



House of Commons
Science and Technology
Committee

International Policies and Activities of the Research Councils

Ninth Report of Session 2006–07



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Report, together with formal minutes

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The Science and Technology Committee

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Summary

Research is an international endeavour. It involves international collaborations ranging from the researcher-to-researcher level to the country-to-country level. The international research scene is changing as the domestic research bases of countries such as China and India rapidly expand. It is crucial that the UK adapts its research support mechanisms accordingly.

The Government has set itself the aim of being the partner of choice for potential collaborators and the Research Councils have a key role in helping the Government to meet this aim. The Research Councils have taken several steps to improve their international work including developing international strategies, creating a Research Councils UK (RCUK) international team, and establishing more offices abroad. Their activities still, however, lack co-ordination and are not sufficiently high-profile. We recommend that RCUK drives cross-Council co-ordination and the Councils develop ways of improving the visibility of their schemes. In order to reduce difficulties relating to funding, we recommend that the Research Councils establish a small central fund for travel grants and visiting fellowships to be administered by RCUK using simple application methods. We also recommend that the Research Councils consult stakeholders on how their policies relating to mobility could be improved.

The activities of the Research Councils are complemented by schemes funded by Government departments, Learned Societies, charities and others. Within Government, international engagement is co-ordinated by the Global Science and Innovation Forum (GSIF). We welcome the work of GSIF but emphasise that it needs to increase its visibility, publicise itself and prove its worth. Co-ordination and communication is essential in order to avoid overlap between similar schemes. We recommend that the RCUK international team take steps to improve co-ordination with other bodies and that the Department for Innovation, Universities and Skills (DIUS) work with relevant organisations to ensure that there is minimal overlap between different schemes.

The main mechanism for supporting collaborative, trans-national research in the European Union is the EU's Framework Programme. We are concerned that European programmes, such as Framework Programme 7, are less attractive to UK researchers because the programmes have a reputation for bureaucracy and are unlikely to cover the full economic costs of research. We recommend that DIUS works with the Research Councils to advertise the improvements in Framework Programme 7 and to devise a solution to cover the shortfall between Framework Programme 7 funding and the full economic costs of research.

In order to assess the UK's position and measure its success in relation to international collaboration and international research relationships, we recommend that the Government and Research Councils work to develop mechanisms for the systematic collection of data. We hope that the Research Councils will develop a more high-profile, coherent and co-ordinated approach to international work and that appropriate measurements are developed to demonstrate its impact.

4 International Policies and Activities of the Research Councils

1 Introduction

The international nature of research

1. Research is an international endeavour. International collaboration enables researchers to gain access to larger pools of ideas, emerging knowledge, and highly trained people. There is evidence both that collaboration between UK researchers and overseas researchers is increasing and that it can produce better research. A report by Arthur D. Little Ltd in November 2005 found that in 1992 20.5% of UK scientific publications had international co-authors, by 2003 this figure had almost doubled to 39.2%.¹ In April 2006, a study of the citation performance of papers with UK-only authors and UK-USA co-authors showed that papers that resulted from international collaboration were more frequently cited and were published in higher impact journals than those with UK-only authors.² There are also some disciplines such as particle physics or space science, where projects owing to their scale or the funding required, are undertaken by a number of countries working in partnership. Other disciplines, such as polar research, language research, and social research, can be entirely location-dependent.³ Finally, some of the challenges that face humanity, such as climate change or HIV/AIDS, transcend national boundaries and should involve the best scientists and engineers in the world working together. The success of the Human Genome Project illustrates the importance of enabling international collaborative research.

2. Whilst the UK has traditionally undertaken research internationally, the international scene is changing and it is crucial that the UK adapts its research support mechanisms accordingly. In 2003, the Department of Trade and Industry's report, *Competing in the global economy: the innovation challenge*, highlighted the importance of trade liberalisation, the reduction in communication and travel costs, and the rise of global communications, in transforming the competitive nature of the global economy.⁴ These factors inevitably impact upon the research community resulting in, for example, increased mobility of researchers and students. The Royal Academy of Engineering states that the proportion of foreign students among PhD students in the UK is second only to the US (in absolute terms). In 2003, 51% of engineering doctoral degrees in the UK were awarded to foreign students.⁵ The domestic research bases of countries such as China, India, and Iran are expanding rapidly and the UK needs to develop research relationships with these countries.⁶

3. The Government's *Science and Innovation Investment Framework 2004–2014* acknowledged the importance of international links, setting the objective of enhancing the

1 Arthur D. Little Ltd., *Internationalisation of research and development in the UK – A review of the evidence*, November 2005, p 45-46.

2 Professor Sir Gareth Roberts, *International Partnerships of Research Excellence: UK-USA Academic Collaboration*, April 2006, p 2

3 Ev 90

4 DTI, *Competing in the global economy: the innovation challenge*, December 2003, p 8

5 Ev 67; National Science Board, *Science and Engineering Indicators 2004*, 2004, chapter 3

6 Ev 41

UK as a prime location for research and development. The Framework recognised that one of the key features of the UK as an attractive research and development location was the internationally competitive nature of its science base. For these reasons, the Government set itself the aim that “the UK should be a ‘partner of choice’ for global businesses looking to locate their R&D, or foreign universities seeking collaboration with the science base or business.”⁷

4. The Research Councils have a key role in helping the Government to meet this aim. Research Councils UK (RCUK) states that the Research Councils:

recognise that to grow or indeed maintain the strength of the UK research base within the evolving global context, and to maximise the UK’s influence on the direction and exploitation of world research, they need to evolve their policies and target their investment decisions so that their communities can take full advantage of global opportunities.⁸

The Research Councils also have to meet a Public Service Agreement (PSA) Target to “improve the relative international performance of the UK research base and improve the overall innovation performance of the UK economy.”⁹ This Report explores what the Research Councils can do to improve their current international activities and policies.

Our inquiry

5. This inquiry is the third in our series of thematic scrutiny inquiries into aspects of the work of the Research Councils.¹⁰ On 6 March 2007, we announced this inquiry into the international policies and activities of the Research Councils, inviting evidence on the following points:

- The strengths and weaknesses of existing Research Council and Office of Science and Innovation (OSI) mechanisms and activities to maintain and promote international collaboration;
- International collaboration through the European Union Framework Programme, including resources enhancing partnership between the Research Councils and European agencies in the new Framework Programme 7 initiative and the provision of resources to stimulate UK participation in international programmes;
- The effectiveness of collaboration between the Research Councils and the Government departments involved in international scientific activities, including the Office of Science and Innovation (OSI), Department for Environment, Food and Rural Affairs (Defra), the Foreign and Commonwealth Office (FCO) Science and Innovation Network and the Department for International Development (DFID); and

7 *Science and Innovation Investment Framework 2004-2014*, p 17

8 Ev 90

9 Ev 154

10 Science and Technology Committee, Third Report of Session 2005-06, *Research Council Support for Knowledge Transfer*, HC 995-I; Science and Technology Committee, Fourth Report of Session 2006-07, *Research Council Institutes*, HC 68-I

- The impact of the Research Councils' policies on the international mobility of scientists and engineers.¹¹

6. We received 31 submissions in response to our call for evidence. We held three oral evidence sessions and heard from the following:

- Professor Colin Blakemore, Chief Executive of the Medical Research Council (MRC), Professor Ian Diamond, Chief Executive of the Economic and Social Research Council (ESRC) and Chair of the Executive Group of RCUK, Professor Keith Mason, Chief Executive of the Science and Technology Facilities Council (STFC), Dr Randal Richards, Interim Chief Executive of the Engineering and Physical Sciences Research Council (EPSRC);
- Professor Stuart Palmer, Deputy Vice-Chancellor, University of Warwick, Professor Alan Jenkins, Director of the Water Science Programme, Centre for Ecology and Hydrology, Professor Lorna Casselton FRS, Foreign Secretary and Vice-President, The Royal Society, Dr Bernie Jones, Head of International Policy, The Royal Society, Dr Lloyd Anderson, Director, Science, British Council; and
- Professor Sir Keith O'Nions, Director General of Science and Innovation, Office of Science and Innovation (OSI), Department of Trade and Industry (DTI).

We are grateful to all those who provided us with written and oral evidence.

7. On 28 June 2007, the Prime Minister announced changes to the machinery of Government. The Department of Trade and Industry (DTI) and the Department for Education and Skills have been replaced by three new departments: the Department for Business, Enterprise and Regulatory Reform, the Department for Innovation, Universities and Skills (DIUS) and the Department for Schools, Families and Children. The responsibilities of the Office of Science and Innovation (OSI), previously within the DTI, have moved to DIUS and the OSI as a distinct body no longer exists. However, its work has been taken over by DIUS and the schemes referred to in Chapter 4 will be run by this department.

The Structure of the Report

8. In the following chapters of this Report, we take an overview of support for international research in the UK. We consider first the UK's current position and the ways in which the success of international collaborations can be measured. In Chapter 3, we focus on the current activities and strategies of the Research Councils, including the establishment of international offices. We also discuss the issue of funding and whether there should be a dedicated funding stream for international activities. Chapter 4 explores the success of Government initiatives such as the Global Science and Innovation Forum, and the work of Government departments such as DFID, FCO and DTI (now DIUS). In Chapter 5, we move onto the involvement of other organisations, such as the Royal Society and British Council, in supporting international research. Finally in Chapter 6 we consider the role of

11 Science and Technology Committee, Press Notice No. 22 of Session 2006-07

the Research Councils in promoting European research programmes such as Framework Programme 7.

2 The UK's position

UK's current position

9. According to RCUK, the UK is a world leader in research and the UK's talent pool of researchers is world class.¹² It notes that "the Councils have been successful in enabling international collaboration, as evidenced from international science reviews and bibliometrics studies which have shown increasing levels of international co-authorship in scientific publications."¹³ Evidence Ltd, a company that specializes in data analysis, reports and consultancy focusing on the international research base, states that the UK's rate of international collaboration has increased progressively over the last ten years. Using Thomson Scientific, which covers 8,700 journals of international standing, Evidence Ltd notes that about 35% of 700,000 catalogued research articles published by UK-based researchers over the last ten years have had a co-author from another country.¹⁴

10. The UK's position could, however, be improved. Evidence Ltd argues that:

The UK has a good share of international collaboration, but it is not as strong as might be anticipated, it is not expanding as rapidly as some countries, and it is less consistent in the biomedical areas where the UK has a position of world leadership on research quality.¹⁵

According to the DTI report, *Competing in the global economy: the innovation challenge*, 95% of the world's science and technology is based outside the UK.¹⁶ With increasing focus on international collaboration from the UK's established competitors such as Germany, France and the US, it is important that the UK takes advantage of emerging opportunities and responds to potential competition.

Measurements of success

11. The foregoing statements regarding the UK's current position are primarily based upon bibliometric studies. There are, however, many ways of measuring the success of international activities ranging from focusing upon the inputs (eg. money invested), to focusing upon the level of activity (eg. number of projects or number of people involved), to focusing upon the outputs (eg. number of publications or number of citations).¹⁷ There are often problems with the accuracy of some of these measurements. It is difficult to gather true data relating to international activity because relationships are often developed and maintained at a researcher-to-researcher level without support from, or reference to, formal mechanisms such as those run by the Research Councils. Furthermore, it is difficult to quantify the substantive value of visiting fellowships or travel grants. In relation to the

12 Ev 90

13 As above.

14 Ev 42

15 Ev 41

16 DTI, *Competing in the global economy: the innovation challenge*, December 2003, p 16

17 Ev 41

high-level visits that he undertakes to other countries, Professor Sir Keith O’Nions, Director General of Science and Innovation, told us that “It is very difficult to quantify the value of visits, but you know how much you lose if you do not make them.”¹⁸

12. The statistics quoted by the different Research Councils demonstrate that they do not have a consistent approach to measuring their performance in relation to international activities. MRC, for example, referred to the number of people involved in projects, telling us that of approximately 950 current active research grants to University-based researchers, about one third report international co-applicants or collaborators.¹⁹ In contrast, the Natural Environment Research Council (NERC) focused upon publications stating that approximately 38% of ISI (Thomson Scientific) publications arising from NERC funding in 2005 had one or more overseas co-authors.²⁰ The Biotechnology and Biological Sciences Research Council (BBSRC) employed another approach, concentrating primarily upon the money that it had invested in various international schemes.²¹

13. The Royal Society and FCO both criticise the Research Councils for the lack of information that they gather regarding their international activities. The Royal Society argues that “Many of the RCs [Research Councils] lack mechanisms for recording information about international collaboration, and it is therefore difficult to quantify the amount of international collaboration which they support.”²² The FCO states that “it can be difficult to obtain comprehensive data on the amount of collaborative funding the UK has with a specific country”.²³

14. In relation to this lack of information, Professor Sir Keith O’Nions told us that:

Research Councils do not [...] at the present time systematically collect data on international collaboration that is funded by them. [...] the Research Councils are considering developing a common approach to the collection of information regarding the international dimension of funded research. The Department for Innovation, Universities and Skills will continue to work with the Councils in developing such an approach.²⁴

15. We believe that it is important for the UK to be able to assess its position and measure its success with regard to international collaboration and international research relationships. We recommend that the Research Councils and the Department for Innovation, Universities and Skills work together to develop common mechanisms for the systematic collection of data on international collaborations and to develop ways of assessing their performance in this field.

18 Q 255

19 Ev 129

20 Ev 135

21 Ev 111–112

22 Ev 60

23 Ev 54

24 Ev 168

3 Research Council activities & policy

Current activities

16. The Research Councils engage at different levels in international activities. International partnerships dominate the work of some Councils such as STFC and NERC, whilst others such as the Arts and Humanities Research Council (AHRC) are just beginning to develop their international policies. This diversity is inevitable because some Councils such as STFC “live and breathe” international co-operation through bodies such as the European Space Agency and CERN.²⁵ Box 1 shows the variety of schemes undertaken by the different Councils. These schemes range from networks that encourage the development of researcher to researcher relationship, to agreements that underpin partnerships between institutions, to Memoranda of Understanding at the country to country level.

Box 1: Examples of International Activities of Research Councils

Travel grants

- BBSRC enables any grant holder to apply for funding to visit any other country during the course of their research
- STFC's rolling grants give researchers the flexibility to use funding to travel abroad without submitting a separate application for funding travel.

Fellowships

- BBSRC provides David Phillips postdoctoral fellowships to researchers from any country
- Research Councils support the Dorothy Hodgkin Postgraduate scheme that brings students from India, China, Hong Kong, South Africa, Brazil, Russia and the developing world to study in the UK
- EPSRC runs a “Fellowship and Visiting Researcher” scheme
- ESRC runs a Visiting Fellowship scheme

Funding for workshops or networking

- AHRC supports a Research Networks and Workshops scheme
- BBSRC provides funding for grant holders to initiate activity through a workshop with UK and overseas researchers. 40 workshops have been held in past five years.

Funding for international partnerships

- BBSRC's “Partnership Awards” provide support for up to four years for specific interactions with researchers in Japan, China or India.
- NERC's “International Opportunities Fund” supports new international partnerships.

Schemes with specific countries

- BBSRC has co-funded calls for research proposals with Agence Nationale de la Recherche (ANR) and L'institut national de la recherche agronomique (INRA) in France
- ESRC and the British Academy support visits programmes with South Asia and the Middle East
- NERC runs joint calls with the USA, Netherlands and Norway
- EPSRC runs joint funding calls with the National Science Foundation in the USA

Memoranda of Understanding

- Memoranda of understanding with many overseas funders. In 2006 the Research Councils had 35 agreements with US funding agencies or research organisations, 30 with Chinese organisations and smaller numbers with other key funders or research organisations in Japan, Germany, India, France, Korea, Canada etc.

Support for international laboratories

- STFC contributes to astronomical observatories in Hawaii and Chile
- MRC funds two overseas units in the Gambia and in Uganda
- BBSRC's Rothamsted Research has three joint laboratories in China
- NERC has a facility at Ny Ålesund in Norway

Funding for major international programmes

- STFC pays the UK's subscription to the European Organisation for Nuclear Research (CERN), the European Southern Observatory, and the European Space Agency (ESA)
- MRC pays the UK's subscription to the European Molecular Biology Laboratory
- NERC has invested in the Integrated Ocean Drilling Programme (IODP)
- EPSRC funds the UK fusion programme, which contributes to the International Tokamak Experimental Reactor (ITER)

Support for International Project Offices in the UK

- NERC supports project offices such as those for the Climate Variability and Predictability Programme (CLIVAR) and the International Polar Year (IPY).

Source: Ev 92, 93, 100

17. During this inquiry, we have heard that the bulk of international engagement and collaboration is usually undertaken by researchers directly, often without reference to the Government or Research Councils. The Government's Global Science and Innovation Forum Strategy acknowledges this:

The vast majority of interactions involving individual UK scientists and UK research establishments are bottom-up— driven by the scientific needs for and assessments of the mutual benefits of working together.²⁶

This researcher-to-researcher interaction is crucial. Professor Keith Mason, Chief Executive of STFC, told us that the “most successful, long-term collaborations are built on a person-to-person relationship and not an institute-to-institute relationship.”²⁷ Many of the Research Councils' activities are thus focused upon addressing barriers to collaboration at this level, such as funding or bureaucratic complexity.²⁸ The Councils avoid dictating to researchers whether or not they should collaborate internationally and instead focus upon facilitating international engagement by promoting the UK science base through developing Memoranda of Understanding and establishing schemes with specific countries. **We acknowledge the diversity of schemes across the Research Councils and encourage the Councils to share best practice.**

Strategy

Individual Research Council Strategies

18. The Research Councils, driven by OSI, have developed international strategies.²⁹ Box 2 provides an overview of the main elements in each strategy.

26 GSIF, *Global Science and Innovation Forum: a strategy for international engagement in research and development*, October 2006, p 19.

27 Q 16

28 Ev 108

29 Q 261

Box 2: Overview of Research Councils' International Strategies**AHRC International Strategy**

Three principal aims:

1. Facilitating access to other funding sources
2. Fostering collaboration to improve the quality of funded research
3. Improving operational effectiveness and evaluation through cooperation and sharing of best practice

Strategy focuses on Europe, US, China Region and South Asia.

BBSRC International Strategy

Aim: "That the UK remains a world leader in the biosciences, and that academic research, industrial R&D and the UK economy benefit from the increasing scientific activity across the globe."

Four interrelated areas of activity:

1. Promoting movement of people
2. Enabling international research and collaboration
3. Ensuring access to world-class infrastructure and information
4. Discharging its global responsibilities

EPSRC International Strategy

Five actions:

1. Provide funding for UK researchers to collaborate internationally with their chosen partners.
2. Help UK researchers to do well from European Union programmes. The Framework Programme has many opportunities and we, together with other organisations, can provide help and support to ensure that UK research is well connected into the European Research Area.
3. Work closely with other UK organisations involved in international research, including Research Councils UK, the Foreign and Commonwealth Office, Office of Science and Innovation, British Council, Royal Society and the UK Research Office in Brussels.
4. Be well-informed about international science policy developments to make sure that our decisions are informed by current international thinking.
5. Involve the international research community in EPSRC activities, particularly through international reviews of EPSRC programmes and involvement of overseas researchers, especially from target countries, in peer review.

Focused on developing collaborations with US, Europe, China, India and Japan.

ESRC International Strategy

Goal: By 2010, being one of the global champions of international social and economic science.

Activity is focused upon working to:

1. Remove barriers to international research collaboration
2. Achieve a leading status for the UK in European collaboration
3. Establish the UK as the partner of choice for US social and economic researchers, and as a key partner for newly-emerging regions of research strength
4. Become a world leader in social science data issues
5. Work productively with relevant UK Government departments in procuring the best possible research evidence for public policy

The ESRC aims to embed international engagement in every aspect of its activities including training, capacity development, responsive grant schemes, research resources, knowledge transfer, and major research investments such as centres.

MRC International Strategy

Addresses two main themes:

1. Global health research where the outcomes will benefit health in the UK and developing countries
2. International research that enhances the competitiveness of the UK knowledge and health base

Focus of international work:

1. To influence and shape the international research agenda
2. To encourage international collaboration in biomedical research
3. To encourage the movement of researchers and promote the UK as the partner of choice

NERC International Strategy

NERC states that it will:

1. Work with scientists, funders and environmental policy makers from the UK, the EU, other

- countries and international organisations;
2. Fund world-class scientists to work in and with the UK community. It will fund UK scientists to collaborate with the best groups, wherever located;
 3. Encourage UK scientists to establish international collaborations at early stages in their careers. It will work to overcome the barriers to overseas research students wishing to study in the UK;
 4. Provide support for UK participation and leadership in international collaborative programmes;
 5. Enhance international collaboration within its own programmes.

STFC International Strategy

STFC came into being on 1 April 2007. It is still in the process of formulating its policies and strategies.

Source: Ev 90

19. Witnesses have highlighted that the strategies vary in usefulness and quality. Professor Palmer from the University of Warwick told us that whilst some of the international strategies, for example ESRC's strategy, were good, others such as AHRC's strategy were "motherhood and apple pie".³⁰ Dr Bernie Jones from the Royal Society reiterated this point: "some are longer than others, some are older than others, and some are more focused than others. Some of them, we believe, are reasonably good, some are almost very good".³¹ He highlighted the BBSRC's policy as an example of a good strategy.

20. Several submissions have criticised the Research Councils' international strategies more generally, observing: a lack of cohesion between the policies; a lack of connection to strategies in other countries; a lack of clarity regarding country by country priorities; and a poor correlation with the overall strategies. The Royal Society was perhaps the fiercest critic of the strategies but its analysis was echoed by the Royal Academy of Engineering, the FCO Science and Innovation Network (SIN), and the NERC Centre for Ecology and Hydrology.³² We are particularly concerned that a lack of detail in the strategies could mean first, that the Research Councils miss out on opportunities to develop relationships because partners such as the FCO are unaware of their priorities, and secondly, that there could be unwitting duplication of activities by other organisations such as the academies.

21. Professor Sir Keith O'Nions, Director General of Science and Innovation told us that:

an international dimension and strategy should really be embedded in all of the delivery agents that we have [...] and we should have a very clear strategy from those organisations. This probably needs to be clearer than it has been in the past all round, and we are asking the Research Councils to produce much clearer strategies for each of them and an overarching one for RCUK.³³

He also said that he hoped that the new RCUK strategy would help to align the policies of the Councils and would address criticisms of the existing strategies, particularly from the Royal Society.³⁴

30 Q 161

31 Q 216

32 Ev 41, 68, 86, 53

33 Q 238

34 Q 261

Research Councils UK Strategy

22. The RCUK international strategy is to be published this summer. It will set out the Councils' collective international aims and priorities, including to:

- “a) Promote collaboration between UK researchers and the best in world, particularly those in Europe, the US, China and India
- a) Promote the movement of researchers and students to and from the UK
- b) Provide UK researchers with access to world class facilities and data
- c) Influence the international research agenda in terms of strategy formulation, priority setting and research delivery and exploitation
- d) Raise the collective international visibility of the Research Councils.”³⁵

23. As stated by Professor Sir Keith O’Nions, the RCUK strategy is intended to help align the policies of the Research Councils and improve cross-Council co-ordination. RCUK told us that the Research Councils recognise that there is an “increasing need to present the UK research endeavour collectively on the international stage and increasing opportunities for Councils to delivery some activities jointly.”³⁶ The RCUK strategy is part of this agenda as are the creation of an RCUK international team and the establishment of more RCUK offices abroad (paragraph 33).

24. The development of the RCUK strategy and the RCUK international team has been welcomed by stakeholders. The FCO told us that these changes will “undoubtedly benefit the RCs”.³⁷ Universities UK welcomed the move towards a strategy and hoped that it would identify cross-Council issues and ensure a consistent approach.³⁸ Dr Jones from the Royal Society reiterated this, saying that he hoped the new strategy would align the Research Councils’ strategies, practices and procedures.³⁹ **We welcome the development of the international strategies and recommend that individual Councils review their strategies in the light of the new RCUK strategy.**

Co-ordination

25. Whilst the Research Councils may be moving towards a unifying strategy, a lack of alignment and co-ordination between the current activities and policies of the Councils has been a recurrent theme in this inquiry. The Royal Society told us that the picture painted to overseas partners was “chaotic”.⁴⁰ The British Council stated that the lack of a coherent policy from the Research Councils made it difficult to work with them abroad. It noted that:

35 Ev 109

36 As above.

37 Ev 51

38 Ev 152

39 Q 219

40 Ev 63

The arguments that the Research Councils are “concerned only with wealth creation in the UK” and “seeking excellence wherever it might be” do not facilitate a joined-up approach to international collaboration, and make it difficult for the British Council to see where it can best add value to the efforts of others.⁴¹

26. The Research Councils have already developed a Research Council International Network in order to attempt to address the problem of co-ordination.⁴² The network holds meetings between Research Council international teams and key stakeholders. The FCO told us that this network was useful.⁴³ The Royal Society was more sceptical, saying that the network “has yet to prove its ability to generate significant coordinated activity”, although it acknowledged that the network was central to the creation of a RCUK office in China (paragraph 35).⁴⁴ Professor Sir Keith O’Nions told us that the criticisms regarding the alignment of the Research Councils’ international work had some justification and agreed that there was “a great deal of room for improvement”.⁴⁵ He also acknowledged that the onus was on RCUK to produce coherence and that “quite a lot is hanging on RCUK’s ability to pull that off.”⁴⁶ When asked if he had confidence in RCUK, he confirmed that he did.⁴⁷

27. As well as a lack of co-ordination between the Councils, the FCO Science and Innovation Network (SIN) identified a problem within Councils in co-ordination between international teams and programme managers. The international teams within the Councils are small and not resourced to have in-depth knowledge of all topics. On occasion, it is thus necessary for the FCO to contact the relevant programme manager directly. The FCO told us that SIN officers have occasionally received different information from the Council international team and the relevant Council programme manager.⁴⁸ When a further organisational layer is added, that of the RCUK international team, it is important that there are strong channels of communication between, not only the RCUK and Council international teams, but also between the teams and the relevant programme managers.

28. We are concerned that the Research Councils’ activities and policies are not sufficiently co-ordinated either internally or with one another. RCUK should drive cross-Council co-ordination and ensure that the Research Councils’ activities and policies are well aligned. We recommend that RCUK review its next steps to improve the co-ordination of activities beyond the creation of its strategy and establishment of the international team.

41 Ev 159

42 Ev 91

43 Ev 53

44 Ev 62

45 Q 261

46 Q 265

47 Q 266

48 Ev 53

Visibility

29. As well as the issue of co-ordination, the lack of visibility of Research Council strategies and activities has been raised on several occasions. The University of Sheffield told us that RCUK funding to facilitate international collaboration was “not generally known nor overtly promoted”.⁴⁹ The University and College Union reiterated this, saying that awareness of Research Council initiatives remained fairly low in the academic and research community.⁵⁰ Professor Jenkins from the Centre for Ecology and Hydrology explained that “Communication could clearly be improved because there are many schemes/major schemes which we do not know about.”⁵¹ An example is the EUROHORCS (Heads of European Research Councils) “Money follows Researchers” scheme, which was established last year. This scheme enables researchers to take their grant funding with them when moving within the EU. During oral evidence, Professor Colin Blakemore, Chief Executive of the MRC, and Dr Randal Richards, Interim Chief Executive of the EPSRC, told us that none of their researchers had taken advantage of the scheme.⁵² In contrast, we heard from the British Council and the Royal Society that their own similar schemes were oversubscribed.⁵³

30. We believe that the difference between the uptake of these schemes is accounted for by their visibility within the scientific community. The Research Councils have tended not to advertise their international work. Dr Randal Richards, for example, acknowledged that EPSRC’s international activities did not have a high profile, although he said that EPSRC was working to improve this situation.⁵⁴ The low profile of Research Council schemes inevitably has a knock-on effect upon the levels of subscription. The Royal Academy of Engineering emphasised to us that the problem with Research Council activities and policies in the international sphere was not that they were fundamentally flawed but rather the fact that “the opportunities and benefits were not well publicised.”⁵⁵ The University of Warwick reiterated this saying that “the Research Councils’ reporting of their international activities is poor, even where the activities themselves are exemplary.”⁵⁶ Even if one is actively looking for international information on some of the Research Councils’ websites, it is not necessarily easy to find their strategies or to discover information about international funding schemes.⁵⁷ We have found that NERC’s website, for example, is the most difficult to navigate, whilst EPSRC’s is the clearest.

31. The Research Councils are conscious that they need to focus upon the outcome (the best science), rather than upon the means (whether or not a researcher travels abroad). For that reason they appear to be somewhat reluctant to advertise international opportunities strongly in case they are thought to be interfering with researchers’ individual priorities or

49 Ev 58

50 Ev 81

51 Q 140

52 Qq 95-96

53 Qq 210-211

54 Q 29

55 Ev 68

56 Ev 55

57 Q 161

research partnerships. Professor Ian Diamond, Chief Executive of ESRC, told us in relation to the “Money Follows Researchers” scheme that “It is a scheme which has removed a barrier and therefore it is available, but I do not think it would be for us as research councils to propagate it.”⁵⁸ We believe, however, that this somewhat passive approach by the Research Councils results in an uninformed research community that is unaware of the vast range of opportunities and funding available to it. The Research Councils are responsible for communicating with the research community, providing researchers with options, and informing them when barriers to international collaboration have been removed.

32. We are concerned that the Councils’ activities are not widely known about in the research community and recommend that the Councils develop ways of improving the visibility of their schemes and disseminating information to the research community.

International offices

33. The Research Councils have been sponsoring an office, the UK Research Office (UKRO), in Brussels since 1984. UKRO’s mission is to promote effective UK participation in EU funded research programmes and higher education programmes by:

- “supporting sponsors and subscribers through early insight and briefing on developments in European programmes and policies;
- disseminating timely and targeted information on EU funding opportunities;
- providing high quality advice, guidance and training on applying for and managing EU projects; and
- exchanging information between the UK research and higher education community, the Institutions of the European Union, and other countries participating in EU programmes.”⁵⁹

Its services include a website, a web—and email-based Information Service, an enquiry service, briefing visits and an annual conference.⁶⁰

34. We have received very positive feedback about UKRO and this echoes the findings of our predecessor Committee in 2003.⁶¹ The Royal Academy of Engineering told us, for example, that the office provides a “helpful role in disseminating information about European funding opportunities.”⁶² The National Oceanography Centre, Southampton (NOCS) and Rothamsted Research said that UKRO’s activities were welcomed by the research community, were well utilized and should continue to be supported.⁶³ The

58 Q 96

59 Ev 96

60 Ev 151

61 Science and Technology Committee, Sixth Report of Session 2002-03, *UK Science and Europe: Value for Money?*, HC 386-I, p 37

62 Ev 69

63 Ev 75

Institute of Grassland and Environmental Research (IGER) reiterated these points, stating that UKRO was a useful conduit for information from the Commission and a source of advice on European Framework Programme regulations, although it called for UKRO to be more proactive in early stage programme development.⁶⁴

35. The Research Councils have recently decided to open new offices in Beijing and Washington. The establishment of the Beijing office is being led by the MRC. According to the MRC, the office will:

develop information resources about high-quality research in China and provide a mechanism, in partnership with FCO SIN and the British Council, for showcasing the work of the Research Councils to the Chinese. The office will develop small grant schemes to help promote collaborations between China and UK through workshops and exchange visits.⁶⁵

The FCO explained to us that it was important for the Research Councils to have an office in China so that they could interact directly with the research funding bodies and the research community. This work will complement the relationships already developed by the FCO at a governmental level. French and German research funders have already established similar offices in China.⁶⁶ The UK office in Washington is due to be opened in late 2007 and discussions are at a preliminary stage regarding an office in India.⁶⁷

36. It is unclear how these new offices will be funded and how their performance will be assessed. UKRO is funded by the Research Councils, with BBSRC as the managing agent, and by approximately 140 subscriber organisations. Any UK higher education institution, charity or public research organisation can subscribe to UKRO. Professor Colin Blakemore, Chief Executive of MRC, told us that “we anticipate and hope that UK universities either collectively or individually will be joining the work of the office in Beijing and therefore contributing financially to it. Exactly what form that contribution takes has not yet been formalised.”⁶⁸ Professor Ian Diamond, Chief Executive of ESRC, explained that all of the Research Councils will provide funding for the Washington office but did not clarify whether other organisations would be involved.⁶⁹ In relation to performance management, Professor Blakemore told us that the RCUK international team was developing metrics for the performance of the new offices.⁷⁰ Although we welcome the establishment of the new overseas offices following the success of UKRO, the performance of these offices should be monitored closely in order to ensure that they fulfil their purpose.

37. RCUK has told us that the aim of these new offices is:

to provide additional resources in priority countries/regions to help raise the collective profile of the Research Councils amongst national research funders and

64 Ev 72

65 Ev 130

66 Ev 53

67 As above.

68 Q 69

69 Q 68

70 Q 55

academia and promote and engender collaboration opportunities. The offices provide dedicated funding and local expertise (in tandem with the FCO's Science and Innovation posts) to enable UK research funders, research organisations and individuals to collaborate effectively.⁷¹

It is essential that these offices raise the *collective* profile of the Research Councils and that they provide a coherent picture of research in the UK. We have heard during this inquiry about the importance of ensuring that other countries understand the Research Council structure in the UK and perceive it to be co-ordinated. The FCO told us that "it is essential that the UK is, and is seen by other countries to be, joined up."⁷² Professor Colin Blakemore, Chief Executive of the MRC, acknowledged this, saying that "we are increasingly recognising the importance of working together within RCUK to brand UK science collectively".⁷³ We hope that the RCUK overseas offices will act as points of contact for researchers abroad and will establish a single RCUK brand. By doing so, we hope that the Research Councils will be able to overcome the misgivings of organisations such as the Royal Society, who feel that the structure of the Research Councils is overly complicated for overseas researchers and prevents the presentation of a coherent face to the international community.⁷⁴

38. We welcome the establishment of more RCUK offices abroad. These offices should present a coherent picture of UK science and be worthwhile contact points for international collaborators. We recommend that RCUK clarify how these offices will be funded, how their performance will be monitored and how their activities will be reported.

Funding

Level of funding

39. It is difficult to ascertain the exact amount spent by the Research Councils on international activities. Several Research Councils do not operate specific mechanisms for international collaboration but rather support work that has an international element through normal responsive mode funding. Professor Sir Keith O'Nions told us that "Almost half of everything that we do already has an international dimension."⁷⁵ Some Councils do, however, run explicitly international schemes. In 2006, the Research Councils spent approximately £262 million on international schemes and activities, not including international work supported by responsive mode grants. Of this £262 million, approximately £198 million was spent on subscriptions to international facilities or programmes as shown in Table 1.

71 Ev 94

72 Ev 53

73 Q 38

74 Ev 60

75 Q 258

Table 1: Research Council Subscriptions to International Programmes/Facilities (2006)

Programme/Facility	Research Councils Paying Subscription	Approx Annual Funding
Human Frontier Science Programme	MRC, BBSRC	£985 k
European Molecular Biology Organisation	MRC, BBSRC	£1.4 m
International Agency for Research on Cancer	MRC	£768 k
Institut Laue-Langevin	PPARC (now STFC)	£13.7 m
European Synchrotron Radiation Facility	PPARC (now STFC)	£7.2 m
CERN	PPARC (now STFC)	£78.6 m
European Space Agency	PPARC (now STFC)	£59.7m
European Southern Observatory	PPARC (now STFC)	£23.1 m
Other international partnerships eg. GEMINI, AAO, JCMT, ING, EISCAT, ATLAS, CMS, SNO, AUGER, GEO600	PPARC (now STFC)	£12.5 m

Source: GSIF, *Strategy for international engagement in research and development*, p 48-49

40. The remainder of the funding for international schemes was spent as illustrated in Table 2. The table does not take account of ESRC schemes such as bilateral agreements, 'matchmaking' schemes, visits programmes or review of international data sources that did not have allocated funds in 2006.

Table 2: Research Council International Programmes (2006)

Scheme/Programme	Description/objective	Approx annual funding
Research Council involvement in ERA-NET	The Research Councils are involved in a wide range of ERA-NET activities and projects with partners in the EU and other associated countries. The objective of the ERA-NET scheme is to improve co-operation and co-ordination through the networking of research activities and the mutual opening of national and regional research programmes.	£8.1 m
EUROCORES	The scheme provides a mechanism for multinational collaboration within Europe in basic research bringing together national funding agencies and national research organisations to provide a critical mass of expertise and resources	£ 3.14 m
European Science Foundation (ESF)	Range of networking schemes, conferences etc. for researchers across Europe. Delivered by AHRC, BBSRC, EPSRC, ESRC, MRC, NERC, PPARC	£680 k
EuroHORCs Money Follows Researcher scheme	Allows Research Council grant holders in the UK who are moving to an institution in another European country to apply to take the remainder of their grant with them.	Variable
Agreements with international partner agencies	RCs have co-operation agreements with a range of agencies, largely in the far East to sponsor N+N meetings to encourage information exchange between researchers and the planning of future collaborations.	Variable (about £100k)

Scheme/Programme	Description/objective	Approx annual funding
BBSRC International Scientific Interchange Scheme	To allow BBSRC-grant holders and researchers at BBSRC-sponsored institutes to initiate and develop international activity through visits, workshops and bringing world-leading researchers to the UK. This scheme has global coverage.	£260 k
BBSRC Partnering Awards	To allow BBSRC-grant holders and researchers at BBSRC-sponsored institutes to initiate and develop long-term collaborative activity over 4 years covering exchanges workshops and visits with Japan, China, and India.	£300 k
EPSRC INTERACT	To initiate and develop collaborations through workshops, visits etc. in China, India or Japan.	£312 k
EPSRC Visiting Fellows and Visiting Researchers	To bring expertise into the UK for the purpose of research collaboration and sharing of knowledge. Delivered by EPSRC with a global coverage.	£ 750 k
EPSRC Overseas Travel Grants	To permit travel by UK researchers to overseas research institutes for gaining insight into current research programmes. Delivered by EPSRC with a global coverage.	£472 k
Access to three UK major facilities	STFC's facilities are available to international users subject to successful peer review. The facilities also offer EC Transnational Access funded opportunities, also subject to successful peer review.	£1.5 m (variable)
PPARC Research fellowships	All awards are open to international applicants who wish to take up their fellowships at UK institutions.	£ 2 m
EU FP6 Design Studies Programmes	Councils such as PPARC provided matching funding to UK groups to enable them to benefit from FP 6 awards to European consortia to enable to participate in design studies for future research facilities such as the linear collider, extremely large optical infrared telescope, and the square kilometre array for radio astronomy.	£ 3 m

Source: GSIF, *Strategy for international engagement in research and development*, p 47-48

Problems with funding

Double Jeopardy

41. One of the problems associated with funding international work is double jeopardy, where a collaborative proposal has to be peer reviewed or assessed by funding bodies in the UK and in other countries. The probability of failure multiplies with the number of approvals required and the fact that agency and country timings for calls can be different. Professor Ian Diamond, Chair of RCUK Executive Group and Chief Executive of ESRC, told us that:

If you imagine a researcher at the University of Oxford...wanted to work with someone at the University of Mannheim, until two years ago, they would have had to apply to ESRC from Oxford, to the DFG [Deutsche Forschungsgemeinschaft] from Mannheim, and waited for two separate peer review processes to work. Had they a colleague also, say from Belgium, they would have had three separate review

processes and suddenly you are waiting for the metaphorical equivalent of three crowns on a one-armed bandit in order to get the research project to go.⁷⁶

Professor Sir Keith O’Nions told us that the Research Councils were working hard to develop Memoranda of Understanding with other countries to overcome the problem.⁷⁷ ESRC, for example, has fourteen agreements with different countries to remove double jeopardy and is working to remove it completely.⁷⁸ These schemes are often operated under a 70:30 rule, where only one country’s review process is applied provided that no more than 30% of the funding goes to the other country. The University of Sheffield says that “such schemes should be encouraged for a broader range of countries”.⁷⁹ RCUK acknowledges that the Councils have taken a “piecemeal approach to a difficult problem”, although the Research Councils “remain committed to tackling this [double jeopardy] through building agreements with overseas funders to establish a single application, single peer review and single decision making process.”⁸⁰

42. Several submissions raised the possibility of the Research Councils launching joint calls with their international partners or at least synchronising the timing of calls to reduce difficulties. The FCO encouraged the Research Councils to “look more closely” at this option, whilst the Royal Society emphasised that other countries were already taking this approach.⁸¹ Using the example of the collaboration between the Germany Federal Ministry of Education and Research (BMBF) with India, the Royal Society told us that “Many European RCs have launched strategic, targeted joint schemes or built joint laboratories in specific areas to push forward joint research in topics where partner countries are perceived to have advantages and/or cutting edge capabilities”.⁸² Some of the Research Councils are already exploring this avenue. The EPSRC, for example, has launched joint funding opportunities with the National Science Foundation in the US.⁸³ Other Councils are more cautious. NERC, for example, is concerned that joint funding calls could result in significantly more support flowing out more than in, disadvantaging UK researchers.⁸⁴

43. We welcome agreements made to reduce double jeopardy but encourage further work in this area, including increasing the number of joint calls with other institutions.

Use of responsive mode application method

44. During this inquiry, we have heard criticism of the use of responsive mode applications for relatively small amounts of money for travel grants or workshops. The UK Computing Research Committee (UKCRC) told us that funds for travel grants, workshops, and visiting researchers have to be applied for in a form identical to that for other larger responsive

76 Q 3

77 Q 240

78 Q 2

79 Ev 58

80 Ev 93

81 Ev 54

82 Ev 60

83 Ev 120

84 Ev 136

mode grants.⁸⁵ It said that it would prefer another application method with a quicker turn-around time that did not suffer from delays. The University of Sheffield, Royal Academy of Engineering and Royal Society of Edinburgh reiterated these concerns, concluding that the responsive mode application method for funding for international networking workshops and visiting researchers was “overly cumbersome”.⁸⁶

45. Given the variety of approaches taken by the Research Councils, these criticisms do not apply equally to all of the Councils. STFC (previously PPARC) funds rolling grants that enable researchers to use some of the funding they receive to travel abroad and form partnerships without having to submit a separate application for funding travel.⁸⁷ **STFC’s use of rolling grants to fund travel without the need for separate applications should be considered by the other Councils as an example of best practice.**

Follow-on funding & strategic funding

46. We have also received evidence indicating concern at a lack of follow-on funding for international collaboration, for example when stimulated by a Research Council networking event or Research Council supported visit. The UKCRC states that although EPSRC funds groups of researchers to visit overseas institutions, following this up with collaborative projects is difficult because grants are not sufficient to support larger-scale projects.⁸⁸ A similar view was expressed by Rothamsted Research who said that “Continuity in funding programmes and links between the various mechanisms available are poorly defined.”⁸⁹

47. Follow-on funding is closely linked to strategic funding, which is at the heart of the issues involved in the Research Councils’ support for international activities: whether Research Councils should fund proposals because they involve collaborations with countries that they have identified as strategically important or whether they should only fund the best science. Professor Palmer from the University of Warwick gave us an example:

The University of Warwick was in discussion with KAIST [Korea Advanced Institute of Science and Technology] – KAIST is one of the senior research laboratories in South Korea. It was a collaboration that was being initiated in the area of semi-conductors [...] The proposal was that we should forge this relationship and the initial project was a £4 million project. At that time, EPSRC had a memorandum of understanding with South Korea to promote collaboration between EPSRC and its activities and KAIST in South Korea. Immediately, almost at a stroke, the South Koreans produced their £2 million. We went through 12 months of negotiation with EPSRC in competition with responsive mode grant applications rewriting proposals and, in the end, it was rejected. [...] I went back to South Korea and to KAIST the

85 Ev 47

86 Ev 58, 68, 162

87 Ev 145

88 Ev 47

89 Ev 57

institute there about three years ago and they still remembered it and they still remembered the frustrations of trying to collaborate with the UK...⁹⁰

In this case, the best science principle won out and the proposal was deemed to be unsuitable by peer review. In the future however, what if the RCUK China office is involved in negotiations regarding a proposal for collaboration with a Chinese institution that has the potential to be a world-leading player in five years time? In the face of competition from France and Germany, should the Research Councils fund this project in order to ensure a relationship in the future? This question of strategic funding is inevitably linked to follow-on funding. If the researchers met at a Research Council networking event or on a visit, do the Research Councils have any obligation to continue funding the collaboration? Where does follow-on funding start and end?

48. Professor Keith Mason told us that “If there is one area in which we need to work in the future it is to get some clarity as to why we are engaged in international collaborations. There is clearly a scientific reason [...] but there also increasingly might be strategic or economic reasons”.⁹¹ The Research Councils need to clarify what their purpose is in funding international activities and how their responsibilities relate to the work of other organisations such as DIUS, FCO and the academies. We have heard disappointment from researchers who have not been able to find follow-up funding for collaborations stimulated by Research Council activities. Researchers should be made aware of the potential limitations of Research Council funding. As mentioned by Professor Palmer, it is damaging to the UK’s research reputation if the UK is perceived to promise to develop a relationship and then fails to deliver appropriate funding to support that promise.

49. The RCUK should clarify the reasons why the Research Councils are engaged in international collaborations. It should outline when and why the Research Councils should provide strategic or follow-on funding and how such funding relates to their aim of funding the best science.

A dedicated funding stream?

50. The question has been raised as to whether the Research Councils should have a dedicated budget for funding international activities. The Royal Society told us that “If it is an agreed aim of UK foreign policy to establish ourselves as scientific partners of choice of priority countries around the world, then the RCs should be prepared to back this up with a dedicated budget.”⁹² The University of Leeds agreed that a dedicated funding stream would be useful for setting up international research links and Professor Palmer from the University of Warwick told us that “without [...] specific funding streams, international collaboration is and has been very difficult.”⁹³

51. RCUK argues that a dedicated budget for international collaboration would provide an artificial constraint to the amount of collaborative activity and could consequentially be

90 Q 147

91 Q 18

92 Ev 60

93 Ev 78, Q 147

counter-productive. It also states that not providing a dedicated funding stream for international work means that proposals with an international element compete directly with the best national research, ensuring that only high quality proposals are funded.⁹⁴ Professor Diamond reiterated this, saying that “Our policy has always been not to say that we will have an international pot but simply to say that we will remove barriers to international collaboration at any time, and then use scientific excellence as the criteria.”⁹⁵

52. Professor Sir Keith O’Nions told us that the majority of funding for international activity was embedded. He did insist, however, that the Research Councils “need to plan for some financial flexibility; because in numerous cases it will be necessary to earmark a particular increment of money either to start a new relationship with a country where we do not have strong relationships, or jointly to fund a particular project.”⁹⁶ Some of the Research Councils already take this approach. Dr Randal Richards told us that EPSRC has created a dedicated budget to catalyse international collaboration because some countries will not support responsive mode applications and require dedicated budgets.⁹⁷ As seen in Table 2, BBSRC also has specific funds for interchange schemes and partnering awards.

53. A dedicated fund for international activities would have benefits. It could be used for strategic funding purposes or for follow-up funding, overcoming the problems outlined in paragraph 47. The application procedures could be streamlined and funding would not necessarily need to be in the form of responsive mode grants (paragraph 44). It would also enable the Research Councils to track how much collaborative funding was spent with different countries and could give their international work a higher profile. This would help the FCO, which says that partner countries are not necessarily aware of the extent of their existing collaborations with the UK and, because UK funding is fragmented, the Research Councils are often unable to provide information regarding the amounts spent on funding collaborations with individual countries. This lack of information on both sides has implications for ‘selling’ the UK as a collaborative partner for science and could be overcome if the FCO were able to use information relating to a central fund.⁹⁸ A dedicated fund for international work would not be diverting money away from basic research but rather would be directing money to basic research through another mechanism. As Professor Lorna Casselton from the Royal Society pointed out, “the money is still funding UK researchers but it is ensuring that they can then make contact with overseas groups who will equally have dedicated funds to do that collaborative research.”⁹⁹

54. There are two main arguments against creating a fund for international activities. First, that it would differentiate international work from general research, whereas international work should be embedded in research. However, we do not envisage that a dedicated fund for international activities would replace the general responsive mode funding for research, splitting grants into those that are UK-based or those that involve international collaborations. Rather we believe that a dedicated fund could be used to provide a

94 Ev 91

95 Q 42

96 Q 238

97 Q 42

98 Ev 54

99 Q 187

centralised, fast way of funding travel grants, visits, fellowships and networks. Secondly, it could be argued that assigning money to international activities might mean jeopardising quality of research. Professor Colin Blakemore told us that “committing dedicated budgets to any particular scheme can sometimes be a hostage to fortune if the budget is not met with appropriate opportunities of high quality.”¹⁰⁰ In the current internationally competitive environment, we believe that this is a risk that the Research Councils should be prepared to take.

55. The majority of funding for international activities is embedded within Research Council budgets. We recommend that the Research Councils increase the flexibility of funding within their general budgets for international activities and simplify the process for cross-Council funding and long-term funding for international work. We believe that the benefits of a dedicated funding stream for international activities such as travel grants and visiting fellowships outweigh the potential drawbacks. We recommend that the Research Councils establish a small central fund for travel grants and visiting fellowships to be administered by RCUK using simple application methods.

Impact of strategy on mobility and research careers

56. International mobility of researchers helps to share expertise and cross-fertilise ideas, and enables UK researchers to benefit from international training and world-leading facilities. Evidence Ltd explains that “The UK can acquire knowledge of what China and Iran are doing, albeit belatedly, by reading what they publish. It can only find out how and why if it actively collaborates and, particularly, if UK researchers travel to and work in China and Iran.”¹⁰¹ Professor Palmer from the University of Warwick told us that visiting or working in other countries means that “academics come back with that international dimension, with that frontier exciting research and build that into their postgraduate programmes and their undergraduate programmes”.¹⁰² The desirability of experience abroad obviously varies from discipline to discipline and institution to institution. We believe, however, that the UK should ensure that there are no obstacles to the free-flowing movement of researchers into and out of the UK.

57. There are two issues that have surfaced during our inquiry. First, why the level of outward mobility (UK researchers going abroad) is relatively low, and secondly, whether the UK is sufficiently able to retain long-term talented students and researchers who move to the UK initially for a short period of time. In 2004, concerns about the low level of outward international student mobility from the UK compared with other European countries prompted the Higher Education Funding Council for England (HEFCE) and other funding bodies to commission a report, *International Student Mobility*.¹⁰³ This report analysed the statistics for scheme-led mobility programmes, the arrangements at UK higher education institutions for both scheme-led and other international mobility programmes, and attitudes to mobility among staff and students. It found that reasons for

100 Q 44

101 Ev 42

102 Q 114

103 HEFCE et al., *International student mobility*, July 2004

low levels of outward mobility included limited language skills. Most non-mobile final-year students gave a general lack of foreign language knowledge as a key factor in their decision not to study abroad.¹⁰⁴

58. The low level of outward international student mobility combined with a high number of inward bound students means that the UK is a net attractor of researchers.¹⁰⁵ According to the OSI, approximately 40% of doctoral students in the UK are from overseas.¹⁰⁶ There is concern, however, that these students do not remain the UK. NOCS says that the UK “struggles to compete e.g. with Germany, whose more generous pension and other benefit arrangements tend to lock researchers into their system.”¹⁰⁷ There is also evidence that postdoctoral researchers only stay in the UK for the duration of their research contracts and tend to return to their home countries to pursue research at a higher level. The Higher Education Policy Institution report, *Migration of Academic Staff to and from the UK*, states that “researchers from European countries are beginning to treat the UK as UK researchers regard the USA, coming here to begin their careers and establish their reputations, and then returning to their home countries to continue their careers.”¹⁰⁸

59. The *Research Councils UK Research Careers and Diversity Strategy* sets out the Councils’ aspirations for enhancing the attractiveness of the UK as a destination for the best researchers. It states that the Research Councils recognise that, in order to ensure high quality research that will benefit the economy, the UK must draw on “the best researchers from all groups in society and from overseas.”¹⁰⁹ We have been told that this sentiment will be echoed in the forthcoming RCUK international strategy, which will articulate “the need to promote the movement of researchers to and from the UK – both to contribute to the Government’s agenda of making the UK one of the best places in the world to undertake research and to help UK researchers seize opportunities for working overseas.”¹¹⁰ The Research Councils already support international mobility in a variety of ways, including postgraduate training in other countries, individual research fellowships, visiting fellowships, overseas travel grants, networks of researchers and through collaboration on grants. The *Research Councils UK Research Careers and Diversity Strategy* outlines the Research Councils’ future plans in this area, such as widening the eligibility of non-UK residents for Research Council studentships and reviewing the Dorothy Hodgkin Postgraduate Award Scheme for doctoral candidates from the developing world.¹¹¹

60. The topic of mobility has also become increasingly important at a European level. The Research Councils, through UKRO, support researchers who wish to apply for Framework Programme 7 schemes such as the Marie Curie fellowships (paragraph 106). The Research Councils have also been involved in the development of the doctoral cycle of the Bologna

104 HEFCE et al., *International student mobility*, July 2004, p 39

105 HEPI, *Migration of Academic Staff to and from the UK*, October 2005, p 2

106 Ev 153

107 Ev 77

108 HEPI, *Migration of Academic Staff to and from the UK*, October 2005, p 12

109 RCUK, *Research Councils UK Research Careers and Diversity Strategy*, January 2007, p 2

110 Ev 104

111 RCUK, *Research Councils UK Research Careers and Diversity Strategy*, January 2007, p 14

process, which aims to create a European higher education area by making degrees more comparable across the EU.¹¹²

61. Submissions have presented a range of views relating to Research Council support for international mobility. The UKCRC and Royal Astronomical Society are relatively positive about the current state of affairs. The UKCRC says that there appears to be no need to stimulate international mobility of researchers, whilst the Royal Astronomical Society states that current Research Council policies encourage mobility but in an unplanned and unintended way.¹¹³ Evidence Ltd. says that the situation could be worse but that the Research Councils could improve: “UK research mobility is better than some countries but is not exceptional in European terms, and the UK is therefore losing the opportunity to gain from making contacts with and learning lessons from others.”¹¹⁴ Rothamsted Research presents a wholly negative view of the Councils, saying that “There is little encouragement and active support for the mobility of research council employed scientists and engineers.”¹¹⁵ Two organisations argued that it is unclear whether Research Council activities have had any impact on mobility or not. The Royal Society told us that “It is not clear that RC international policies (or lack of them) have any particular impact on postdoctoral mobility.”¹¹⁶ The University and College Union states that “international ‘early career’ mobility occurs irrespective of the specific policies of the individual research councils.”¹¹⁷ Finally, the University of Warwick held up EPSRC as a model of best practice, saying that its work had had a substantial impact in this area and encouraging a consistent approach across the Councils.¹¹⁸

62. There are several challenges to mobility such as family commitments, the need for jobs for partners, and language barriers. It is difficult to know to what extent these challenges should be taken account of by the Research Councils. In relation to providing jobs for partners for example, witnesses such as Professor Palmer from the University of Warwick and Dr Jones from the Royal Society said that this was not the responsibility of the Research Councils.¹¹⁹ In other areas, however, we have been told that the Research Councils have a responsibility and should alter their policies accordingly. The University and College Union stated that “the current mobility support policies of the research councils [...] need to be underpinned by a stronger equality dimension as opportunities for certain groups of staff (e.g. women) and for researchers from particular parts of the world (e.g. developing countries) remain unequal.”¹²⁰

63. With regard to language training, Professor Diamond from ESRC and Professor Blakemore from MRC insisted that such training was not a principal responsibility of the

112 Ev 105

113 Ev 46, 69

114 Ev 43

115 Ev 57

116 Ev 62

117 Ev 82

118 Ev 56

119 Qq 166, 224

120 Ev 82

Research Councils.¹²¹ Dr Randal Richards from EPSRC emphasised that the *lingua franca* in the sciences was English and this was reiterated by Professor Sir Keith O’Nions.¹²² Professor Sir Keith O’Nions acknowledged, however, that an inability to speak a country’s language created difficulties in everyday life, if not within the laboratory.¹²³ There seems to be a split between the sciences and the humanities in this area. The ESRC, AHRC and HEFCE have commissioned five new language based area studies centres to enable young researchers to develop language skills.¹²⁴

64. We are concerned that the Research Councils lack sufficient information regarding international mobility to make well-informed decisions. Professor Sir Keith O’Nions told us that he was “not aware of serious gender difficulties at the early career stages, PhDs, post-doctoral, early career” but acknowledged that this might be due to his “lack of awareness”.¹²⁵ He also said that he did not have an analysis of whether the lack of mobility of UK researchers was linked to language skills.¹²⁶ We understand that the Councils are undertaking a study of the extent to which PhD students and researchers in the UK gain experience of working abroad during the course of their training and employment.¹²⁷ **We encourage the Councils to expand this study to explore the reasons underpinning the decisions of researchers to work abroad or stay in the UK and to alter their policies accordingly. It is necessary, for the health of the research base, and to comply with the new positive duty for public authorities to promote gender equality, for the Research Councils and the Government to understand the barriers that women in research face and take such steps as are necessary to ensure they are overcome.**

65. This discussion of mobility has so far focused upon the traditional idea of travelling to another country, spending time there and then returning. With the advent of the internet, researchers can increasingly become “virtually” mobile. The University and College Union defines virtual mobility as including “use of the internet, e-libraries and video conferencing, as alternatives to physical relocation”.¹²⁸ CEH predicts that in the future an increasing amount of research will be undertaken collaboratively through networks of world-leading organisations in virtual institutes and the Research Councils need to be ready to meet this challenge.¹²⁹ The Research Councils appear aware of the challenge, although it is unclear how they intend to meet it. Professor Ian Diamond, Chief Executive of ESRC, told us that “Communication is such now that people can collaborate [...] using relatively short visits of face to face and a large amount of electronic communication and that can work really very well, and so you do not need to move lock stock and barrel.”¹³⁰

121 Qq 90, 93

122 Qq 91, 241

123 Q 241

124 Ev 122

125 Q 246

126 Q 241

127 RCUK, *Research Councils UK Research Careers and Diversity Strategy*, January 2007, p 14

128 Ev 82

129 Ev 86

130 Q 99

66. We are concerned that Research Council schemes to improve mobility are not working well. This may be because they are not sufficiently visible or because they fail to address the challenges faced by researchers such as familiarity with foreign languages and family commitments. We recommend that RCUK, monitored by the Director General of Science and Innovation, consult stakeholders on how policies relating to mobility could be improved.

4 Government policy

Government initiatives

Global Science and Innovation Forum

67. The Government's *Science and Innovation Framework 2004–2014* recommended the establishment of a Global Science and Innovation Forum (GSIF).¹³¹ The purpose of the forum, according to OSI, is “to coordinate a more evidence-based approach to international engagement and ensure UK interventions in this area adapt to the evolving international economic and research environment.”¹³² GSIF's terms of reference are as follows:

- i. To monitor implementation of the overarching UK strategy for international engagement in science and innovation, to update it and develop new recommendations where necessary;
- ii. To provide advice on cross-governmental issues relating to the strategy, where there is a clear need for co-ordination in order to inform UK government policy and/or UK positions in international negotiations;
- iii. To review UK activities with focus countries in line with the strategy, and where necessary provide advice on further coordination or new activities needed;
- iv. To consider the implications of new evidence and trends relating to the UK's international science and innovation engagement, including evaluations of the various schemes to support this engagement.¹³³

68. The membership of GSIF includes: the trans-departmental, research base and innovation areas from OSI DTI (now DIUS), UK Trade and Investment, FCO, Defra, the DFID, the British Council, the Royal Society, RCUK, the Department for Education and Skills (now DIUS), HM Treasury, the Department of Health, and the Ministry of Justice. Its secretariat has been provided by the OSI International Directorate (now DIUS). The Research Councils do not all attend for logistical reasons but RCUK states that the Councils have contributed to GSIF's work such as the development of its strategy.¹³⁴

69. In October 2006, GSIF published the *Global Science and Innovation Forum: A Strategy for International Engagement in Research and Development*.¹³⁵ The strategy focuses on research excellence, excellence in innovation, global influence and international development. It recommended further improvements in the following areas:

131 HM Treasury, DTI & DfES, *Science and Innovation Framework 2004–2014*, July 2004, p 17.

132 Ev 154

133 GSIF Terms of Reference, www.dti.gov.uk/science

134 Ev 90

135 GSIF, *Global Science and Innovation Forum: A Strategy for International Engagement in Research and Development*, October 2006

- “Ensuring UK researchers and businesses engage with the best research internationally, through simplified access to public support schemes and consolidating the UK presence in key partner countries;
- Developing strategic partnerships, through new schemes to link world class UK universities with counterparts in China and India and to attract the best researchers to the UK and managing alumni effectively in the long term;
- Improving coordination to create synergies across government and key non-governmental bodies - in bilateral relationships with priority countries, in marketing and communicating UK strengths, and in promoting scientific advice in international policy making; and
- Supporting activities to increase the innovative nature of UK business – ensuring it has the capacity to internationalise and access to the best science, engineering and technology opportunities worldwide; and increasing the research intensity of the UK by encouraging R&D investment in the UK by innovative multinational enterprises.”¹³⁶

GSIF partners are now working on implementing the strategy and recommendations. The Research Councils are responsible for implementing recommendations within the first area of improvement such as streamlining and simplifying the interface between publicly funded schemes to encourage collaboration, improving the presence of the RCUK brand, and establishing overseas offices.¹³⁷

70. GSIF has been welcomed by organisations such as the Royal Society and Royal Academy of Engineering. The Royal Society told us that GSIF was a “huge improvement” on the Chief Scientific Adviser’s International Committee that preceded it, adding that GSIF “has shown itself to be a group which can forge real consensus between these stakeholders and has the ability to bring about co-ordinated action.”¹³⁸ The Royal Academy of Engineering welcomed the principle of GSIF but regretted that the Academy had not been given an opportunity to contribute to the GSIF strategy.¹³⁹

71. Although witnesses tended to agree that GSIF had made a good start, most provided examples of how it needed to improve in the future. Dr Randal Richards, Interim Chief Executive of the EPSRC, told us that “GSIF is a good start at trying to get interaction with what is a complex area [...] It needs to focus on a few areas”.¹⁴⁰ Professor Keith Mason, Chief Executive of STFC, agreed, saying that GSIF needed to focus on “how to deal with multinational collaborations, how to influence multilateral collaborations to do what the UK wants them to do, and how to interact in that way.”¹⁴¹ Dr Bernie Jones from the Royal Society told us that GSIF “has done reasonably well so far, but it could still do better”.¹⁴²

136 Ev 155

137 Ev 156

138 Ev 62

139 Ev 69

140 Q 24

141 Q 23

142 Q 182

72. One of the areas that submissions focused upon was the need for further co-ordination of policies. Universities UK, for example, welcomed GSIF but noted that “better cross government coordination of policies is still needed”.¹⁴³ The Royal Academy of Engineering reiterated this, saying that “although the Academy is aware of the existence of mechanisms to promote co-ordination and collaboration between the Research Councils and the Government Departments involved in international scientific activities, current performance would suggest that these are not yet working effectively.”¹⁴⁴ Professor Diamond, Chief Executive of ESRC acknowledged that “the critical thing is that we simply have to have ‘joined-upness’ across those government departments which do have an interest in this area.”¹⁴⁵ We believe that the GSIF partners should not be complacent and should use implementation of the strategy as a springboard for continued work on co-ordination.

73. We have heard comments that GSIF is not visible beyond Whitehall. The University of Warwick told us that “these collaborations are at a high level and are either not visible at university level or their benefits do not seem to filter down.”¹⁴⁶ This sentiment was reiterated by UKCRC and NOCS.¹⁴⁷ Professor Sir Keith O’Nions told us “I do not think that its [GSIF’s] profile has been strong externally” but noted that “If GSIF is going to have an ongoing role, then the way in which its profile would be increased would be by having, following Funder’s Forum, an open meeting once a year with stakeholders, putting minutes on the website and engaging more in that way.”¹⁴⁸

74. We welcome the Global Science and Innovation Forum (GSIF) but emphasise that it needs to increase its visibility, publicise itself and prove its worth. We recommend that GSIF’s performance be monitored by the Government Chief Scientific Adviser’s Office in DIUS.

Foreign Office activities

75. In 2000, the FCO established a Science and Innovation Network (SIN) as part of its science strategy. The network now has over 100 officers in 42 missions in 28 countries across the world.¹⁴⁹ The network is co-ordinated by the Science and Innovation Group (SIG) in London. SIN and the Research Councils work together organising visits to host countries, providing access to a country’s science base, providing access to the UK science base, exchanging intelligence on science priorities, responding to fact-finding missions and developing specific projects. The FCO spends approximately £10.6 million a year on SIN.

76. SIN has worked with the Research Councils to encourage positive collaborations with other countries on various projects such as:

143 Ev 152

144 Ev 69

145 Q 28

146 Ev 56

147 Ev 46, 73

148 Q 254

149 Ev 51

- The Earth Simulator Supercomputer in Japan—NERC and SIN worked to enable three British researchers to be based in Japan for three years;
- The Maths (Representation Theory) Initiative – EPSRC and SIN are working to develop a collaborative initiative and Memorandum of Understanding with France;
- Workshops in China on foodborne pathogens (BBSRC), climate change (NERC), cancer research (MRC), spintronics (EPSRC), astronomy (STFC), synchrotron radiation (STFC), e-Science (EPSRC) and polar research (NERC).¹⁵⁰

77. The FCO highlighted two main problems in its relationship with the Research Councils: collaboration and communication. The Research Councils are key stakeholders in SIN and the FCO says that understanding their priorities, particularly in relation to individual countries, is crucial to an effective collaborative relationship. It states that “Collaboration is good but there is scope for greater understanding...SIN is keen to work more closely with RCs.”¹⁵¹ The FCO also told us that “Communication has generally been good and is getting better”.¹⁵² It says that it would like to work more closely with the Research Councils, in particular the ESRC.¹⁵³

78. The Research Councils generally provided positive accounts of their interaction with the FCO, often listing events arranged by SIN.¹⁵⁴ CCLRC told us that FCO staff “provide an excellent level of support”.¹⁵⁵ PPARC said that it “found the Foreign and Commonwealth Office’s Science and Innovation Network foreign attachés to be particularly important when liaising with countries in the Far-East such as Japan and China.”¹⁵⁶ RCUK noted that the SIN teams in China, Washington and India had been closely involved in the plans to establish offices in these countries.¹⁵⁷ The Research Councils have, however, also noted areas for improvement, such as earlier engagement by the FCO on country specific initiatives and better planning in term of delivery.¹⁵⁸ The AHRC told us that “an enduring problem in establishing closer links with the FCO and utilising its Science and Innovation Network more effectively is the lack of coverage of arts and humanities issues and researchers by science attachés.”¹⁵⁹

79. The FCO and Research Councils have both taken steps to improve the relationship. The FCO has appointed a Research Council specific stakeholder manager and FCO representatives have attended the Research Council International Network. RCUK states

150 Ev 52

151 Ev 51

152 Ev 53

153 As above.

154 Ev 113, 124, 140

155 Ev 116

156 Ev 147

157 Ev 103

158 As above.

159 Ev 110

that it is working on putting in place “more robust” means for gathering and verifying information on international activities for the FCO.¹⁶⁰

80. We welcome the FCO’s Science and Innovation Network. We recommend that the Research Councils and FCO continue to work to improve co-ordination. The FCO should play a stronger role in the delivery of the Research Councils’ international policies providing in-country assistance and advice when necessary.

DFID activities

81. DFID has developed partnerships with the Research Councils in order to deliver the internationally agreed Millennium Development Goals and to meet the policy initiatives outlined in the 2006 White Paper *Making Governance Work for the Poor*.¹⁶¹ DFID states that the partnerships that are outlined in Box 3 will bring the best of UK academic excellence to its work and will increase collaboration between researchers in the developed and developing worlds.

Box 3: DFID’s collaborative programmes with the Research Councils

DFID-ESRC Scheme for Research on International Poverty

To stimulate and support collaborations between UK and overseas researchers on substantive research topics on poverty alleviation.
The scheme has a budget of £13 million over four years (£7 million from DFID and £6 million from ESRC).

DFID-BBSRC Programme on Sustainable Agriculture for International Development

Directed at research of benefit to sub-Saharan Africa and South Asia but other developing countries can participate.
It is a £6 million programme with £4 million from DFID and £2 million from BBSRC

DFID-MRC concordat

To co-ordinate policies for research into the health of developing societies. Total MRC/DFID portfolio amounts to approximately £30 million per annum (£4 million contributed by DFID).

DFID-NERC Programme on Eco-Systems Services

It will address the increasing pressures on natural resources and global climate from rapid economic and population growth in the developing world.
The budget is £30 million.

Source: Ev 80

82. Given our previous concerns regarding DFID’s scientific and technological capacity, we welcome its partnerships with the Research Councils.¹⁶² DFID has told us that the schemes have had a high volume of good quality applications and collaboration between the UK academic community and overseas counterparts is growing. It also states that working with the Research Councils has enabled it to access technical expertise and that, as a consequence of the schemes, the Research Councils are better able to represent the UK in the international development field.¹⁶³ We note, however, the Royal Society’s warning that

160 Ev 103

161 Ev 79

162 Science and Technology Committee, Thirteenth Report of Session 2003-04, *The use of science in UK international development policy*, HC 133-I

163 Ev 79

“it is too early to know the results and impacts of these new schemes and careful monitoring is required.”¹⁶⁴

83. We welcome DFID’s collaborative programmes with the Research Councils. DFID and the Councils should confirm how they intend to measure the success of these programmes. We recommend that RCUK monitor the schemes and if appropriate, encourage further collaboration in the area of international development.

OSI activities

84. In 2006, the OSI International Directorate undertook various activities to promote international science and technology as outlined in Table 3. The OSI International Directorate spent £5.4 million in 2006 on international activities, not including its contributions to jointly funded activities such as the UK-India Education and Research Initiative.

Table 3: OSI Funding for International Activities (2006)

Scheme/Programme	Description/Objective	Annual Funding
Partners in Science (Years of Science)	To build bilateral links and agreements between UK and partner scientific funding agencies and research institutes in China and Brazil. To encourage collaborative links.	£325 k
Focal points	Selected priority research areas for collaboration with South Korea and China (the latter building on Partners in Science initiative)	£125 k
Networking schemes	Facilitate collaboration between UK and partner country researchers. Networking schemes currently operate with China, India, Brazil, South Africa, and South Korea. They are jointly funded by the UK and the partner country.	£470 k
Joint Commissions	Ministerial bilateral meetings to raise the profile of science and innovation collaboration and provide a platform for launching/endorsing new bilateral initiatives. Joint Commissions currently operate with India, South Korea, China, Japan and Russia.	£24 k
University Links	To build science and innovation bridges with world-class universities and high-tech businesses in the US to increase industrial competitiveness and knowledge transfer. £6 million over two years announced in November 2005.	£ 3 m
EU Framework Programmes	National Contact Point (NCP) support for UK organisations wanting to access the mobility aspect of EU Framework Programme.	£ 50 k
FP6UK Service	Provides support (via a website, expert advice on bid preparation, seminars, e-mail alerts etc.) to UK organisations bidding into many other elements of the EU Framework Programme. Includes Central Information point.	£ 1.45 m

Source: GSIF, *Strategy for international engagement in research and development*, p 51

85. As well as the activities undertaken by the OSI International Directorate, the OSI has also provided funding to the Research Councils to support their activities including international activities. OSI funding has additionally funded the Royal Society, Royal Academy of Engineering and Royal Academy work in this area.

86. As mentioned in paragraph 7, the recent machinery of Government changes have resulted in the abolition of the OSI as a distinct entity and the transfer of its responsibilities to DIUS. In the following sections we focus upon OSI's work in the past and make recommendations for DIUS to take forward.

Developing bilateral relationships

87. OSI's activities focused upon maintaining established relationships, for example with Japan and the USA, and building new relationships with countries such as China, India, South Africa and Brazil. It used a variety of approaches including joint commissions, high-level visits, networking schemes and the Partners in Science programme. The OSI told us that "these activities involve OSI working across government and more widely, including with the Research Councils, to ensure that the full range of science, technology and innovation is covered and that all appropriate stakeholders are engaged."¹⁶⁵

88. There is evidence that the UK is not developing bilateral collaborative links as quickly as other countries. Evidence Ltd says that the UK has a well developed network with other countries but it is "not expanding its collaborative links as quickly as some competitors." This situation is especially noticeable in relation to China and India.¹⁶⁶ Germany, for example, is increasing its rates of collaboration with both India and China more quickly than the UK (see Table 4). This may be because China and India have focused expansion upon the physical and technological sciences, rather than the biological sciences where the UK has particular strengths. It may also be linked, however, to the fact that Germany already has a research office base in China.

Table 4: Recent increase in collaboration (ratio 96–00/01–05) measured by co-authorship of research publications

	India	China
UK	1.65	1.94
Germany	1.81	1.96

Source: Ev 42

89. The Royal Society, which runs the UK side of OSI's networking schemes, says that the UK's position is slipping because of a lack of money. The support for networking schemes in China and India is in the region of £100,000 to £150,000 per year.¹⁶⁷ The Royal Society states that this level of funding is often perceived as "derisory" by partner countries who expect the UK to have a larger budget for such activities.¹⁶⁸ It says that it is "difficult to

165 Ev 155

166 Ev 41

167 Ev 42

168 As above.

convince potential international partners of the UK's commitment to collaborative projects with only these comparatively small amounts of money.¹⁶⁹ Furthermore, once relationships have been established through the network, there is often no dedicated money for follow-up (paragraph 46). The Royal Society states that "there is no strategic follow-on funding programme to the bottom-up networking programme and the themed networking events" run by the OSI and this is an area where the Research Councils could engage.¹⁷⁰ This seems unlikely given RCUK's comment that "Whilst targeted workshops and exchanges can encourage contacts and exchanges of information, it is important that all parties are realistic from the outset about the level of research funding Councils may subsequently be able to make available and the chances of securing this in competition with other proposals."¹⁷¹ It thus seems to be once again a question of funding the best science or providing strategic funding (paragraph 47).

90. Professor Sir Keith O'Nions told us that "I do not think that being effective, or more effective internationally than even we are at the moment, is a matter of money. I think that we are sufficiently well resourced to do that."¹⁷² He emphasised that instead it was a matter of strategy, coherence and flexibility in planning. There appear to be avenues that DIUS could explore to improve the effectiveness of its work on developing bilateral relationships without committing significant additional funds. For example, several submissions have highlighted the lack of information and feedback in relation to visits of UK Minister abroad or foreign Ministers to the UK. CCLRC told us that "There is no clearly identified central diary of visits abroad by senior staff or Ministers nor of incoming visitors. This reduces the capacity to capitalise on such visits by planning complementary activities or suggesting people or locations to visit."¹⁷³ CEH noted that, although the UK research community might be mobilized before a Minister made a science-related visit overseas, there was little follow-up or feedback.¹⁷⁴

Years of Science

91. The OSI has funded two Partners in Science or Years of Science programmes. The first was the 2005 UK/China Partners in Science Initiative. The second was the 2007 British Year of Science in Brazil. In the most recent instance, the UK's Chief Scientific Adviser, Professor Sir David King, and the Brazilian Science and Technology Minister Sergio Rezende signed a Joint Action Plan on Science, Technology and Innovation. The aim of the agreement was to encourage greater collaboration between the two countries in areas of common interest such as climate change, agriculture and health. During an oral evidence session with the Trade and Industry Committee relating to trade with Brazil, Professor King explained that Brazil was chosen for this scheme because "the whole climate change/energy/biodiversity agenda was very strongly in our minds".¹⁷⁵ He said that the aim

169 Ev 42

170 As above.

171 Ev 92

172 Q 258

173 Ev 114

174 Ev 87, Q 133

175 Trade and Industry Committee, Seventh Report of Session 2006-07, *Trade with Brazil and Mercosur*, HC 208-II, Q 249

of the Year of Science was to “promote awareness in Brazil of UK excellence in science and innovation and to strengthen collaboration between the two countries.”¹⁷⁶ Professor Sir David King said that he felt that the previous initiative with China had been a “highly successful enterprise.”¹⁷⁷

92. We have been told that the schemes have brought some benefits. Professor Blakemore, Chief Executive of MRC, told us that during the Year of Science in China the MRC signed four new Memoranda of Understanding with Chinese agencies. He said that “interaction is extremely close and to a large extent that is attributable I think to the links that we [...] built up during the year.”¹⁷⁸ The Year of Science in Brazil has resulted in a proposal for the UK and Brazilian Research Councils to run an entirely joint peer review process across all areas of research in order to avoid the problem of double jeopardy.¹⁷⁹

93. The Year of Science schemes are not heavily advertised in the UK. The Royal Academy of Engineering argues that the Years of Science have tended to have “low visibility in the UK”.¹⁸⁰ It notes that the focus has been on the partner country and consequentially, UK researchers with existing collaborations in the relevant countries have not necessarily been involved in the schemes and existing networks have not been fully exploited. Furthermore, the Academy claims that greater engagement within the UK could also help to ensure that the Year of Science activities accurately represent the range of activities available in the UK.

94. There is also a danger that the schemes will not be adequately followed up and, as the spotlight shifts onto another country, collaborative links will wither. Dr Lloyd Anderson from the British Council told us that “the problem with these big campaigns is that they are not necessarily sustainable [...] whilst the Year of Science has been successful in China I am concerned about whether there is a long term commitment to keeping up those engagements.”¹⁸¹ Dr Bernie Jones from the Royal Society agreed that the schemes lacked follow up.¹⁸² Professor Sir Keith O’Nions acknowledged that “it is quite easy to wind up the system and increase the profile; the challenge is always in sustaining it, because sustaining it usually requires investment”.¹⁸³ He stated that whilst the initial stimulus could come from Government, the continuity should come from the Academies and the Research Councils.¹⁸⁴

Conclusions

95. We welcome the work that has been done by OSI in developing partnerships with other countries. We are concerned, however, that the UK’s position as a desirable international partner is slipping and that the Government is working within an

176 Trade and Industry Committee, Seventh Report of Session 2006-07, *Trade with Brazil and Mercosur*, HC 208-II, Q 249

177 As above.

178 Q 15

179 Q 27

180 Ev 68

181 Q 192

182 Q 195

183 Q 256

184 Q 257

increasingly competitive international environment. DIUS needs to ensure that relationships with other countries are exploited at all levels from Government to Government to researcher to researcher.

96. There is a failure properly to follow up schemes, initiatives and visits. We believe that ensuring appropriate follow-up to Government initiatives will require more funding as well as an improved strategy. We recommend that DIUS invest more money in developing partnerships and work with the Research Councils and Academies to ensure consistent follow up to its work, particularly the Years of Science initiative.

5 Involvement of other organisations

97. There are many different routes through which researchers can apply for funding for international collaborations, and in addition to Research Council or government schemes, there are programmes run by organisations such as the British Council, the Royal Society, the Wellcome Trust, the Leverhulme Trust, and the Royal Academy of Engineering. The importance of the work undertaken by the British Council and the Royal Society, in particular, in funding international research is recognised by their participation in GSIF.

British Council

98. The British Council is a Non-Departmental Public Body sponsored by the FCO. It runs science programmes in 70 countries around the world, with an annual expenditure of £8 million.¹⁸⁵ It supports a number of awards schemes as outlined in Table 5.

Table 5: British Council Activities (2006)

Scheme/Programme	Description/Objective	Approx annual Funding
International Networking for Young Scientists	Bilateral and multilateral N+N seminars and workshops for the exchange of information, knowledge and ideas between early stage researchers and formation of collaborative links. Global coverage delivered by BC with matched funding from national partners.	£ 250 k
Partnership Programme	Bilateral, co-financed programmes promoting links and contacts between higher education research institutions and laboratories in the UK and Austria, France, Germany, Italy, Netherlands, Portugal, Poland, Turkey, Cuba, Greece, India, and Slovenia. Delivered by BC with matched funding from national governments.	£517 k
Researcher Exchange Programme	Individual awards providing money for travel and subsistence to enable early stage researchers to spend 2 week – 3 month periods in foreign laboratories (inward to and outward from UK) in order to make international connections. Global coverage.	£500 k
Network UK	Personal assistance and advice provided to EU/Global researchers planning to move to the UK for a period of work. It comprises a mobility portal and helpdesk at the national level supported by 12 mobility centres located around the UK, aimed at removing the barriers to mobility. Co-financed by EC (under FP6) and OSI, and delivered by BC.	£ 91 k

Source: GSIF, *Strategy for international engagement in research and development*, p 56-57

99. The British Council also runs resources such as the Support for International Science, Technology and Engineering Research (SISTER) programme, which is a funding route map for UK researchers, postgraduates and international students seeking funding for international collaboration in science and technology. It was created for British Council Science, the OSI, the Royal Society, and UK Trade and Investment.

100. The British Council and the Research Councils focus on different outcomes. Dr Lloyd Anderson from the British Council explained to us that “the Research Councils are saying what can international relations do for the UK research base, whereas I would say that philosophy behind the British Council is what can the UK research base do for international relations, it is the other way round.”¹⁸⁶ This different outlook means that direct overlap between British Council and Research Council schemes is unlikely, although it does not prevent them from working together. The British Council indicated that it would welcome more interaction with the Research Councils. It said that the Research Councils have “always been supportive of British Council initiatives, but there have been no major joint activities. This may reflect an earlier ‘*wealth creation in UK*’ stance, or the different audience segments that the Research Councils and British Council individually seek to reach.”¹⁸⁷ In relation to Network UK, the British Council states that “The Research Councils have chosen not to undertake active promotion, or to utilise the mobility portal; actions that have been left to the HE sector.”¹⁸⁸

Royal Society

101. The Royal Society supports a number of schemes to promote international collaboration and partnership, including international joint projects, short visits to and from the UK, fellowships to the UK from Asia, fellowships to the UK from the USA, and conference grants. It is also responsible for running networking schemes for the OSI (now DIUS).¹⁸⁹

Table 6: Royal Society International Activities (2006)

Scheme/programme	Description/objective	Approx annual funding
Conference grants	Provide assistance to UK scientists attending conferences in any overseas country. Global coverage.	£6.4 m
Short visits grants	Available for scientists to undertake visits (either by UK scientists overseas, or by overseas scientists to the UK) for periods of between one week and three months; these are intended to assist in initiating one-to-one collaboration and exploring opportunities. Funding is for travel and subsistence, and in some instances costs are shared with partner organisations “in-country”. Global coverage.	
Joint projects	Provide mobility grants for bi-lateral research projects between a UK research group. Funds available cover the costs of a series of visits between the two groups over a period of two to three years. Covers Europe, South America, South East Asia, China, India, and parts of Africa and Latin America.	
Incoming fellowships for postdoctoral scientists	The Society also offers incoming fellowships for postdoctoral scientists undertaking a research project with a named host in a UK research organisation. Covers India, China, and South	

186 Q 180

187 Ev 159

188 Ev 160

189 Ev 61

	East Asia for 6-12 months and US and Canada for 12 to 36 months.	
ERA COREACH ERANET on European research collaboration with China	This network is intended to create coherence and synergy in Europe's S&T relations with China. Covers Netherlands, France, Germany, Poland, Austria, Norway, Finland, Ireland, Hungary. Delivered by RS (and British Academy) on behalf.	£50 k (£250 k over 5 years)
International Science and Science Policy Organisations	Collaboration with the international scientific community through support of the International Council for Science (ICSU), Inter Academy Panel and Council (IAP/IAC), International Scientific Unions, the International Seismological Centre, European Academies Science Advisory Council (EASAC), European Science Exchange Programme (ESEP) and Academia Europaea. Global coverage delivered by RS for UK.	£ 750 k

Source: GSIF, *Strategy for international engagement in research and development*, p 55

102. The Royal Society receives its funding from three sources: Parliamentary grant in aid from OSI (now DIUS), private foundations/individuals/corporate organisations, and its endowment. Dr Bernie Jones explained to us that “the biggest chunk is the Parliamentary grant in aid, the money that we receive from OSI and then hand out to fund excellent UK scientists and international scientific collaborations.”¹⁹⁰

103. The Royal Society says that it brings “credibility and experience” to running grant schemes.¹⁹¹ We have been told by the Deafness, Cognition and Language Research Centre at University College London that small schemes such as those run by the Royal Society are “unbureaucratic and seen to work efficiently”.¹⁹² The University of Sheffield says that the work of the Royal Society and other trusts is “much more well known” than that of the Research Councils in facilitating international research.¹⁹³

Co-ordination between organisations

104. We are not convinced that there is sufficient co-ordination between the organisations working to fund international research or that a good working relationship exists between them. The Royal Society has been very critical of the Research Councils (paragraph 20), whilst RCUK's written submission does not mention the work of the Royal Society or British Council.¹⁹⁴ Co-ordination and communication is essential in order to avoid overlap between similar schemes, particularly between the Royal Society and the Research Councils. Dr Jones from the Royal Society told us that the potential for overlap was “something that we are very conscious of.”¹⁹⁵ Professor Ian Diamond, Chair of RCUK, told us that “we do not want to end up doing things in duplication”.¹⁹⁶ Both witnesses said that actions were being taken in order to improve co-ordination. Professor Diamond said that

190 Q 208

191 Ev 61

192 Ev 44

193 Ev 59

194 Ev 89

195 Q 201

196 Q 37

Dr Ian Cox, Executive Secretary of the Royal Society, had been invited to RCUK to talk about respective forward strategies and how they align.¹⁹⁷ Dr Jones said that there was informal and formal contact at a number of different levels between the organisations. He noted that in view of the increasing international initiatives by the Royal Academy of Engineering, he was intending to set up a regular meeting between the international heads of the various academies in the UK.¹⁹⁸ **We believe that relations between the Research Councils, the Royal Society, British Council and others could be improved further. We recommend that the RCUK international team take steps to improve co-ordination and communication with the Royal Society, British Council and others, seeking advice and adopting models of best practice where appropriate.**

105. As highlighted by the Royal Society, there is no formal mechanism to ensure that there is no overlap between the schemes offered by the Research Councils, Learned Societies and other bodies.¹⁹⁹ Furthermore, it is not clear which organisation should take responsibility for promoting co-ordination. We believe that DIUS, the source of funding for several of these bodies, would be best placed to encourage organisations to co-ordinate their schemes to ensure minimal overlap and duplication. Its activities would complement those of GSIF, which focuses primarily upon co-ordinating cross-Government activities. **We recommend that the Science and Innovation Group within DIUS become a hub for co-ordinating the international activities and policies of the Research Councils, Learned Societies, charities and others. We recommend that DIUS work with relevant organisations using resources such as the British Council Support for International Science, Technology and Engineering Research portal to ensure that there is minimal overlap between schemes encouraging the development of international links.**

197 Q 37

198 Q 205

199 As above.

6 Europe and research

Overview

106. The main mechanism for supporting collaborative, trans-national research in the European Union is the EU's Framework Programme. It has three aims:

- i. Strengthen the EU's science and technology base;
- ii. Improve the EU's competitiveness; and
- iii. Support EU policy development.²⁰⁰

The first Framework Programme was launched in 1984. Since then, several programmes and strategies have been developed at an EU level to support collaborative research and improve the sharing of knowledge. In 2000, the European Union created the concept of the European Research Area (ERA). This meant creating a unified area across Europe that would enable researchers to move between institutions, allow the development of European research programmes, and encourage knowledge to be shared and transferred at a European level.²⁰¹ The most recent Framework Programme, Framework Programme 7 (FP7), was launched on 22 December 2006 with a budget of €53 billion.²⁰² FP7 will cover the period 2006–2013 and is seen as a major tool for achieving the EU's 2005 Lisbon objectives and the 2002 Barcelona Council aim of increasing the European research effort to 3% of the EU's GDP by 2010.²⁰³

Box 4: European Research Activities

Framework Programme 7 (FP7)

FP7 is the main mechanism for supporting collaborative, trans-national research and technological development in the EU. The programme represents the third largest item in the EU budget and operates on an internationally collaborative basis.

The broad objectives of FP7 have been grouped into four categories:

Co-operation

Budget of approximately €32,413 million over seven years.

Supports all types of research activities carried out by research bodies in trans-national co-operation.

Thematic areas: health, food, agriculture and fisheries, biotechnology, ICT, nanosciences, nanotechnologies, materials and new production technologies, energy, environment, transport, socio-economic sciences and humanities, space and security.

Ideas

Budget of approximately €300 million a year.

Proposes a trans-European mechanism to support creative scientific research.

Involves creation of European Research Council (see below).

People

Budget of approximately €4.7 billion over seven years.

Will cover all stages of researchers' professional lives from initial training to continuing professional development

200 Ev 156

201 European Scrutiny Committee, Twentieth Report of Session 2006-07, HC 41-xx

202 Ev 156

203 Ev 50

Capacities

Budget of €4,097 million over seven years.

To enhance research and innovation capacities through Europe in six areas: research infrastructures; research for the benefit of SMEs; regions of knowledge and support for regional research-driven clusters; research potential of Convergence Regions; science in society; support for the coherent development of policy; and international co-operation.

European Research Council (ERC)

Part of the FP7 Ideas programme.

Will fund investigator-driven research across all fields of science with evaluation based on sole criterion of excellence. Funding will be granted to individual European scientists with no requirement for trans-national collaboration.

European Research Area Networks (ERA-NETs)

An FP6 funding mechanism, expanded in FP7, designed to promote cooperation and co-planning between funders of national research programmes. UK Research Councils are involved in more than 20 ERA-NETs.

European Institute of Technology (EIT)

EIT is intended to help strengthen innovation performance across the European Research Area. It will set up strategic long term partnerships between various players in knowledge transfer. Discussions about the EIT are on-going with aim of establishing it in 2008 with a budget of €2.4 billion.

European Technology Platforms (ETPs)

Provide a framework for stakeholders, led by industry, to define research and development priorities, timeframes and action plans on a number of strategically important issues where achieving Europe's future growth, competitiveness and sustainability objectives is dependent upon major research and technological advances in the medium to long term.

Joint Technology Initiatives (JTIs)

The Commission is launching JTIs under FP7. They will pool funding from the private sector, European and national research programmes towards common research goals in priority technology areas.

107. It is too early to establish how well represented the UK will be in FP7. The UK performed well in FP6, which had a budget of €19 billion. The latest data show that approximately 5,000 UK participants were supported in FP6, receiving around 14.5% of the funding available (approximately €1.74 billion).²⁰⁴ In this respect, the UK was second only to Germany. This is, however, a drop in participation from previous Framework Programmes (FP4 and FP5) where the UK took first place.²⁰⁵ An example of the UK's engagement with the Framework Programmes is the Institute of Grassland and Environmental Research. This Institute has been a partner in 15 FP5 and three FP 6 projects, all of which included private sector partners.²⁰⁶

108. Several submissions have raised concerns regarding the European Institute of Technology. RCUK identifies a number of significant uncertainties such as the governance structure, the relationship between the EIT and existing structures, the added value of the EIT and its budget.²⁰⁷ The University and College Union is anxious that the EIT project might be supported at a cost to other research activities and will be problematic in areas

204 Of the contracts signed to July 2006.

205 Technopolis Ltd, *The Impact of the EU Framework Programmes in the UK*, July 2004

206 Ev 72

207 Ev 98

such as governance, academic freedom and intellectual property rights.²⁰⁸ These concerns, particularly regarding the EIT's budget, echo the findings of the House of Lords European Union Committee and the House of Commons European Scrutiny Committee.²⁰⁹ These issues are largely beyond the scope of this inquiry but we may return to them in future.

109. Although the Framework Programmes are the main mechanism for supporting research between countries, it is worth noting that collaborations in Europe also take place outside the Framework Programmes often at a researcher-to-researcher level.²¹⁰

Government and Framework 7

110. The OSI has co-ordinated the work by Government departments on the Framework Programmes. The OSI and the lead Government department for an area, for example Defra on agriculture and fisheries, work with the Research Councils in order to work out the UK interests on the relevant EU programme. Defra notes that BBSRC and NERC worked closely with it during negotiations on FP7 and provided input to the development of Environment and Food, Agriculture and Fisheries, and Biotechnology themes.²¹¹

111. The Government funds a number of promotion and support services aimed at raising awareness of the Framework Programmes and helping organisations to participate (see Table 3). Each Member State has a network of National Contact Points (NCPs) that provide information and advice on specific areas of the programme. The OSI states that in the UK, "NCPs undertake a wide range of activities such as awareness raising, advice and assistance, and signposting organisations to other funding programmes, if FP is not suitable."²¹² RCUK told us that, under FP 6 and FP7, the Research Councils are "increasingly taking on the policy lead and this NCP role – although OSI retains a coordinating, cross-cutting role which works well."²¹³

Research Councils and Framework 7

112. The Research Councils have been involved in the Framework Programmes since their inception and were involved in more than 200 projects under FP6.²¹⁴ RCUK states that the Research Councils fulfil a number of roles in relationship to FPs including:

- a) "influencing and shaping overall policy direction and thematic priorities
- b) promoting opportunities and stimulating the participation of UK researchers and UK business

208 Ev 82

209 House of Lords European Union Sub-Committee D, Thirteenth Report of Session 2006-07 *Proposal to Establish the European Institute of Technology: Interim Report*, April 2007, HL69; House of Lords European Union Sub-Committee D, Twenty-fifth Report of Session 2006-07, *Proposal to Establish the European Institute of Technology*, June 2007, HL 130 ; House of Commons European Scrutiny Committee, Twenty-sixth Report of Session 2006-07, HC 41–xxvi, para 4.11

210 Q 74

211 Ev 49

212 Ev 156

213 Ev 91

214 Ev 157

- c) encouraging the adoption of good practice in the funding, delivery and exploitation of research
- d) supporting greater cooperation and integration between European national research funding bodies
- e) participation in research through research council institutes.²¹⁵

As mentioned above, Research Councils are often the National Contact Point (NCP). For FP7, MRC is the NCP for health academics, and UKRO is the NCP for the European Research Council and Mobility programmes.²¹⁶

113. We have heard contrasting opinions about the Research Councils' involvement with the Framework Programmes. UKCRC says that it does not believe that any further support from RCUK to stimulate UK participation is needed, or desirable.²¹⁷ Professor Shaun Quegan from the University of Sheffield states that NERC "provides good information flow as regards EU FP7 opportunities through regular e-mail communications and events."²¹⁸ Other organisations have said that the Research Councils' work in this area could be improved. The Royal Academy of Engineering says that there is "scope for greater coordination between the Research Councils and the EU Framework Programmes."²¹⁹ It states further that the Research Councils take little, if any account of European priorities.²²⁰ The University of Warwick and the University of Leeds told us that there is little dedicated travel money for preparatory work pre-award for Framework activity and the Research Councils should consider providing a small amount of funding for travel and preparation costs.²²¹ The University of Warwick commented in particular upon the AHRC, saying that it "has not offered any sort of travel or project preparation grants for FP7 nor has it run any tailored information sessions for researchers."²²²

114. Recurrent themes in the submissions were two main problems with the European programmes: bureaucracy, and funding difficulties because funding does not cover full economic costs. On the first point, the Deafness, Cognition and Language Research Centre at University College London told us that "the level and amount of bureaucracy involved in the various framework schemes, and a perception of less than transparent assessment and appraisal, have often deterred would-be UK applicants from major involvement".²²³ The Royal Society stated that EU programmes are "excessively prescriptive, restrictive and bureaucratic".²²⁴ These submissions echo our predecessor Committee's findings in 2003.²²⁵

215 Ev 95

216 Ev 96

217 Ev 46

218 Ev 44

219 Ev 67

220 As above.

221 Ev 78, 56

222 Ev 56

223 Ev 44

224 Ev 62

225 Science and Technology Committee, Sixth Report of Session 2002-03, *UK Science and Europe: Value for Money?*, HC 386-I, p 32-33

The OSI acknowledged the bureaucratic reputation of the Framework Programmes but told us that the Commission had undertaken a major exercise to improve matters and had introduced a number of innovations such as a simpler set of funding schemes, a single registration procedure and reduced reporting and audit requirements.²²⁶

115. Secondly, there is the problem of meeting the full economic costs of research from European funds. In 2002, the Government reviewed the dual support model for funding university research and concluded that without some changes, the high productivity of the UK research base would not be financially sustainable in the longer term. Following a consultation exercise in 2003, the Government announced three measures to help put university research funding on a sustainable basis: higher education institutes (HEIs) were asked to adopt the Transparent Approach to Costing (TRAC) methodology to enable them to estimate the full economic costs (FEC) of research; HEIs were asked to recover in aggregate, the full economic costs of their activities; and Research Councils were asked to increase the proportion of the full economic cost paid to HEIs for research. FEC is not, however, available from the Commission in relation to projects funded under Framework Programmes. The Royal Society and Royal Academy of Engineering told us that HEIs are reluctant to apply for FP funding because the contribution to overheads is significantly less than the full economic cost of research in the UK.²²⁷ The Royal Astronomical Society states that in many cases, universities and public sector research institutes have to find a quarter of FP7 project funding from other sources. It said that the Research Councils should help researchers to find ways of funding this shortfall.²²⁸

116. We believe that the Research Councils could improve their support for researchers applying for European funding. We are concerned that European programmes are less attractive to UK researchers because the programmes have a reputation for bureaucracy and are unlikely to cover the full economic costs of research. DIUS should work with the Research Councils to advertise the improvements in Framework Programme 7 to reduce bureaucracy and speed up processes. DIUS, Research Councils, HEFCE and universities should work together to devise a solution to cover the shortfall between Framework Programme 7 funding and the full economic costs of research.

226 Ev 157

227 Ev 61

228 Ev 71

7 Conclusion

117. This Report has highlighted the variety and number of schemes organised by the Government, Research Councils, Learned Societies and others that support international research activities. We are concerned, not by a lack of work in this area, but by the poor co-ordination between schemes and the lack of visibility of the schemes. We acknowledge that the Research Councils, encouraged by GSIF, have already taken steps to address these problems by developing an over-arching RCUK strategy, by creating a RCUK international team and by establishing more offices overseas. We hope that these steps are the beginning of a more high-profile, coherent and co-ordinated approach by the Research Councils to international work and that appropriate measurements are developed to demonstrate its impact.

Conclusions and recommendations

Measurements of success

1. We believe that it is important for the UK to be able to assess its position and measure its success with regard to international collaboration and international research relationships. We recommend that the Research Councils and the Department for Innovation, Universities and Skills work together to develop common mechanisms for the systematic collection of data on international collaborations and to develop ways of assessing their performance in this field. (Paragraph 15)

Current activities

2. We acknowledge the diversity of schemes across the Research Councils and encourage the Councils to share best practice. (Paragraph 17)

Strategy

3. We welcome the development of the international strategies and recommend that individual Councils review their strategies in the light of the new RCUK strategy. (Paragraph 24)

Co-ordination

4. We are concerned that the Research Councils' activities and policies are not sufficiently co-ordinated either internally or with one another. RCUK should drive cross-Council co-ordination and ensure that the Research Councils' activities and policies are well aligned. We recommend that RCUK review its next steps to improve the co-ordination of activities beyond the creation of its strategy and establishment of the international team. (Paragraph 28)

Visibility

5. We are concerned that the Councils' activities are not widely known about in the research community and recommend that the Councils develop ways of improving the visibility of their schemes and disseminating information to the research community. (Paragraph 32)

International offices

6. We welcome the establishment of more RCUK offices abroad. These offices should present a coherent picture of UK science and be worthwhile contact points for international collaborators. We recommend that RCUK clarify how these offices will be funded, how their performance will be monitored and how their activities will be reported. (Paragraph 38)

Funding

7. We welcome agreements made to reduce double jeopardy but encourage further work in this area, including increasing the number of joint calls with other institutions. (Paragraph 43)
8. STFC's use of rolling grants to fund travel without the need for separate applications should be considered by the other Councils as an example of best practice. (Paragraph 45)
9. The RCUK should clarify the reasons why the Research Councils are engaged in international collaborations. It should outline when and why the Research Councils should provide strategic or follow-on funding and how such funding relates to their aim of funding the best science. (Paragraph 49)
10. The majority of funding for international activities is embedded within Research Council budgets. We recommend that the Research Councils increase the flexibility of funding within their general budgets for international activities and simplify the process for cross-Council funding and long-term funding for international work. We believe that the benefits of a dedicated funding stream for international activities such as travel grants and visiting fellowships outweigh the potential drawbacks. We recommend that the Research Councils establish a small central fund for travel grants and visiting fellowships to be administered by RCUK using simple application methods. (Paragraph 55)

Impact of strategy on mobility and research careers

11. We encourage the Councils to expand the study of the extent to which PhD students and researchers in the UK work abroad to explore the reasons underpinning the decisions of researchers to work abroad or stay in the UK and to alter their policies accordingly. It is necessary, for the health of the research base, and to comply with the new positive duty for public authorities to promote gender equality, for the Research Councils and the Government to understand the barriers that women in research face and take such steps as are necessary to ensure they are overcome. (Paragraph 64)
12. We are concerned that Research Council schemes to improve mobility are not working well. This may be because they are not sufficiently visible or because they fail to address the challenges faced by researchers such as familiarity with foreign languages and family commitments. We recommend that RCUK, monitored by the Director General of Science and Innovation, consult stakeholders on how policies relating to mobility could be improved. (Paragraph 66)

Government initiatives

13. We welcome the Global Science and Innovation Forum (GSIF) but emphasise that it needs to increase its visibility, publicise itself and prove its worth. We recommend

that GSIF's performance be monitored by the Government Chief Scientific Adviser's Office in DIUS. (Paragraph 74)

14. We welcome the FCO's Science and Innovation Network. We recommend that the Research Councils and FCO continue to work to improve co-ordination. The FCO should play a stronger role in the delivery of the Research Councils' international policies providing in-country assistance and advice when necessary. (Paragraph 80)
15. We welcome DFID's collaborative programmes with the Research Councils. DFID and the Councils should confirm how they intend to measure the success of these programmes. We recommend that RCUK monitor the schemes and if appropriate, encourage further collaboration in the area of international development. (Paragraph 83)
16. We welcome the work that has been done by OSI in developing partnerships with other countries. We are concerned, however, that the UK's position as a desirable international partner is slipping and that the Government is working within an increasingly competitive international environment. DIUS needs to ensure that relationships with other countries are exploited at all levels from Government to Government to researcher to researcher. (Paragraph 95)
17. There is a failure properly to follow up schemes, initiatives and visits. We believe that ensuring appropriate follow up to Government initiatives will require more funding as well as an improved strategy. We recommend that DIUS invest more money in developing partnerships and work with the Research Councils and Academies to ensure consistent follow-up to its work, particularly the Years of Science initiative. (Paragraph 96)

Co-ordination between organisations

18. We believe that relations between the Research Councils, the Royal Society, British Council and others could be improved further. We recommend that the RCUK international team take steps to improve co-ordination and communication with the Royal Society, British Council and others, seeking advice and adopting models of best practice where appropriate. (Paragraph 104)
19. We recommend that the Science and Innovation Group within DIUS become a hub for co-ordinating the international activities and policies of the Research Councils, Learned Societies, charities and others. We recommend that DIUS work with relevant organisations using resources such as the British Council Support for International Science, Technology and Engineering Research portal to ensure that there is minimal overlap between schemes encouraging the development of international links. (Paragraph 105)

Overview

20. We believe that the Research Councils could improve their support for researchers applying for European funding. We are concerned that European programmes are less attractive to UK researchers because the programmes have a reputation for

bureaucracy and are unlikely to cover the full economic costs of research. DIUS should work with the Research Councils to advertise the improvements in Framework Programme 7 to reduce bureaucracy and speed up processes. DIUS, Research Councils, HEFCE and universities should work together to devise a solution to cover the shortfall between Framework Programme 7 funding and the full economic costs of research. (Paragraph 116)

Abbreviations used in this Report

AHRC	Arts and Humanities Research Council
ANR	Agence Nationale de la Recherche
BBSRC	Biotechnology and Biological Sciences Research Council
CCLRC	Council for the Central Laboratory of the Research Councils
CEH	Centre for Ecology and Hyrdology
CERN	The European Organisation for Nuclear Research
CLIVAR	Climate Variability and Predictability Programme
Defra	Department for Environment, Food and Rural Affairs
DFG	Deutsche Forschungsgemeinschaft
DFID	Department for International Development
DIUS	Department for Innovation, Universities and Skills
DTI	Department for Trade and Industry
EIT	European Institute of Technology
EPSRC	Engineering and Physical Sciences Research Council
ERA	European Research Area
ERA-NETs	European Research Area Networks
ERC	European Research Council
ESA	European Space Agency
ESRC	Economic and Social Research Council
ETP	European Technology Platform
EU	European Union
EUROHORCS	Heads of European Research Councils
FCO	Foreign and Commonwealth Office
FP	Framework Programme
GSIF	Global Science and Innovation Forum
HEFCE	Higher Education Funding Council for England
IGER	Institute of Grassland and Environmental Research

INR	L'institut national de la recherche agronomique
IODP	Integrated Ocean Drilling Programme
IPY	International Polar Year
ITER	International Tokamak Experimental Reactor
JTI	Joint Technology Initiatives
KAIST	Korea Advanced Institute of Science and Technology
MRC	Medical Research Council
NCP	National Contact Points
NERC	Natural Environment Research Council
NOCS	National Oceanography Centre, Southampton
OSI	Office of Science and Innovation
PPARC	Particle Physics and Astronomy Research Council
PSA	Public Service Agreement
RC	Research Council
RCUK	Research Councils UK
SIG	Science and Innovation Group
SIN	Science and Innovation Network
SISTER	Support for International Science, Technology and Engineering Research
STFC	Science and Technology Facilities Council
UKCRC	UK Computing Research Committee
UKRO	UK Research Office

Formal minutes

Wednesday 25 July 2007

Members present:

Mr Phil Willis, in the Chair

Mrs Nadine Dorries
Linda Gilroy
Dr Evan Harris
Dr Brian Iddon

Chris Mole
Graham Stringer
Dr Desmond Turner

The Committee considered this matter.

Draft Report (International Policies and Activities of the Research Councils), proposed by the Chairman, brought up and read.

Ordered, That the Chairman's draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 117 read and agreed to.

Summary read and agreed to.

Abbreviations read and agreed to.

Resolved, That the Report be the Ninth Report of the Committee to the House.

Ordered, That the Chairman do make the Report to the House.

Several Memoranda were ordered to be reported to the House for printing with the Report, together with certain Memoranda reported and ordered to be published on 9 May 2007.

[Adjourned until Wednesday 10 October at 9.00am

Witnesses

Wednesday 9 May 2007

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Professor Colin Blakemore, Chief Executive, Medical Research Council (MRC), **Professor Ian Diamond**, Chief Executive, Economic and Social Research Council (ESRC) and Chair, Research Councils UK (RCUK) Executive Group, **Professor Keith Mason**, Chief Executive, Science and Technology Facilities Council (STFC), and **Dr Randal Richards**, Interim Chief Executive, Engineering and Physical Sciences Research Council (EPSRC)

Ev 1

Wednesday 6 June 2007

Professor Stuart Palmer, Deputy Vice-Chancellor, University of Warwick, and **Professor Alan Jenkins**, Director, Water Science Programme, Centre for Ecology and Hydrology

Ev 17

Dr Lloyd Anderson, Director, Science, the British Council, **Professor Lorna Casselton**, Foreign Secretary and Vice-President, and **Dr Bernie Jones**, Head of International Policy, the Royal Society

Ev 26

Wednesday 20 June 2007

Professor Sir Keith O’Nions, Director General of Science and Innovation, Department of Trade and Industry

Ev 35

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31	Professor John Wood	Ev 164

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Second Report	Human Enhancement Technologies in Sport	HC 67-I (Cm 7088)
Third Report	The Cooksey Review	HC 204 (HC 978)
Fourth Report	Research Council Institutes	HC 68-I (HC 979)
Fifth Report	Government Proposals for the Regulation of Hybrid and Chimera Embryos	HC 272-I (Cm 7139)
Sixth Report	Office of Science and Innovation: Scrutiny Report 2005 and 2006	HC 203 (HC 635)
Seventh Report	2007: A Space Policy	HC 66-I
Eighth Report	Chairman of the Medical Research Council: Introductory Hearing	HC 476
First Special Report	Scientific Advice, Risk and Evidence Based Policy Making: Government Response to the Committee's Seventh Report of Session 2005-06	HC 307

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