not to be so dependent on government funding" (Q 85).

3.9 We agree with the Scrutiny team's belief that Treasury rules place too heavy a burden on commercial activity by PSREs, and should therefore be made more flexible.

THE TWO MODELS FOR RATIONALISATION

3.10 The Scrutiny team recommended:

Model 1: the creation of four new "market sector" oriented organisational groupings dealing with marine resources and environment; environment (non-marine); biotechnology and biological science; and food and agriculture. These would be parented, respectively, by Scottish Office, NERC, BBSRC, and MAFF;

Model 2: the creation of geographically-based groupings in Scotland and in England and Wales. This would bring more establishments in Scotland into Scottish Office ownership, create a new MAFF agency comprising most existing MAFF PSREs in England and Wales, and transfer a small number of establishments to BBSRC and NERC."¹

These recommendations both proved highly controversial. Witnesses felt that either model would create artificial barriers between institutes and would damage the effectiveness of science in PSREs. The Royal Society likened the choice to punishment by flogging or hanging (Q 36), and while witnesses tended to find one model more distasteful than the other, they almost always saw their preference between the two as the lesser of two great evils rather than accepting one model as a positive good.

3.11 Model 1, which proposed to divide PSREs along disciplinary boundaries, was principally attacked for its failure to recognise the inter-play between the four "market sectors" that it identified. NERC felt that:

"It generates an organisational barrier between research establishments involved in onshore and marine environmental work just at a time of increasing concern over the processes operating across this important environmental interface and when the need for an integrated approach is perceived as essential" (p 61).

The Royal Society of Edinburgh felt that:

"it would detract from the horizontal integration currently taking place between the Scottish PSREs. The model would cut across functional areas of science and would create large unwieldy organisations which could well have an inhibiting effect on collaborative relationships" (p 3).

Specific complaints were made concerning the boundaries of the four groupings. The Forestry Industry Committee of Great Britain stated with regard to the proposal that forestry research stations should be transferred to NERC within an environment (non-marine) grouping that:

"Forestry does not "belong" in this grouping and has little common interest with its other members. This will operate to its disadvantage and to the detriment of forestry research." (p 96).

3.12 The second model proposed to divide PSREs along regional boundaries, creating one organisation for Scotland and one for England and Wales. Witnesses were in general wary of this proposal because it too threatened to create artificial barriers between institutes. The Royal Society of Edinburgh stated that there were attractive elements to this plan, which recognised the benefit of horizontal integration of widely differing institutes with geographic proximity, noting that with the creation of the Committee of Heads of Agricultural and Biological Organisations in Scotland (CHABOS), such an evolution was already taking place. Indeed, there was already a distinctive "Scottish system" of research largely funded by the Scottish Office Agriculture and Fisheries Department, which worked because of the high concentration of Scotland's population within a

¹ Report, p 8.

small area of the country and, according to the Scottish Office, "is seen internationally to be a particularly effective means of technology transfer" (p 118). However, the advantage of this system was that it is still an integral part of the United Kingdom's science base, and not cut off from it. The Royal Society of Edinburgh noted that:

"The disadvantage of Model 2 is that the geographical grouping of institutes weakens the contributions from the Scottish PSREs at United Kingdom and international levels. Equally, such a grouping could weaken the inflow into Scotland" (p 4).

They also stated that:

"Some establishments, especially in the medical area, would oppose such a transfer on the grounds that they are part of a national network and any separation might damage their prestige and international recognition" (p 4).

3.13 We have already mentioned the BBSRC's warnings against the cost of large-scale reorganisations. The BBSRC pointed instead to a recent example of what they considered to be a successful reorganisation. Horticulture Research International (HRI)¹ was "the best example of bringing together institutes or research establishments that were under two different structures" (Q 157). HRI was praised by others, for example, the National Farmers Union, who stated that:

"HRI has established itself as a centre of excellence for research in its field, has already undergone much restructuring and has formed good relations with growers" (p 105).

and by MAFF, who regarded it as a "useful model" (Q 122) which had succeeded in achieving a higher amount of work from commissions from the horticultural industry. HRI themselves had no intention of hiding their light under a bushel:

"In the four years since its establishment we believe that HRI as an entity has developed as an outstanding role model for the way in which science can be effectively managed across a wide range of research establishments and over a wide range of industries" (p 99).

3.14 **We reject the idea of reorganising PSREs on either disciplinary or regional lines. We believe that large-scale reorganisation is very costly, involving very high risks, and we would prefer the type of rationalisation of institutes undertaken with Horticulture Research International, which occurred as a result of identifying the needs of the relevant industry and then adapting the organisation of the research within both the Research Council and the Department. We believe that individual cases must be judged on their own merits rather than on whether they fit into a certain discipline or geographical location.**

3.15 **We believe that the "Scottish system" should be maintained, because it evidently meets the needs of its customers despite not being replicable south of the border or conforming to the pattern of science in the rest of the United Kingdom. But research in Scotland must not be allowed to be so cut off from the rest of the British science that it becomes a separate entity, as the "Scottish system" relies on its being part of the United Kingdom science system, and we would not wish to encourage any system which hindered linkages between Scottish institutes and the rest of the United Kingdom science base.**

¹ HRI was established in 1990 by integrating the horticulture research institutes of the Agriculture and Food Research Council and the ADAS experimental horticulture research stations under single management.

LINKS WITH UNIVERSITIES

3.16 Recommendations 3 and 4 of the Report proposed that :

"Departments and Research Councils should routinely examine the potential for transferring PSREs to universities.

PSREs should, within two years, develop effective formal links with universities where these do not exist at present."

These recommendations found strong support from the University of Warwick, which noted that:

"The attractive feature of these recommendations is that there are genuine benefits to be secured on both sides, but to be fully realised they need a more formal structure than is provided by the many loose associations currently operating" (p 120).

In addition, the University of Bath went further, stating that "there is no fundamental reason why all PSREs should not be disbanded and their work contracted out" (p 92). However, there was a note of scepticism from others, who while being keen to emphasise what links there were between PSREs and universities, stressed the problems of zealously transferring such establishments to universities. HRI noted their approval of formal links, but objected to wholesale transfer:

"University ownership is not favoured by HRI's board, not least because the criteria by which university productivity and excellence are judged are quite different to the criteria by which HRI's performance is assessed. We would expect an alienation from industry in any shift within HRI towards basic science and teaching and believe that the considerable advantages to be gained from close contact with universities can equally well be achieved by formal links that fall well short of ownership *per se*. Furthermore, the sheer size of HRI, coupled with the complexity and magnitude of the necessary financial arrangements, would preclude takeover by a single university. The supportive grower community that HRI services would be deeply hostile to fragmentation of HRI's operations" (p 98).

The Marine Biological Association of the United Kingdom reiterated this caution by stating that:

"Transfer of each PSRE to a single University could restrict the contributions that these Laboratories could make to the overall research capability of the United Kingdom" (p 103).

The Royal Academy of Engineering noted that:

"Transfer should be welcomed where universities have a proven track record in sustained and successful activity relevant to the future development needs of PSREs, ie these linkages should be encouraged to grow naturally rather than being imposed" (p 109).

Similarly, the Royal Society of Edinburgh warned that "transfer or incorporation should be considered with care" (p 3), and the Royal Society stated that "to suggest that PSREs should be constantly reviewed so that they can be attached to universities raises all sorts of organisational and financial difficulties" (Q 42).

3.17 We do not accept that PSREs are by nature always appropriate for takeover by or formal linkage to universities. However, we accept that Research Councils and Departments should be encouraged to identify and implement mutually advantageous linkages as appropriate.

DIRECTORS OF RATIONALISATION

3.18 Support among our witnesses for the Report's proposal to create Directors of Rationalisation¹ was non-existent. The University of Bath were "amazed that this should be a serious proposal. In our view that would be a recipe for confusion over who is responsible for managing what" (p 92). The Institute of Civil Engineers noted that this proposal and the proposal to reorganise PSREs along disciplinary or regional lines would "succeed only in introducing yet another layer of management, at a time when industry is shedding management vigorously" (p 100). The Royal Society of Edinburgh summed up their opinion briefly by stating that "we do not in fact want any further layers of administration; we want the money to be devoted to science" (Q 10).

3.19 We strongly oppose the establishment of Directors of Rationalisation on the grounds that this would lead to an extra tier of bureaucracy. We recommend instead that Research Councils continue to allocate the responsibility for rationalisation to their chief executive, and that Government Departments place such a responsibility with a scientifically qualified person separate from the procuring section.

¹ Recommendation 38.

CHAPTER 4 SUMMARY OF CONCLUSIONS

4.1 We are concerned that the Scrutiny team were from the outset restricted by their terms of reference, which placed a higher priority on privatisation than on any other model of reorganisation which could be achieved; and we believe (notwithstanding the "prior options" concept) that other appropriate options should have been given the same weight as privatisation in the terms of reference and that the Scrutiny appears to have been Treasury-led rather than science-led. (2.5)

4.2 We do not believe that sufficient attention has been paid to the question of the effectiveness of public sector science in the pursuit of wealth creation and quality of life as laid down by the White Paper, without which any study of the efficiency of the management of that science has little value. (2.6)

4.3 We do not believe that sufficient time was given to the Scrutiny team to reach a proper understanding or undertake an effective review of the needs of the 53 PSREs involved in the study. (2.8)

4.4 We note that the original concept of the Scrutiny as set out in the White Paper was revised with the result that the Report covered a range of PSREs which proved unduly wide. (2.10)

4.5 We believe that attempts to assess the relative efficiency of comparable research establishments will only be possible if increased transparency and common procedures are adopted in the processes by which government departments and Research Councils fund, account for and review their respective programmes. (2.11)

4.6 We believe that, because reorganisation of PSREs can be highly expensive, major changes should not be undertaken now, but only once there is a clear recognition of the benefits to be derived in terms both of efficiency and effectiveness. (2.13)

4.7 We are not satisfied that the proposals in the Report have been made using adequate cost benefit analyses; we would also have expected the report to have identified areas in which overheads are considered to be inappropriately high. (2.14)

4.8 We agree that the research and development component of ADAS might be a suitable candidate for privatisation. (3.4)

4.9 While accepting that ownership of the BRE does not need to be maintained by government, we are concerned that plans to privatise the BRE might result in its break-up. We recommend that the BRE is kept as an integral establishment selling its expertise both to government and industry. (3.6)

4.10 We agree with the Report's conclusion that the privatisation prospects of those PSREs in the Scrutiny whose parent Departments have not proposed privatisation are limited. (3.7)

4.11 We agree with the Scrutiny team's belief that Treasury rules place too heavy a burden on commercial activity by PSREs, and should therefore be made more flexible. (3.9)

4.12 We reject the idea of reorganising PSREs on either disciplinary or regional lines. We believe that large-scale reorganisation is very costly, involving very high risks, and we would prefer the type of rationalisation of institutes undertaken with Horticulture Research International, which occurred as a result of identifying the needs of the relevant industry and then adapting the organisation of the research within both the Research Council and the Department. We believe that individual cases must be judged on their own merits rather than on whether they fit into a certain discipline or geographical location. (3.14)

4.13 We believe that the "Scottish system" should be maintained, because it evidently meets the needs of its customers despite not being replicable south of the border or conforming to the pattern of science in the rest of the United Kingdom. But research in Scotland must not be allowed

to be so cut off from the rest of the British science that it becomes a separate entity, as the "Scottish system" relies on its being part of the United Kingdom science system, and we would not wish to encourage any system which hindered linkages between Scottish institutes and the rest of the United Kingdom science base. (3.15)

4.14 We do not accept that PSREs are by nature always appropriate for takeover by or formal linkage to universities. However, we accept that Research Councils and Departments should be encouraged to identify and implement mutually advantageous linkages as appropriate. (3.17)

4.15 We strongly oppose the establishment of Directors of Rationalisation on the grounds that this would lead to an extra tier of bureaucracy. We recommend instead that Research Councils continue to allocate the responsibility for rationalisation to their chief executive, and that Government Departments place such a responsibility with a scientifically qualified person separate from the procuring section. (3.19)

1. Has the case for continuing the Bill's early Unit's model been justified?
2. Are you satisfied with the form of the chart of the 12 establishments submitted by the Secretary? Should any of the 12 have been excluded, and if not, why not? How have they fared?
3. Are you satisfied with the format of the report and its conclusions?
4. Will the proposals in the report:
 - aid efficiency?
 - strengthen the effective provision of scientific expertise and advice?
 - contribute to the health of science and to the quality of life?
 Explain your answers and, if necessary, state how the above aims could be furthered.
5. How will the proposals in the report affect the statutory duties of the research establishments?
6. How suitable are the report's proposals for implementation?
7. What are the advantages and disadvantages of the following proposals in the report?
 - (Nos. 3 and 4) transfer of PSREs to universities or closer formal links between PSREs and universities;
 - (No. 10) a new model for organisational structure;
 - (No. 11) the Director of Rationalisation.
8. The report notes (paragraph 4.10.4) that "university laboratories have tended to take place in a departmental or individual Research Council 'silo'" and suggests that this tendency be discontinued. How do you see the cross-departmental and the Department/Research Council arrangements?
9. The report notes (paragraph 3.14) that Treasury guidelines place obstacles in the way of privatisation and that the scope for selling services outside Government. In what extent is this the case? Will the situation alter if PSREs are transferred to or linked with universities? Should the guidelines be altered, and, if so, how?
10. What should be the remit of the Office of Science and Technology in the light of the report?
11. Are there any other proposals which you feel the report should have made?

APPENDIX I

The members of the Sub-Committee who conducted the enquiry were:

- L. Chorley
- L. Craig of Radley
- B. Hilton of Eggardon
- L. Howie of Troon
- B. Platt of Writtle
- L. Redesdale
- L. Renwick
- E. Selborne (Chairman)

APPENDIX 2

Invitation to submit written evidence

The House of Lords Select Committee on Science and Technology have appointed a Sub-Committee, under the chairmanship of the Earl of Selborne, to enquire into the Efficiency Unit Scrutiny of Public Sector Research Establishments. It is intended that the enquiry will result in a report on behalf of the House of Lords Select Committee on Science and Technology to be submitted to the Office of Public Service and Science consultation exercise.

The Sub-Committee invite written submissions on any matters relevant to the Efficiency Unit's report for the Cabinet Office¹ and in particular on the following questions. It may be that not all the questions will be relevant to your concerns, in which case you should be selective.

1. Has the case for conducting the Efficiency Unit's review been justified?
2. Are you satisfied with the basis of the choice of the 53 establishments examined by the Scrutiny team? Should any of the 53 have been excluded, and should any others have been included?
3. Are you satisfied with the way that the review was conducted?
4. Will the proposals in the report:
 - aid efficiency?
 - strengthen the effective provision of scientific expertise and advice?
 - contribute to wealth creation and to the quality of life?

Explain your answers, and, if necessary, note how the above aims could be furthered.

5. How will the proposals in the report affect the statutory duties of the research establishments?
6. How suitable are the report's proposals for privatisation?
7. What are the advantages and disadvantages of the following proposals in the report?
 - (Nos. 3 and 4) transfer of PSREs to universities or closer formal links between PSREs and universities;
 - (No. 10) the two models for organisational structures;
 - (No. 38) the Directors of Rationalisation.
8. The report notes (paragraph 4.6) that rationalisation hitherto "has tended to take place on a departmental or individual Research Council basis" and suggests that this tendency be discontinued. How appropriate are cross-departmental and/or Department/Research Council rationalisations?
9. The report notes (paragraph 3.16) that Treasury guidelines place obstacles in the way of privatisation and limit the scope for selling services outside Government. To what extent is this the case? Will the situation alter if PSREs are transferred to or linked with universities? Should the guidelines be altered, and, if so, how?
10. What should be the role of the Office of Science and Technology in the light of the review?
11. Are there any other proposals which you feel the review should have made?

¹ *Multi-Departmental Scrutiny of Public Sector Research Establishments*, HMSO, 1994, £15.95.

INSTRUCTIONS TO WITNESSES

Evidence should be submitted to me, the Clerk of Sub-Committee II (Efficiency Unit Scrutiny of Public Sector Research Establishments), Select Committee on Science and Technology, House of Lords, London, SW1A OPW by Monday 26 September. No evidence received after that date will be accepted for consideration by the Committee. Evidence must be clearly typed or printed on one side of A4 paper and take the form of an original copy. It would assist the Sub-Committee if evidence were prefaced with an executive summary or precis which also indicated your interest in the Efficiency Unit's review. It would be extremely helpful if evidence could also be submitted on a disk, preferably as Word Perfect 5.1 or 5.0, or if this is not possible, as a DOS text file or ASCII. (Disks will be returned to sender.) Evidence becomes the property of the Committee, and may be printed. You may publicise your evidence between submission and publication, but in doing so you must indicate that it was prepared for the Committee.

On the basis of written evidence received the Committee will invite some witnesses to give oral evidence.

The Committee would be grateful to receive copies of witnesses' submissions to the Office of Science and Technology's consultation exercise on the Efficiency Unit report. This will not be treated as evidence to the Committee.

You may follow the progress of the enquiry from the Weekly Agenda of House of Lords Select Committees. This is free, and may be ordered from Miss Sue Hunt, Committee Office, House of Lords, London SW1A OPW, telephone 071 219 5791.

Further information from the Clerk, David Batt, House of Lords, London SW1A OPW, telephone 071 219 6075; direct line 071 219 3055; fax 071 219 6715.

1st August 1994

APPENDIX 3

List of witnesses

The following witnesses gave evidence. Those marked * gave oral evidence.

University of Bath

- * Biotechnology and Biological Sciences Research Council
- Building Employers Confederation
- Chartered Institute of Building
- Chartered Institution of Building Services Engineers
- * Construction Industry Council
- Department of Trade and Industry
- Forestry Industry Committee of Great Britain
- Horticulture Research International
- Institution of Civil Engineers
- * Institution of Professionals, Managers and Specialists
- Marine Biological Association of the UK
- Medical Research Council
- * Ministry of Agriculture, Fisheries and Food
- National Farmers Union of England and Wales
- * Natural Environment Research Council
- Nottingham Trent University
- Office of Public Service and Science, Efficiency Unit
- Royal Academy of Engineering
- * Royal Society
- * Royal Society of Edinburgh
- Save British Science Society
- Scottish Office
- University of Warwick

APPENDIX 4

*Letter from the Chairman of the Select Committee on Science and Technology
to The Rt Hon David Hunt MP, Chancellor of the Duchy of Lancaster*

Select Committee on Science and Technology

I am writing to you as Chairman of the House of Lords Select Committee on Science and Technology to inform you of progress in our enquiry into the Efficiency Unit's Multi-Departmental Scrutiny of Public Sector Research Establishments (PSREs). The early date of Prorogation has, unfortunately, prevented us from being able to present our report in time for the 11 November deadline for submissions to the Office of Science and Technology. Your office has kindly understood these difficulties, and is willing to accept our report at a later date; but we hope that it is helpful in the meantime to set out in general terms the conclusions which we have reached from the evidence presented to us and which we will be disclosing in greater detail in our report. It is to these conclusions that I now turn.

The Scrutiny was an exercise which the Government trailed in both the Science White Paper, *Realising our potential*, and the Levene-Stewart *Review of Allocation, Management and Use of Government Expenditure on Science and Technology*, and since we recognise that, especially in a fast-changing world, defence of the status quo is not always justified, it would be wrong to oppose on principle reviews of how public sector science is organised and managed.

We are however concerned that the Scrutiny team were from the outset restricted by their terms of reference, which placed a higher priority on privatisation than on any other model of reorganisation which could be achieved; we believe (notwithstanding the "prior options" concept) that other appropriate options should have been given the same weight as privatisation in the terms of reference. However, we agree that the research and development component of ADAS might be a suitable candidate for privatisation. In respect of the Building Research Establishment, we accept that this does not necessarily need to be owned by government, though in view of the requirements for a strong research and development capacity to support the building and construction sector it will be important for the Government to continue to fund research there and it will be essential to maintain the BRE's status as a centre for impartial advice to both government and industry, and to maintain that centre as a single entity. We agree that the prospects for privatisation in the other PSREs whose parent Departments and Research Councils have not proposed privatisation are very limited. In addition, we agree with the team's belief that Treasury rules place too heavy a burden on commercial activity by PSREs, and should therefore be made more flexible.

We have a number of concerns about the nature of the review, which took on a different guise to that which we believe was trailed in the White Paper. While the White Paper referred to a review mainly of Government Research Establishments, the Scrutiny review was concerned with Research Council institutes to a much higher degree than was anticipated. Many of our witnesses expressed a belief, with which we agree, that this larger exercise was then undertaken with totally insufficient time to reach a proper understanding of the needs of public sector science. Recommendations were made without adequate cost-benefit analyses, and without identifying those areas where the team believed overhead costs to be too high. In addition, while the emphasis of the science White Paper "Realising our potential" was upon wealth creation and quality of life, the emphasis of the review appears to have been Treasury-led rather than science-led. On these bases, the team suggested options which imply sweeping changes to the organisation of public sector science. These included two models of reorganisation; the linking of Public Sector Research Establishments to universities; and Directors of Rationalisation. I shall deal with each of these recommendations in turn.

Support among our witnesses for either of the two models for reorganisation was low, and the Committee reject the idea of reorganising Public Sector Research Establishments uniformly on either disciplinary or regional lines. We believe that large-scale reorganisation is very costly, involving very high risks, and we would prefer the type of rationalisation of institutes which

occurred with Horticulture Research International. This appears to have occurred as a result of identifying the needs of the relevant industry and then adapting the organisation of the research within both the Research Council and the Department. We believe that individual cases must be judged on their own merits rather than on whether they fit into a certain discipline or geographical location. In regard to the specifically geographical model, we would like to stress that the "Scottish system" should be maintained, because it evidently meets the needs of its customers despite not being replicable south of the border or conforming to the pattern of science in the rest of the UK. But we must not allow research in Scotland to be so cut off from the rest of the British science that it becomes a watertight entity, as the "Scottish system" relies on its being part of the United Kingdom science system, and we would not wish to encourage any system which hindered linkages between Scottish institutes and the rest of the UK science base.

The Scrutiny Team's recommendations concerning the linkage of PSREs with universities assumes that PSREs are by nature appropriate for takeover by or linkage to universities, whereas in reality this is not always the case. Many witnesses noted their aversion to these recommendations, and we would discourage forced linkages. We are content that Research Councils and Departments should be encouraged to identify and implement linkages as appropriate.

The idea of "Directors of Rationalisation" was strongly opposed by all of our witnesses, and we believe that appointing these directors would lend to unnecessary bureaucracy. We recognise that the previous scale of reorganisation within the Research Councils' institute structure and also within departments suggests that the requirements both of science and of customers could continue to give rise to specific instances where reorganisation either between departments or within departments will become appropriate. But rather than have two Directors of Rationalisation, we would recommend that within each Government Department with responsibility for GREs there should be a scientifically-qualified person separate from the procuring section specifically required (among other responsibilities concerned with the oversight of Research and Development) to bring forward proposals for departmental or interdepartmental restructuring of research establishments when appropriate. Within the Research Councils this responsibility is already held by the chief executive of each Council.

Finally, we understand from Sir Peter Levene's remarks to the Parliamentary and Scientific Committee on 18 October that the Efficiency Unit's exercise is considered to be the first stage of a review process. Therefore, the Committee would wish to stress the following three points.

First, the consideration of the future organisation of Public Sector Research Establishments should now be widened to take into account the effectiveness of public sector science, without which any debate on the efficiency of the management of that science has little meaning.

Secondly, as previous experience has shown that reorganisation of Public Sector Research Establishments can be highly expensive, major changes should only be undertaken once there is a clear recognition of the benefits to be derived in terms both of efficiency and of effectiveness.

Thirdly, attempts to assess the relative efficiency of comparable research establishments will only be possible if increased transparency and common procedures are adopted in the processes by which Government Departments and Research Councils fund, account for and review their respective programmes.

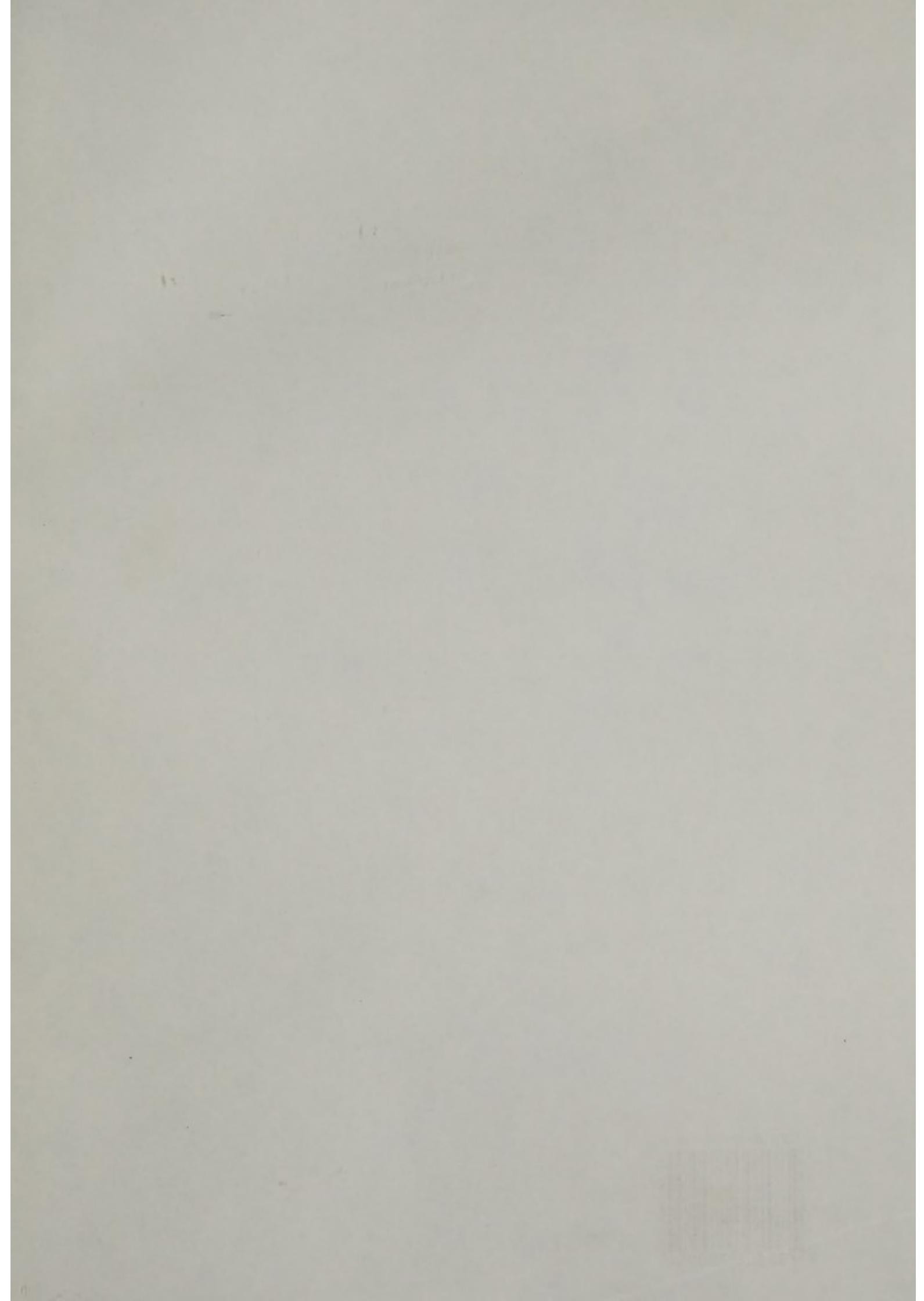
These points will be expanded in our report, which I hope to send you by the end of November.

2 November 1994

APPENDIX 5

Acronyms

BBSRC	Biotechnology and Biological Sciences Research Council
BRE	Building Research Establishment
CHABOS	Committee of Heads of Agricultural and Biological Organisations in Scotland
CIC	Construction Industry Council
DRA	Defence Research Agency
GREs	Government Research Establishments
HRI	Horticulture Research International
IPMS	Institution of Professionals, Managers and Specialists
MAFF	Ministry of Agriculture, Fisheries and Food
MRC	Medical Research Council
NERC	Natural Environment Research Council
PSREs	Public Sector Research Establishments
R&D	Research and Development
RCIs	Research Council Institutes
SBS	Save British Science



APPENDIX 1

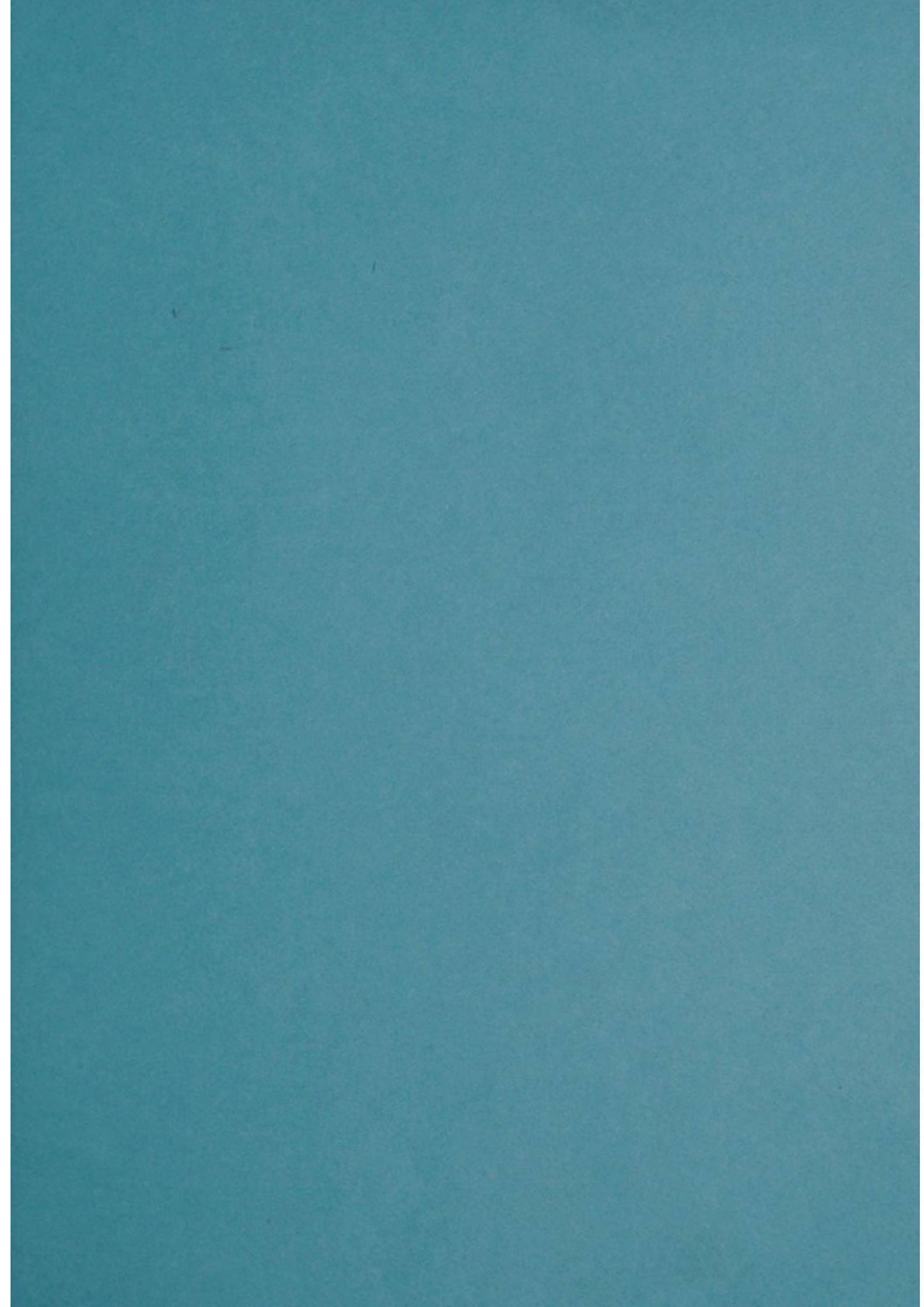
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