



PROSPECT SCIENCE BRIEFING: IMPACT OF FUNDING CUTS

British science has taken three sucker punches since July 2006. In February 2007, the Department of Trade and Industry took back £68m from the research councils – money that had been ring-fenced for science.

In October 2006, the Office of Science and Innovation announced far-reaching changes to the criteria for eligibility for research council funding.

And in July 2006, the Department of the Environment, Food and Rural Affairs instructed all of its agencies and public bodies to make in-year cuts to their budgets.

Department of Trade and Industry

DTI said it had to reduce science spending for one year to pay for “exceptional” and ongoing costs resulting from the collapse of the Rover car company and the unexpected increase in support needed to cover British Energy's nuclear liabilities.

Prospect accused the government of breaking the ‘golden rule’ of UK science funding by making sharp cuts to public funds allocated to science in order to finance the cost of the Rover car company rescue. The research councils’ budget of £2.8 billion for the coming year is supposed to be ring-fenced, meaning that it can only be spent by the Office of Science and Innovation and funds cannot be used by other parts of DTI.

Sue Ferns, head of research at Prospect said: “This demonstrates that when it comes to science there is a lack of strategic vision at the heart of government. One arm of government is doing one thing while another is doing something completely different and no one is taking responsibility for the damage to the UK science base. This is expediency not strategy.”

Sue Ferns has written to DTI Secretary of State Alistair Darling, asking how the Treasury’s rules on science spending can be put aside by DTI; and what steps he proposes to take to ensure that Britain meets the European Union’s R&D investment target of 3 per cent of GDP by 2010, as compared with 1.9 per cent today.

The DTI took back:

£29m from the Engineering and Physical Sciences Research Council

£9.7m from the Natural Environment Research Council

£6.7m from the Biotechnology and Biological Sciences Research Council

£3.1m from the Particle Physics and Astronomy Research Council

£0.5m from the Council for the Central Laboratory of the Research Councils

plus £19m from three other research councils.

Department of the Environment, Food and Rural Affairs

Sudden, unplanned, poorly explained and highly disruptive mid-year restrictions on the budgets of agencies, public bodies and voluntary groups which rely on Defra funding were caused by financial mismanagement, according to the House of Commons Environment, Food and Rural Affairs Committee.

In its February 2007 report*, the committee recognised that some factors, such as the Spring 2006 avian influenza outbreak, were beyond the department's control but said that the department itself had to take much of the blame for its precarious financial situation.

Among its criticisms the committee found the department had been "careless" and "over-optimistic" about the amount of money it would receive from the Treasury. On top of this error, additional costs such as the Rural Payments Agency debacle and the Spring 2006 avian influenza outbreak were enough to "tip the balance", said the Committee.

"We also note that the in-year nature of the budget cuts placed those bodies affected under much greater pressure than if the department had announced cuts before the start of the financial year. The department could have prevented the disruption by substantially revising 2006-07 budgets when these budgets were set in January 2006. We believe that the Department was over-optimistic in its assumption that it could cope with the financial pressures without early action," it added.

Some of the agencies and non-departmental public bodies whose 2006-07 resource budgets were changed in-year, in July 2006, to help meet Defra's £200m deficit.

Defra body	Change in 2006-07 resource budget (£)	Change in 2006-07 resource budget (%)
Environment Agency	£23.7 million	-5%
Natural England	£12.9 million	-7%
State Veterinary Service	£3.0 million	-3%
Veterinary Laboratories Agency	£2.4 million	-3%
Marine Fisheries Agency	£1.7 million	-6%
Pesticides Safety Directorate	£0.8 million	-7%
Royal Botanic Garden Kew	£0.6 million	-3%
Veterinary Medicines Directorate	£0.3 million	-7%
Meat and Livestock Commission	£0.02 million	-4%

* Defra's Departmental Report 2006 and Defra's budget, Second Report 2006-07 (HC 132)

Impact on the Veterinary Laboratories Agency

Surveillance

In the Veterinary Laboratories Agency, the majority of the Defra cuts fell on scientific surveillance. Surveillance work is effectively a portfolio of projects grouped together

within Defra contract areas. This work is done on an annual basis unlike research which is typically three to five year projects.

The VLA looked at the level of work it had planned across the contract areas and made cuts on a pro rata basis:

Emerging diseases and welfare – Project on Streptococcus suis survey was stopped, elsewhere restrictions were placed on coverage of disease investigation work and follow up testing.

Zoonosis – Planned activity on surveillance for salmonella, Brucella and European Bat Lyssaviruses (a genus of viruses that includes the rabies virus group) were reduced and a number of sub-projects on monitoring salmonella in animals were not taken forward; restrictions on "follow up" investigations were imposed.

Animal welfare – A project on epidemiological and pathological consultancy was removed from the contract.

Transmissible Spongiform Encephalopathy surveillance – Revisions to requirements resulted in lowering of activities in "Compulsory Scrapie affected flock scheme and epidemiological study of Atypical Scrapie". Some of the savings were offset by additional requirements for TSE surveys where there was some general trimming back, but additional requirements now need to be met for the EU sheep and goat scrapie abattoir and fallen stock survey.

Enhancing surveillance – Active surveillance projects proposed by the VLA Surveillance Centres operated by the Royal Veterinary College and School of Veterinary Medicine, Liverpool were not taken forward. Reductions in the VLA input into RADAR phase 1, which calculates cattle population figures using data from the Cattle Tracing System. In 2004, RADAR analysed the movement history of over 28m animals.

Tuberculosis – All projects were subject to "trimming" but due to a reduced expectation of sample throughput for TB testing, and less farms participating in one of the trials, there was little overall impact.

Exotic diseases – planned activity on most projects was trimmed. However, due to Avian Influenza requirements, additional work is being undertaken, ie wild bird survey for which Defra is providing additional funds.

Discussions are still on-going with regard to 2007-08, although it is most likely that the reduced figure for surveillance in 2006-07 will be maintained for 2007-08. While no actual further cuts are envisaged, this represents a "real" reduction in funding as no inflation is allowed for.

The amount of work that VLA will be able to undertake will be less and its ability to absorb work while still meeting its financial target will be difficult. VLA and Defra's Animal Health and Welfare Group are discussing priorities and possibilities for scope reductions in some of the work. It is too early to say what the outcome of those discussions will be.

Research

The situation for research is less clear as the timelines are different because of longer project lives. There are indications that there could be a reduction in funds available for research work although VLA had not been informed of anything specific in November 2006. Any impact, however, is not likely to be felt in 2007-08 but would have to be managed in 2008-09.

A few ongoing research projects have been considerably reduced in size most notably a project on the epidemiology of cryptosporidium (a protozoan of the genus

Cryptosporidium – an intestinal parasite in humans and other vertebrates and sometimes causes diarrhoea that is especially severe in immunocompromised individuals).

Antimicrobial drugs are used to fight infections caused by bacteria, fungi, and viruses. But microorganisms, especially bacteria, are becoming resistant to more and more antimicrobial agents. All of VLA's research "concept" proposals on antimicrobial resistance could not be taken forward. There is now very little activity in antimicrobial resistance which could leave Defra open to criticism since it is of considerable public health interest.

VLA has to maintain its scientific skill levels so that it can respond its Defra customers' requirements. Due to the specialist nature of its work, it is not practical for VLA to make short-term changes to its staffing levels. Any further cuts will most likely affect the critical mass of scientific experts in some areas that may lead to a loss of some of its most highly respected veterinary scientists.

Source: VLA submission to EFRA select committee report on Defra budget problems

Centre for Ecology and Hydrology

In March 2006, NERC Council announced a major restructuring programme for CEH. Over the next four years, four of the eight science sites will close, with the majority of staff being relocated to the remaining sites at Wallingford, Lancaster, Edinburgh and Bangor. The director's office and central infrastructure functions will be relocated from Swindon to the new HQ in Wallingford. Staff numbers will reduce from 600 to around 440 over the same period. The Dorset site will close on June 1, 2007.

As of February 2007, 160 staff had left CEH. But the organisation now has 40 vacancies to be filled by April. Wallingford is struggling to attract an appropriate level of applications for technical, computing and database work. There is a five per cent budget cut for marine work, but currently no clarity about the impact. However, it seems likely that the laboratory at Oban will be quite severely affected. Also work currently being done from Dorset on freshwater ecology, rivers, lakes and freshwater fish populations is in danger of being lost.

Scottish Crop Research Institute

Nineteen staff, some of them lead scientists in their field, are being made redundant from the Scottish Crop Research Institute. The impact of these redundancies on work programmes etc will become clear in April 2007.

Management has indicated they may have to cut work on projects funded by the Scottish Executive Environment and Rural Affairs Department. SEERAD recently changed the way it funds its science. From April 2006, research commissions became focused on policy areas which are a SEERAD priority.

SEERAD commissioned a series of 22 Work Packages – 19 in April 2006, the remaining three in November/December 2006. The work packages are supposed to be highly relevant to SEERAD policy, yet SEERAD is funding the redundancies of posts involved in their recently commissioned work packages at SCRI.

Rothamsted Research

Rothamsted is the largest agricultural research centre in the United Kingdom. It has an international reputation as a centre of excellence for science in support of sustainable land management and its environmental impact.

In February 2007, BBSRC announced its plans for the future governance of its sponsored institutes. Rothamsted Research will move to direct BBSRC control by April 2008. BBSRC and Rothamsted are looking at running the Institute of Grassland and Environmental Research's North Wyke site as part of Rothamsted.

The basic research is more at risk than before because there are fewer alternative funders. And questions over the future of BBSRC's Competitive Strategic Grant allocation may be critical to Rothamsted.

Further pressure will be put on institutes as a result of the implementation of "Full Economic Costing" (FEC). This is a costing methodology which traces costs accurately to research projects and has been operating within Rothamsted since September 2005.

The FEC for a project must cover not only the total cost of the research involved, but also a proportion of costs relating to infrastructure renewal and the ongoing sustainability of the institute. However, not all funding bodies will be prepared or capable of paying the full economic cost of a grant, as it will be significantly more than before. BBSRC itself will only pay 80 per cent, leaving the institute with responsibility for the remaining 20 per cent. The threat remains that for every five grants won, one post will have to be lost.

On the other hand, FEC is the key to viability of the organisation and site as the institute gains control over its investment in infrastructure and research strategy. The BBSRC funding stream is also more removed from direct political interference, which makes it possibly more stable.

Agriculture and Environment (AEN) Division

Scientists in Rothamsted's AEN division believe that its line of research could have definitely taken a different route if Defra funding was more plentiful – and as a result of the large scale withdrawal of Defra funding there is important work that may never now be done.

There is an urgent and important requirement for Defra to promote knowledge transfer technologies (measurements and interpretation paid for by land users, advisors, landowners and food producers) which scientists in AEN are well placed to develop from their more basic underpinning research (although that itself must now be funded from elsewhere).

Herbicide resistance: The current proposals to move Defra's Pesticide Safety Directorate to the Central Science Laboratory is causing uncertainty for staff involved in work on herbicide resistance. As PSD largely funds this research group at Rothamsted, cuts or changes to PSD's budget could have a knock-on effect.

The **Sugar Beet Productivity and Improvement Division** is based at the Broom's Barn site, Bury St. Edmunds and is the UK's national centre for sugar beet research and

extension work. The research spans a wide range of scientific disciplines and includes liaison/extension work with growers and the industry.

The division has recently had to make redundancies because funds for sugar beet research have been cut because the price farmers are paid for their sugar has fallen. The viability of the site could be in question if the numbers of staff at Broom's Barn decrease further.

"We were able to plan for the reduction in income potential from the sugar beet industry. We have been aware of a change in Defra's strategic requirements and hence funding stream. Again that is something we can plan for and, to an extent, accommodate. It was the sudden withdrawal of Defra funding opportunities that caused the greatest damage."

Long Ashton Research Station closure: A waste of energy

The Chancellor of the Exchequer, Gordon Brown wants five per cent of all UK vehicles running on biofuels by 2010. Yet his government presided over the closure of a UK research station which had particular expertise in renewable energy.

In March 2003, the House of Commons looked at the role of research, development and demonstration in moving the UK towards a non-carbon fuel future.

Using plants as sources of energy offers the potential for partial replacement of fossil fuels, thus contributing to mitigation of global warming, and to the government's objective to increase the proportion of energy derived from renewable sources. Plant material can be used as a source of energy in several ways including:

- * Direct generation of electricity through combustion of either specially grown crops or plant residues such as straw or forestry wastes.
- * As a source of various forms of fuel (gases, liquids or solids) through processes such as gasification or pyrolysis. Again these can either use specially grown crops or residues.
- * As direct sources of liquid fuels with applications in transport, particularly rapeseed methyl ester (RME or biodiesel) or ethanol. Ethanol can either be used to replace petrol or, more likely, is blended with it. Such liquid fuels may be either natural products or those produced in crop plants through genetic recombination.

The Long Ashton Research Station in Bristol (part of Rothamsted Research), had ongoing research on willows (*Salix* spp.) as a renewable energy source; these are fast growing trees managed as short-rotation coppice. Long Ashton also housed the National Willow Collection which contained over 1,000 varieties of commercially important willows. In addition to work on *Salix*, the institute had the longest running experiments in the UK on the productivity and comparative performance of different perennial grasses including *Miscanthus* and reed canary grass.

But Long Ashton closed in June 2003 with the loss of 200 posts and the site was subsequently sold to property developers.

The committee concluded: "We assessed the expenditure by public funding bodies (the research councils, government departments and the Carbon Trust) and found that the

sums invested in public research, development and demonstration lack focus and are wholly insufficient in helping the UK meet its renewables targets, in absolute terms and in comparison with the UK's competitors.

"Where UK technologies are developed, we found the private sector unwilling to develop these technologies while the government is failing to step in to take them forward or provide the necessary incentives to encourage private companies."

**For more information, please contact Sue Ferns, head of research,
New Prospect House, 8 Leake Street, London SE1 7NN.**

Tel: 020 7902 6639. E: sue.ferns@prospect.org.uk

www.prospect.org.uk