The Save British Science Society

29-30 Tavistock Square, London, WC1H 9QU
Tel: 020 7679 4995 Fax: 020 7916 8528

SBS 03/17

A consistent and workable approach to long-term sustainability of the research base

SBS response to the consultation on reforming parts of the Dual Support system

1. Save British Science is pleased to submit this response to the review of the sustainability of university research. SBS is a voluntary organisation campaigning for the health of science and technology throughout UK society, and is supported by 1,500 individual members, and some 70 institutional members, including universities, learned societies, venture capitalists, financiers, industrial companies and publishers.

Basic ethos of the proposals

2. SBS continues to see benefits in the dual support system of funding for university research, and believes that, properly balanced, the system is capable of delivering the world-beating science base that allowed the UK to win an average of one Nobel Prize in science (or share of a prize) each year between 1940 and the mid 1980s.[1]

3. We share the view that the low-price culture that has prevailed in university research is unsustainable and undesirable, and we have always held to the view that what is funded at all should be funded properly.[2]

4. So SBS has great sympathy with the ethos that the full costs of research should be known and understood, and that everyone should be clear who is responsible for meeting which elements of those costs. We have some concerns about the implementation of the new scheme, as proposed in the consultation document, but those concerns are expressed in the context of strong support for the basic ethos of moving towards a system in which costs are known are agreed.

The money involved

5. SBS has long campaigned for an increase in the resources available to fund the indirect costs of research proposals, and warmly welcomed

the acknowledgement in the 2002 Spending Review that it was no longer possible to carry on as before.

6. However, we believe it to be somewhat strange that the amount of money allocated to plug the gap was set (very precisely) at £120 million, apparently independently of any quantification of the resources needed. Various assessments, such as those by the Dearing Committee[3] and by Coopers & Lybrand[4] estimated that the shortfall of funding indirect costs was somewhere in the region of £110 million per year, in the period up to about 1997.

7. But by 2004, the amount of money the Research Councils invest in university research will have risen by at least 52%, compared with 1997 (overall resources have risen faster, but some of the new money has gone into other areas).[5] If nothing else had changed substantially, the best estimate of the money required to solve the problem would be in the region of £167 million per year, some £47 million more than is actually available. Of course, other things have changed – there have been a further six years with massive shortfalls between what is funded and what the universities are expected to carry out.

8. SBS appreciates that other factors have changed – the existence of SRIF, for example. However, we have not seen any clear justification for the figure of £120 million. It is difficult to offer opinions about the distribution of the money when it is not clear how the figure was derived.

9. Indeed, the Transparency Review showed that the earlier figures vastly underestimated the problem. It identified a total shortfall of £1175million per year in publicly-funded research in UK universities. Perhaps 75% of this is within the dual support system (some of it is presumably research carried out on behalf of individual Government Departments), and the Government believes that only about 70% of this funding gap is real (largely because of the difficulties of scoring data accurately).[6] These assumptions close the funding gap within the dual support system to about £617 million per year.

10. The difference between the £120 million available and the £617 million needed to fill the funding gap might be met in one of two ways.

11. One method would be to reduce the overall volume of research, so that the available money could be spread less thinly. On the whole, given the Government's desire to play a major role in the knowledge economy, it is probably undesirable to start by reducing the amount of research that is undertaken, and the current consultation makes it clear that the Research Councils intend to "increase the contribution" they make "to the cost of the existing volume of research that they support".

12. The alternative method of putting the system on a sustainable footing would be to increase the amount of money on the other side of the dual support system. Although the collective budget of the four Higher Education Funding Councils is set to rise by about £167 million between the 2002 and 2004,[7] there would still be a shortfall of well over £300 million, even leaving aside any new costs, such as the 1% rise in employers' National Insurance contributions, which probably represents an additional cost in excess of £10 million per year.[8]

13. No doubt there are subtleties in the calculations that SBS has missed, perhaps in the changes in the way in which university research infrastructure is funded. But the fact remains that the amounts of money stated in official Government publications to be available in the coming years do not match the funding gap identified by the Government in its Transparency Review.

14. In other words, given that the consultation specifically makes it clear that the Research Councils intend not to reduce the volume of research they fund, and given that the budgets of the Funding Councils are not going to rise fast enough to fill the rest of the funding gap identified by the Treasury, the only way of making the dual support system sustainable will be to reduce the volume of research which is funded out of the Funding Council allocation but not supported by the Research Councils.

15. This kind of research falls into two categories, namely
(i) research partly funded by an external supporter (such as a charity, industrial sponsor or Government Department) and underpinned by the Funding Councils' investment, and
(ii) research wholly funded by the Funding Councils.

16. In paragraphs 23 to 29 below, we set out the reasons why a substantial contraction in the volume of the second of the these two categories is probably impossible (because the Funding Council allocations already provide no "spare" cash to used at institutions' own discretion) and why it is highly undesirable that this kind of research has already been reduced to almost nothing.

Fixed proportion of full economic costs – differences among subjects

17. The proposal set out in the consultation document is that the Research Councils should in future pay a fixed percentage of the economic costs of each project. However, as the document acknowledges, the composition of the full costs varies enormously. In laboratory-based subjects with substantial requirements for equipment, the time of permanent staff can be a very small proportion of the overall costs, while in some other subjects – notably some areas

of mathematics and many library-based subjects – academic time is by far the main contributor to overall cost.

18. The quality-related (QR) money provided by the Funding Councils comes much closer to meeting the need for full funding of excellent work in the library-based subjects than it does in the case in the experimental disciplines. The ratio of funding – that most science and engineering disciplines receive twice as much per head as most arts and humanities – is wrong. Modern science requires more than twice the investment needed by library-based disciplines.

19. To provide some evidence for this, we compared the various disciplines' scores in the Research Assessment Exercise (RAE) obtained by the post-1992 (or 'new') universities. These institutions represent a good testing ground because most started in 1992 from a low research base across the board. Despite this, the new universities in England have enjoyed relatively good success in a range of library-based disciplines. In the most recent RAE, they gained twelve grade 5 ratings and one 5-Star rating in the 'units of assessment' numbered 50-59 (encompassing the main arts and humanities subjects, such as English, modern languages and history). By contrast, there were only two grade 5 and no 5-Star ratings awarded to these universities in the main laboratory-based science and engineering disciplines ('units of assessment' numbered 14-21 and 26-32). These problems cannot be blamed on the effects of falling student numbers in science, because the same decline applies in modern languages, yet the new universities have managed to develop research excellence there.

20. Given this disparity among subjects, it seems obvious to SBS that the proportion of the full economic costs paid by the Research Councils should vary among disciplines. We do not believe there is any danger of the "boundary disputes" to which the consultation document refers for two reasons.

21. First, the whole point of the current exercise is to move towards a system in which costs are known and understood. If reliable data exist to discriminate amongst subjects with different profiles of costs, then there should be no need for the kind of ambiguity that would fuel such boundary disputes.

22. Second, there are few, if any, such disputes at the moment among the categories of funding allowed by the Funding Councils, where laboratory-based subjects receive capitations twice those received by library-based subjects. As we have set out, many would dispute whether the ratios among subjects are sufficient (they clearly are not; much modern science manifestly requires more than twice as much investment as most arts and humanities), but few if any people dispute that the boundaries themselves are broadly reasonable.

Blue-skies research

23. SBS supports the idea of funders paying full costs, and accepts that the OST, as part of the dual support system, is entitled to believe that the Funding Councils will meet some part of the costs of the projects that are funded by the Research Councils. It is not at all clear why 60-70% should be the proportion funded by the Research Councils, although we accept that some figure must be used, and that somewhere in the region of 70% is not entirely unreasonable.

24. However, SBS notes that the budgets of the Research Councils and Funding Councils have become out of balance in recent years. As the Research Council budget rises, the need for underpinning resources increases proportionately. But while the overall budget of the Research Councils has risen by a factor of 123% (in real terms) since 1987, the Funding Councils' overall budget has risen by only 26%.[9]

25. In other words, a vastly greater proportion of the Funding Council investment inevitably now goes into meeting the indirect costs of Research Council projects, leaving little or nothing "left over" for the other purposes to which QR money might properly be applied.

26. Although the interpretation of the dual support system varies, one aspect is admirably clear in the 1993 White Paper that created the current incarnation of the system. It says that Funding Council investment is available for use "at the institutions' discretion".[10]

27. The *Cross-Cutting Review of Science and Research*, completed in advance of the 2002 Spending Review, speaks of QR providing three things, of which one is "the freedom to pursue a certain amount of blue skies research" as distinct from "the base from which…academics can make credible proposals [to Research Councils or elsewhere]". It further defines the need for "research which is directed from within institutions, which may be purely curiosity-driven or may be in rapid reaction to advances in a given field," and attributes this role to the QR funding that universities receive from the Funding Councils.[11]

28. Many institutions now feel that such discretion has evaporated, largely because of the imbalance between Research Council and Funding Council investment. To express the figures more starkly, in 1986, for every £1 of Research Council funding for specific projects, the forerunners of the Funding Councils provided £1.27 to meet indirect costs, pay for research training and allow local discretion in supporting blue-skies projects etc.[12] By the financial year 2004-05, the figure will be 66p, a fall of almost exactly a half.[13] Only a small part of this fall is attributable to the deliberate transfer of money within the dual support system.

29. SBS does not wish to seem churlish. The reason for this imbalance is that the OST has repeatedly been successful in obtaining extra investment in Government spending reviews. We applaud the OST for this, and wish it well in the future. But with its overall responsibility for oversight of the science base, it may want to assist the Funding Councils in the 2004 Spending Review, so that they can achieve similar success, and so that the dual support system can be rebalanced.

Smaller players in the system

30. SBS believes that a fundamental feature of a healthy science base is the ability for new players to enter the game, and for those that are failing to be excluded. We therefore believe that, in introducing the new arrangements, the OST must not make it prohibitively difficult for smaller institutions, or those that currently have only a very small amount of Research Council funding, to continue to win Research Council grants.

31. Some institutions may well not be able to have the new costing mechanisms in place by next autumn, or indeed for several years, and future new entrants may find them prohibitive as they start to apply for funds. Such institutions cannot be discriminated against.

32. Running the new TRAC system is a cost (staff time and resources must be attributed to it), and in the spirit of the consultation, SBS believes that the cost should be acknowledged, and it should be agreed who will meet that cost. There is no point in saying that the institutions must meet the cost themselves, since their resources are determined largely by other factors. The costs imposed on them have increased recently (in terms of having to draw up staff development plans and other schemes that are no doubt admirable in their aims) without any specific increase in resources.

33. Because of this, they must be given time to adapt to the new system. The fact that the 'mixed economy' model (of allowing two different application procedures for a while) might 'from the perspective of the Research Councils' have 'disadvantages' does not seem to us to be entirely the point. What matters is not whether staff in one government organization happen, in the short-term, to find the change inconvenient, but whether there are advantages or disadvantages to the long-term health and sustainability of the science and engineering research base.

34. The 'mixed economy' approach seems to us to be one fair way to treat institutions that are unlikely to be fully ready to identify their full costs by 2004, but which have the potential to submit genuinely first-rate applications for research grants. We further develop this idea in the section on studentships, where the ethos of the Government's

proposals seems to be diametrically opposite to Government thinking on the 'mixed economy'.

35. We believe that there is a better way of allowing smaller institutions, not yet ready to run TRAC, to continue to apply for grants. Since the bulk of the Research Councils' grant money is allocated to a small number of large institutions, all of which will be running TRAC, the OST will have good information, from a reasonable sample size, on the average full economic costs of particular kinds of research. Institutions that are not yet able to run TRAC should be allowed to submit applications that assume that their full costs fall at this average.

Studentships

36. The thinking behind the proposal on research studentships seems at first sight to be entirely at odds with the rest of the document, but SBS believes that, at least in part, it actually highlights why some of the other proposals could and should be modified.

37. The basic ethos, of identifying real costs and agreeing who will pay them, seems to have been thrown out of the window in the proposal on studentships. There appear to be two reasons for this, namely that 'it is not easy to see how the TRAC methodology could be applied' and that there are significant 'cost implications'. In other words, it is would be tricky to administer and would cost real money.

Studentship costs

38. On the subject of costs, it is absurd to say that because it will cost money to put studentships on a proper and sustainable footing, the issue will have to be swept under the carpet. The whole culture of attempting to put the research base on a sustainable footing for the long-term is about admitting that we either have to fund properly the current volume of research, or admit that, with available levels of investment, the volume must be contracted.

Studentship administration

39. On the subject of TRAC being difficult to administer, SBS does not understand why difficulties in regard to studentships mean that the new approach can be summarily dismissed, but the same cannot be done in paragraphs 53-55 of the consultation document, to alleviate the heavy burden of identifying full economic costs of research projects in institutions with a small or moderate amount of research.

40. Why is there one rule for studentships (when TRAC gets tough for research intensive institutions and the OST, the idea of identifying full economic costs will be quietly ditched), and another for research in smaller universities (TRAC is going to be costly and tough for you, but you're going to have to do it anyway)?

41. We do not argue with the idea (expressed in paragraphs 62-65 of the consultation document) that in some circumstances, there will be difficulties in identifying real full economic costs, and that some simpler system of meeting costs (such as that currently in place for funding studentships) might be appropriate.

42. But we question why the current proposals do not recognize that this might be the case for research projects in institutions that do not have the benefits of scale enjoyed by research intensive institutions. In such smaller universities, operating TRAC might be difficult and unduly costly, at least in the short term. But that does not mean these institutions cannot produce excellent research proposals and excellent research.

September 2003

Notes and references

[1] <www.nobel.se>

[2] *Science policies for the next Parliament: Agenda for the Next Five Years,* SBS, 2001 [SBS 01/03]

[3] *Higher Education in a Leaning Society,* Report of the National Committee of Inquiry into Higher Education, The Stationery Office, 1997.

[4] *Review of the dual support transfer,* Coopers & Lybrand/OST, 1995.

[5] *Forward Look of Government-funded Science, Engineering and Technology, 1996,* DTI/OST, 1996 [Cm 3257-I]; *The Forward Look 2003: Government funded science engineering and technology,* OST, 2003 [Cm 5877].

[6] *Cross Cutting Review of Science & Research*: Final Report, HM Treasury, DfES, DTI and OST, 2002.

[7] *Forward Look 2003: Government funded science, engineering and technology,* DTI, 2003 [Cm5877].

[8] The OECD *Main Science and Technology Indicators*, 2003 edition, suggest that there are about 50,000 full time equivalent researchers in the UK; if they earn an average of £25,000, 1% of the wage bill would be £12.5 million per year; an alternative calculation would be to assume that about 75% of the HEFC's budgets goes in staff costs, equivalent to £1324 million in 2004, of which % is in excess of £13 million.

[9] *Forward Look 2003: Government funded science, engineering and technology,* DTI, 2003 [Cm5877].

[10] *Realising Our Potential,* HMSO, 1993 [Cm 2250].

[11] *Cross Cutting Review of Science & Research*: Final Report, HM Treasury, DfES, DTI and OST, 2002.

[12] *Forward Look 2001, Government-funded science, engineering and technology,* DTI, 2001 [Cm 5338].

[13] *Forward Look 2003: Government funded science, engineering and technology,* DTI, 2003 [Cm5877].