



House of Commons
Science and Technology
Committee

The Use of Science in UK International Development Policy

Thirteenth Report of Session 2003–04

Volume I



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Report, together with formal minutes

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The Science and Technology Committee

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Summary

The Department for International Development manages the UK aid budget and works to eliminate world poverty through the achievement of the Millennium Development Goals. It is impossible to make sustainable progress towards the Goals without harnessing the potential of science and technology, which as part of a vibrant innovation system can provide a route out of poverty for developing countries. Indeed, scientific and technological capability is critical to enabling developing countries to overcome the trade barriers and quality standards imposed by the world markets. The application of science and technology to agriculture is essential for food security and science and technology are crucial too for the development of new medicines and the systems to deliver them. They also play a pivotal role in delivering adequate water and sanitation facilities, providing sustainable energy sources and ensuring conservation of the natural environment. Furthermore, a scientific, or evidence-based, approach to policy making is an indispensable component of good governance. In this inquiry we sought to determine how DFID is utilising science, technology and research to inform its policy and practice, and how it is supporting developing countries in identifying and meeting their science and technology requirements.

DFID has earned respect worldwide for the quality of its work and we have seen first hand some fine examples of DFID's aid projects during this inquiry. The UK is also rightly praised for the leading role it has taken in emphasising the importance of reducing poverty and encouraging growth and development in the world's poorest economies. Nevertheless, we identified a number of serious weaknesses in DFID's approach to the use of science and technology. DFID suffers from a fundamental lack of scientific culture, reflected in its failure to appreciate the cross-cutting nature of science and hence to reap the full benefits offered by the application of science and technology to development. This may be due, in part, to a lack of in-house expertise in science and research, although the fact that DFID has neglected to collect data on the qualifications and research experience of its staff makes this impossible to assess definitively. DFID's recognition of the need for a Chief Scientific Adviser—made before the final public session of this inquiry by the Secretary of State, Hilary Benn—whilst long overdue, is welcome and should make a significant contribution towards the improvement of DFID's treatment of science and research.

We are concerned that the quality of policy making in DFID may, on occasion, have been compromised by a lack of recognition of the value and role of research and evaluation. Poor links between DFID's Central Research Department and Country Offices and DFID's view that it funds research solely for the global good have impaired DFID's ability to benefit from the research that it commissions and to use the results of this research to inform its own policy development. We are pleased that DFID has been taking steps to strengthen its research and evaluation departments. However, DFID must realise that this will not automatically resolve the problem: culture change is essential.

In order to develop, every country requires access to, and the ability to utilise, scientific knowledge. The frailties in DFID's approach to science, technology and research have had a detrimental effect on the support that DFID provides to developing countries. There is now an urgent need for DFID to commit significant extra funds to capacity building of

science and research systems in developing countries, including in the local private sector. Fortunately, the growth in the UK's overseas development budget provides a major opportunity for DFID to address the weaknesses we have identified in its approach to the use of science and technology, without it having to cut other elements of its programme as a result of the recommendations we make in this Report. DFID, however, clearly cannot simply act in isolation: a major international effort with a long-term horizon is also essential for sustainable capacity building to be achieved on the scale required. We recommend that DFID take advantage of the forthcoming UK presidencies of the EU and G8 to call for an international science and technology capacity building strategy, backed up by the necessary resources.

The development sciences community in the UK has contributed enormously to the international development effort. Indeed, the reputation of UK researchers has been instrumental in building DFID's international leadership role. Commendably, DFID has taken the lead in untying overseas aid from the granting of contracts to UK companies. Other countries, however, have not been so magnanimous and there are signs that DFID's approach, which also extends to untying research contracts, may inadvertently be damaging the UK's own capacity to provide development sciences expertise. The current erosion of the UK research base in development sciences is now endangering the future ability of the UK to sustain this leadership role. We recommend that a Development Sciences Research Board be established to safeguard the UK skills and research base in development sciences, and to provide a much needed expansion of the research effort for poverty reduction, basic social and economic development, sustainable growth and the achievement of the United Nations' Millennium Development Goals, to which the UK is so strongly committed.

1 Introduction

1. UK Official Development Assistance (ODA) will amount to more than £4.1 billion in 2004–05 and is set to reach £6.5 billion a year by 2007–08. If the UK does reach its goal of 0.7% of Gross National Income (GNI), by 2013 at the latest overseas aid will amount to an estimated £9.7 billion a year, a huge increase over previous years.¹ These considerable sums reflect the scale of the challenge: 1.1 billion people live on less than \$1 a day; 2 billion people lack adequate sanitation; 1.1 billion people do not have access to clean water; and 37.8 million people are living with HIV/AIDS.^{2,3}

2. In July 2003 we decided to conduct an inquiry to examine how science and technology are informing decisions on the spending of the aid budget, how research is being used to underpin policy making in international development, and how the UK is supporting science and technology in developing countries. We focused predominantly on the Department for International Development (DFID), which has responsibility for £3.8 billion of the aid budget in 2004–05. Whilst this is the first time that our Committee has specifically addressed the work of DFID, the International Development Select Committee has produced numerous Reports considering DFID's performance and activities.

3. We received more than 100 written submissions of evidence and held seven evidence sessions, during which we heard from:

- officials from DFID;
- organisations involved in capacity building;
- organisations involved in agricultural, forestry and environmental R&D;
- organisations involved in engineering and health R&D;
- the Government's Chief Scientific Adviser (CSA) and officials from the Foreign and Commonwealth Office, UK Trade and Investment and the British Council; and
- the Secretary of State for International Development.

4. In addition, we visited the Overseas Development Institute, London, for discussions with Fellows and Directors of development research institutes. We also travelled to Malawi, where we visited agricultural and health projects and met, amongst others, the President of Malawi, Members of Parliament and senior officials.⁴

5. We are grateful to all those who have submitted evidence to this inquiry or assisted us in arrangements for our visits. We would also like to thank our Specialist Advisers: Andrew Barnett, Managing Director, Sussex Research Associates Ltd; Professor Anne Mills, Professor of Health Economics and Policy, and Head, Health Economics and Financing

1 Based on current UK GNI.

2 Department for International Development, *Departmental Report 2004*, CM 6214

3 HC Deb, 15 July 2004, HC 1255W

4 Annex B

Programme, London School of Hygiene and Tropical Medicine; and Professor Michael Elves, Vice-Chairman of Rothamsted Research.

2 Background

Key concepts and definitions

International development and the UK

6. The International Development Act 2002 sets out the ways in which the UK can spend money on international development. The Act establishes poverty reduction as the overarching purpose of British development assistance, either by furthering sustainable development or promoting the welfare of people. The Act states that “The Secretary of State may provide any person or body with development assistance if he is satisfied that the provision of the assistance is likely to contribute to a reduction in poverty”. The Act also defines development assistance as “assistance provided for the purpose of furthering sustainable development [...] or improving the welfare of the population”.⁵

Developing countries

7. There is no single, universally-accepted definition of a developing country. DFID, like many others, uses the definition provided by the Development Assistance Committee of the Organisation for Economic Co-operation and Development (OECD) in its “List of Aid Recipients”, formerly known as the “List of Developing Countries and Territories”. The List is reviewed every three years and countries may be removed from, or added to, the list on the basis of changes in their *per capita* income or their development and resource status. The List is in two parts, with Part I showing developing countries and territories eligible to receive official development assistance, and Part II showing countries and territories eligible to receive official aid. The OECD notes on the List explain that “only aid to ‘traditional’ developing countries on Part I of the List counts as ‘official development assistance’, for which there is a long-standing United Nations target of 0.7 per cent of donors’ gross national product”, whilst “aid to the ‘more advanced’ [transitional] eastern European and developing countries on Part II of the List is recorded separately as ‘official aid’”.⁶ The list is designed for statistical purposes only, not as a guide for aid distribution.

8. According to these definitions, the term “developing country” could refer to a diverse selection of countries, for example: Afghanistan, Armenia, Somalia, Malawi, Indonesia, India, China, Oman and South Africa. Thus, although the term “developing country” is used generically in this report, the situation and needs of individual countries vary dramatically. DFID’s work is focused predominantly on low income developing countries, but it also works with some middle income economies in order to promote continued economic and social development. In this Report, the terms “North” and “South” are also used as short-hand to refer to developed and developing countries, respectively.

5 International Development Act 2002, section 1

6 <http://www.oecd.org/about/>

Millennium Development Goals

Figure 1

The Millennium Development Goals
<p>Goal 1. Eradicate extreme poverty and hunger Target 1. Halve, by 2015, the proportion of people whose income is less than one dollar a day. Target 2. Halve, by 2015, the proportion of people who suffer from hunger.</p>
<p>Goal 2. Achieve universal primary education Target 3. Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling.</p>
<p>Goal 3. Promote gender equality and empower women Target 4. Eliminate gender disparity in primary and secondary education, preferably by 2005, and to all levels of education no later than 2015.</p>
<p>Goal 4. Reduce child mortality Target 5. Reduce by two-thirds, by 2015, the under-five mortality rate.</p>
<p>Goal 5. Improve maternal health Target 6. Reduce by three-quarters, by 2015, the maternal mortality ratio.</p>
<p>Goal 6. Combat HIV/AIDS, malaria and other diseases Target 7. Have halted by 2015 and begun to reverse the spread of HIV/AIDS. Target 8. Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases.</p>
<p>Goal 7. Ensure environmental sustainability Target 9. Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources. Target 10. Halve by 2015 the proportion of people without sustainable access to safe drinking water. Target 11. By 2020 to have achieved a significant improvement in the lives of at least 100 million slum dwellers.</p>
<p>Goal 8. Develop a global partnership for development Target 12. Develop further an open, rule-based, predictable, non-discriminatory trading and financial system. (Includes a commitment to good governance, development, and poverty reduction – both nationally and internationally.) Target 13. Address the special needs of the least developed countries. (Includes: tariff and quota free access for least developed countries' exports; enhanced programme of debt relief for heavily indebted poor countries and cancellation of official bilateral debt; and more generous official development assistance for countries committed to poverty reduction.) Target 14. Address the special needs of landlocked countries and small island developing States (through the Programme of Action for the Sustainable Development of Small Island Developing States and the outcome of the 22nd special session of the General Assembly). Target 15. Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term. Target 16. In co-operation with developing countries, develop and implement strategies for decent and productive work for youth. Target 17. In co-operation with pharmaceutical companies, provide access to affordable essential drugs in developing countries. Target 18. In co-operation with the private sector, make available the benefits of new technologies, especially information and communications.</p>

9. The aim of DFID is “to contribute to the elimination of poverty in poorer countries, in particular through the achievement by 2015 of the Millennium Development Goals”.⁷ The Millennium Development Goals (MDGs) emerged from the Millennium Summit of the United Nations (UN) General Assembly in September 2000 and provide concrete targets, supported by 189 countries, for advancing development and alleviating poverty by 2015.⁸ The MDGs are listed in figure 1, together with the targets for achievement.

Additional notes on terminology

10. **Natural science** is defined in this report as the sciences involved in the study of the physical world and its phenomena. This includes biological, physical, chemical and environmental science, but excludes social science.

11. **Development sciences** is used throughout this report as short-hand to refer to the full spectrum of social and natural sciences, engineering and technology undertaken with the purpose of informing, supporting or promoting international development. It should not be confused with the term “development studies”, which usually refers to a branch of social science concerned with international development.

12. **Capacity building** refers to activities that build or enhance the ability of developing countries to meet their own needs. In this report, capacity building primarily refers to the building of capacities in developing countries for undertaking and utilising science, technology, research and innovation. However, the building of capacities in the UK to assist developing countries is also considered.

13. **Innovation** in this context refers to the use of new ideas, technologies or ways of doing things in a place, or by people, where they have not been used before. Research is one element of a wider process of innovation. The effectiveness of research is now seen to be dependent on the capacities and resources of a range of actors, in both the public and private sectors, and the links that enable them to communicate effectively with each other, both within a country and with the outside world.

14. **Untying of aid** describes the ending of the practice by some donors of insisting that aid funding be spent by the recipient on goods and services from the donor country. Untied aid is freely available to buy goods and services from any country.

Importance of science and technology for development

15. There is a wealth of evidence describing the relationship between scientific and technological innovation and economic growth.⁹ Science and technology can make an invaluable contribution to development by, for example, reducing disease burdens and food insecurity; facilitating communication; enabling monitoring of global and national environments to minimise conflicts and give warning of natural disasters; and developing new ways of using water, energy and other natural resources. In addition, **science and research can engender a culture of inquiry, openness and respect for evidence that can**

7 Ev 94, para 2

8 <http://www.developmentgoals.org/>

9 e.g. HM Treasury, DTI, DfES, *Science and Innovation Investment Framework 2004–2014*, July 2004, Annex A

have positive spill-over effects on the wider community. Indeed, a scientific, or evidence-based, approach to policy making is an integral component of good governance.

Figure 2

Examples of the contribution made by science and technology to development

Biogas Digesters: The Kigali Institute of Science, Technology and Management in Rwanda has been at the forefront of developing and propagating biogas technology. Between 2000 and 2003, the Rwandan Government, in collaboration with the Dutch Government, commissioned the Kigali Institute of Science, Technology and Management to install two major human waste management and biogas generation systems in Cyangugu prison (which houses 6,500 inmates). The biogas produced as a by-product of the digester is now used in the prison kitchen. In addition, as a result of the project, firewood consumption from the dwindling forests surrounding the prison has been cut by 75% and KIST has earned \$130,000.¹⁰

Pest control: The larger grain borer beetle is a major pest of staple food commodities in Africa. The Natural Resources Institute led an R&D programme, funded by DFID, Deutsche Gesellschaft für Technische Zusammenarbeit GmbH, the EU, the UN Food and Agriculture Organization, and the Southern Africa Development Community. The programme led to the identification of a novel insecticide mixture which, when used in conjunction with changes to the traditional maize storage system, was able to control the invading pest as well as other long-established pest species. The approach was successfully introduced into several African countries through multilateral and bilateral donor-funded programmes and reinforced by a broader pest management system including biological control. The impact of the research in Tanzania alone resulted in a reduction of £21.5M(\$38.5M) in the cost of maize losses over a 15-year period.¹¹

Pro-poor tuberculosis research: The Equi-TB programme in Malawi is a collaboration between the National Tuberculosis Programme of Malawi and the Liverpool School of Tropical Medicine, with core-funding from DFID. The aim of the programme is to promote the implementation of pro-poor strategies to enhance care and support for tuberculosis. The research undertaken by the programme has helped to ensure a focus on equitable access to healthcare in both the Malawi National Tuberculosis Plan 2002—06 and Ministry of Health Sector Wide Approach to health system development. In addition, the capacity building element of the programme has enabled six Malawians to gain Masters degrees from the University of Malawi, and one researcher has completed a Masters in Community Health from the Liverpool School of Tropical Medicine which combined a taught course in Liverpool with field work in Malawi. The Department of Sociology and Ministry of Health Community Health Sciences Unit in Malawi have also benefited from inputs such as computers, printers, desks etc.¹²

Mobile telephony: In 1997 the Grameen Bank, which provides microcredit to poor people, established a programme called “Village Phone” to enable women entrepreneurs to start a business providing wireless payphone services in rural areas of Bangladesh. The programme has helped to reduce poverty and raise the status of the women entrepreneurs. It has also improved the livelihoods of farmers and others by granting them access to critical market information and a means of communicating with relatives etc. There are now more than 55,000 phones in operation in 28,000 villages in Bangladesh, with an estimated 80 million people benefiting from the programme.¹³

16. The Intermediate Technology Development Group commented that although not every country needs to be at the cutting edge of science, “every country does need domestic capacity to identify technology’s potential benefits and to adapt new technology to its needs and constraints. Governments increasingly need R&D capability to enable them to regulate the acquisition and absorption of technology and in order to improve their own activities.

¹⁰ Kigali Institute of Science, Technology and Management, *Strengthening Our Core Business*, October 2003

¹¹ <http://www.nri.org/work/lgbthreat.htm>

¹² Memorandum from DFID [not printed]

¹³ <http://www.grameenphone.com/village.htm>

Similarly capacity to engage in international policy making on science and technology issues, including trade issues, is needed”.¹⁴ Furthermore, a recent World Bank policy research paper observed that “the ability of countries to access, comprehend, select, adapt, and use scientific and technological knowledge will increasingly be the determinant of material well-being and quality of life”.¹⁵ **In order to develop, every country requires access to, and the ability to utilise, scientific and technical knowledge.**

17. Awareness of the contribution that science and technology can make to international development has been increasing. A recent report by the Task Force on Science, Technology and Innovation for the United Nations Millennium Project noted that “meeting the MDGs will require a substantial reorientation of development policies to focus on key sources of economic growth, especially those associated with the use of new scientific and technological knowledge”.¹⁶ Science and technology also feature prominently in the priority areas adopted by the New Partnership for African Development (NEPAD), and in the deliberations of the Commission for Africa recently launched by the Prime Minister. In addition, the InterAcademy Council (IAC), a body established by scientific academies around the world to provide expert advice on scientific issues to the United Nations and other international organisations, published two reports in 2004 on, respectively, science and technology capacity building in developing countries, and realising the potential of African agriculture.^{17,18} In response to the former report, Kofi Annan, Secretary-General of the United Nations, stated that the application of science and technology to agriculture was now his top priority.¹⁹

18. At the World Summit on Sustainable Development in Johannesburg in 2002, Sir David King, the Government Chief Scientific Adviser (CSA), spoke emphatically about the importance of science and technology for poverty alleviation and the need for capacity building in developing countries. During the course of this inquiry, Sir David King also commissioned a scoping study to explore how scientific capacity building in developing countries can be taken forward in an integrated and strategic way across Whitehall. More recently, the *UK Science and Innovation Investment Framework 2004–2014*, published in July 2004, identified international development as one of five “Key policy priorities for government R&D”.²⁰ **We welcome the fact that the UK Government has now explicitly stated its commitment to the application of science, technology and research to international development.**

14 Ev 182, para 17

15 Watson, R. *et al*, *Strategic Approaches to Science and Technology in Development*, World Bank Policy Research Working Paper, April 2003

16 Interim Report of the Task Force on Science, Technology and Innovation United Nations Millennium Project, *Science Technology and Innovation, Challenges and Opportunities for Implementing the Millennium Development Goals*, 1 February 2004

17 InterAcademy Council, *Inventing a better future: A strategy for building worldwide capacities in science and technology*, January 2004

18 InterAcademy Council, *Realizing the Promise and Potential of African Agriculture*, January 2004

19 “Kofi Annan backs call for science push in developing countries”, *Nature*, vol 427, 12 February 2004

20 HM Treasury, DTI, DfES, *Science and innovation investment framework 2004–2014*, July 2004

3 DFID Approach to Funding

Direct budgetary support

19. In recent years international donors have been moving away from project and programme support in favour of direct budgetary support. According to this model, donors provide funding directly to developing country governments. DFID told us that its country programmes “primarily support the developing country’s own Poverty Reduction Strategy” and explained that a Poverty Reduction Strategy “allows a developing country to identify the opportunities for, and constraints on, poverty reduction in that country”.²¹ The Strategy is developed through consultation within the developing country and collaboration between the developing country government and the World Bank and International Monetary Fund. The Strategy outlines the country’s macroeconomic, structural and social policies and programmes to promote growth and reduce poverty, and also describes the requirements for, and major sources of, financing. Donors, such as DFID, then link their aid support to achievement of the strategy. This approach has now been adopted by the majority of donors.

20. The Poverty Reduction Strategy Paper (PRSP) approach was initiated by the International Monetary Fund and World Bank in 1999, but as DFID commented, the “switch to support for a Poverty Reduction Strategy came about in part as a result of research, not least by British scholars”.²² DFID explained that this research “demonstrated that development programmes were more likely to succeed if they were owned by developing country governments and people than if donors attempt to impose their own ideas”.²³ Direct budgetary support also facilitates pooling of aid from different donors, thereby reducing transaction costs and promoting co-ordination.

21. The success of the PRSP approach depends heavily on the ability of the developing country government to be a reliable partner to the donor community. DFID told us that it “adopts a comprehensive approach to assessing and managing the fiduciary risks associated with direct budgetary support [...] The decision to provide direct budgetary support is made in cases where the potential development benefits are assessed as justifying the risks involved”.²⁴ The Rt Hon Hilary Benn, Secretary of State for International Development, also made the point that a balance between direct budgetary support and programme support was still required: “Direct budget support over the last few years has ranged between 15 and 19% of our total bilateral programme. That means that over 80% is not direct budget support”.²⁵ The President of Malawi concurred, saying that he believed that both project funding and budget support were required for the time being. We also heard in Malawi that addressing corruption was vital to enable further moves towards direct budgetary support. Doctors and nurses, for example, at Ntcheu District Hospital told us that-when they were in stock-up to half of drugs and supplies ordered from the

21 Ev 100, para 37

22 Ev 100, para 38

23 Ev 100, para 38

24 Ev 311

25 Q 523

country's Central Medical Supplies unit in Lilongwe were pilfered en route, often ending up on the black market in neighbouring Mozambique. In a letter to the Committee following the visit, Mr Benn stated that DFID Malawi had "not heard reports of pilferage of Anti-Retroviral Aids drugs" specifically.²⁶ This is hardly surprising as Ntcheu hospital told us it was still waiting for HIV/AIDS drugs to be distributed, months after it had been expecting them. In front of the committee, however, Mr Benn did echo views about the difficulties in moving away from project to direct budgetary support in such circumstances: "if there are concerns about corruption that is not a route down which you would want to go. We make a judgement depending on the circumstances. Tackling corruption is fundamental".²⁷

22. It is expected that the proportion of aid channelled by direct budgetary support will increase in years to come. This move away from project and programme support is likely to impact on the nature of both the scientific advice that DFID requires and the scientific support it provides to developing countries. The Centre for Land Use and Water Resources Research warned that the "shift within DFID to direct budgetary support to countries [...] is diminishing the donor agency's ability to provide direct technical guidance to development projects".²⁸ We asked DFID how the move towards direct budgetary support was impacting on its scientific and research staffing needs. For example, it might be assumed that the need for certain types of expertise would diminish if direct budgetary support became the predominant mode of assistance. We received only vague responses from DFID: Paul Spray, Head of the Central Research Department, for example, told us: "We tend now to move from discussing the particularities of projects more to discussing the broad policies".²⁹ **DFID has not provided us with a satisfactory description of how its needs for science and technology advice are changing as a result of the increased use of direct budgetary support, or any convincing evidence that it has made a formal assessment of this. It is troubling that DFID has not considered the full ramifications of this significant policy shift. We recommend that it does so. We regard scientific and technological capability as an important part of good governance. It should therefore be a condition of budgetary support.**

23. We note that science and technology rarely feature significantly in PRSPs, or DFID Country Assistance Plans.³⁰ This is not entirely surprising. As Simon Maxwell, Director of the Overseas Development Institute, commented, "if you go into countries and say, 'We want our aid money to be used to pursue the Millennium Development Goals', you are unlikely to get them coming back and saying, 'We regard creating international networks and centres of excellence in science and technology at the top of the list'".³¹ Professor Julian Evans also told us: "It requires a sophisticated government to appreciate what research can

26 Letter from Mr Benn [not printed]

27 Q 523

28 Ev 326, para 1.3

29 Q22

30 Country Assistance Plans are plans for DFID's bilateral programmes laying out how DFID will contribute to achievement of the MDGs in that country, based on the country's PRSP.

31 Q 70

do for development, or a sophisticated donor to promote that idea”, remarking that “DFID used to have that capability” – the implication being that this is no longer the case.³²

24. Science and technology tend to have a low priority in developing countries and ultimately if international donors do not clearly articulate the enabling role of science and technology in the achievement of the MDGs, it is hard to see how representation in PRSPs will be achieved. We saw in Malawi, for example, that donor preferences can significantly influence the content of a PRSP. The Secretary of State agreed that the process of drawing up PRSPs needs to be a “combination of push and pull” between the donor community and the developing country.³³ If DFID is not minded to “push” science and technology by illustrating the medium and longer-term benefits they can yield, it is highly likely that the understandably short-term perspectives of developing country governments will result in science and technology being overlooked. The situation is exacerbated by the fact that the guidelines for preparation of PRSPs mostly focus on very near-term horizons, and there do not appear to be specific guidance notes for incorporation of science and technology considerations into PRSPs. **We are concerned that the ability of science, technology and research to contribute to progress towards the Millennium Development Goals is being hampered by the Poverty Reduction Strategy process, as currently implemented.**

25. Indeed, Andrew Scott, Policy and Programmes Director, Intermediate Technology Development Group, told us that DFID had a “weakness” in “the support they give to developing country governments for them to be able to develop their own science, technology and innovation policies”.³⁴ The Appropriate Development Panel of the Institution of Civil Engineers expressed a similar concern: “Effective poverty reduction initiatives will depend heavily on the scientific capacity both to help develop appropriate poverty strategies and to put them in place and maintain them. There would appear to be little evidence of the UK making significant steps in this direction”.³⁵

26. We asked DFID what formal mechanisms it used to help developing countries identify their science and technology requirements and incorporate these into their PRSPs. The response was disappointing: “Dialogue with Governments over Poverty Reduction Strategies is a top priority for relevant DFID country offices. Science and technology issues are raised as part of our discussions on each sector. Particular emphasis is given to those sectors identified as priorities in our Country Assistance Plans. Our discussions on Poverty Reduction Strategies take place in a systematic way, and involve helping with formulation of strategies, implementation, monitoring and evaluation”.³⁶ This clearly places the onus on Country Office staff to encourage developing country governments to address science and technology in their PRSPs. The technical nature of science and technology means that developing countries may require greater advice and support on these issues than in some other areas. Unfortunately, as discussed further in paragraphs 68–70, we have reservations about the levels of expertise in science and technology within the Country Offices, and therefore about the effectiveness of this approach.

32 Ev 255

33 Q 521

34 Q 92

35 Ev 144

36 Ev 371

27. **We conclude that DFID has given insufficient consideration to how best to help developing countries identify their requirements for scientific and technological advice and research, and how to ensure that science, technology and research are represented appropriately in developing countries' Poverty Reduction Strategy Papers. Since Country Office staff are unlikely to have the full range of technical expertise or experience required to supply effective independent advice, DFID should work together with other donors to develop specific guidance on best practice in this area.**

28. Moreover, whilst we support DFID's policy of moving to a model where developing countries identify their own priorities, it is clear that national science, technology and research systems in many developing countries are too weak to enable them to contribute effectively to the PRSP process. We saw an example of this in Malawi, where the National Commission for Science and Technology received only a fraction of its official budget and was therefore totally unable to engage in high-level policy making, or to implement the policies it had developed. Senior officials from the National Commission for Science and Technology expressed their frustration at not having any ownership or overview of the research that was being carried out in Malawi, including by international donors. They also said that their lack of capacity prevented them from ensuring that donors were complying with the regulations on carrying out research in Malawi. Revealingly, the National Commission for Science and Technology placed "the general lack of integration of science and technology in national development planning processes" at the top of its list of major constraints.³⁷

29. We asked DFID in oral evidence what it was specifically doing to build the capacity of science and technology systems in countries where they are almost non-existent. DFID was unable to provide a concrete example and instead provided evidence of "an indirect contribution", emphasising the need to address "the causes of repression, effective payment of salaries, economic stability".³⁸ We fully acknowledge the importance of creating the right economic and governance frameworks for science and technology to flourish. Nonetheless, DFID needs to encourage greater direct support to national science, technology, research and innovation systems in developing countries over the medium- to long-term, in order to be consistent with its policy of enabling developing countries to identify their own priorities. **Sustainable capacity building is a slow process and investment is therefore needed now if developing countries are to have any chance of developing the necessary capabilities in science, technology and research in coming years. In view of the short-term perspective of Poverty Reduction Strategy Papers, there is a case for DFID, in collaboration with other major international donors, to develop capacity building strategies with each country. For those countries where national science, technology and research systems are so weak that capacity building will not make an impact for the foreseeable future, DFID needs to have a coherent and transparent strategy to help them identify their priorities in science, technology and research, and to ensure that these are appropriately represented in developing country Poverty Reduction Strategy Papers.** The role of capacity building of national scientific institutions in developing countries is discussed further in paragraph 129, and capacity building in the UK in paragraph 197.

37 Memorandum from National Commission for Science and Technology in Malawi [not printed]

38 Q 580

Short-term aid versus long-term capacity building

30. Investment in science, technology and research requires long-term commitment. Donors, such as DFID, are faced with competing demands for funding of humanitarian relief in emergency situations that require short-term (but often substantial) aid provision, medium-term actions to meet the MDGs, and longer-term development of the knowledge, infrastructure and capacity required to prevent emergencies occurring in the future. When asked how DFID determined the balance between these choices, the Secretary of State indicated that the funding was effectively allocated on a case by case basis.³⁹ The Government CSA also observed that “there is currently no clear UK Government approach to S&T capacity building so no alignment with donor agencies/multilaterals, and [...] no consensus on the appropriate balance between capacity building and short-term aid provision”.⁴⁰

31. Although the demands for short-term aid are unpredictable and liable to fluctuate, it is important that DFID has a clear policy for deciding what proportion of the aid budget should be allocated to longer-term development. In light of the move towards direct budgetary support and the decentralised nature of much of DFID’s funding, as well as the need to be able to respond to crises, it would not be practicable to define the distribution precisely; flexibility is essential. Nonetheless, **we urge DFID to develop clear guidelines to inform decisions on the balance between short-, medium- and long-term aid provision, as well as clear country-specific policies with respect to this balance.**

Interpretation of the Millennium Development Goals

32. DFID’s development agenda is shaped by the MDGs. The London School of Hygiene and Tropical Medicine was not alone in remarking that although it “strongly supports [...] the focus on achieving the Millennium Development Goals”, there is a need to remember that “the process of attaining them in a sustainable way requires a longer term perspective than is sometimes acknowledged”.⁴¹ Professor David Taylor, Centre for Tropical Veterinary Medicine, told us that the “quick-fix and short term vision” of development agencies was “undermining and distorting the contribution science can make towards development”.⁴² Moreover, Professor David Molyneux from the Liverpool School of Tropical Medicine also stated in a recent article that the focus of health policy makers on HIV/AIDS, tuberculosis and malaria as a result of the MDGs was detracting attention and resources from other infectious diseases, such as leprosy and river blindness, which are responsible for “deleterious effects on the social and economic wellbeing of the poorest quintile of populations”.⁴³

33. In addition, Dr Andrew Cotton, Director of DFID’s Resource Centre in Water, Sanitation and Environmental Health (WELL), noted that although the UK Government “was a prime mover behind one of the great achievements at the World Summit on

39 Q 524

40 Ev 392

41 Ev 135

42 Ev 241, para 10

43 David Molyneux, “‘Neglected’ diseases but unrecognised successes – challenges and opportunities for infectious disease control”, *The Lancet*, Vol 364, 13 July 2004, pp 380–383

Sustainable Development in Johannesburg 2002, namely adopting a global target for improving access to sanitation”, the fact that neither water nor sanitation are headline MDGs means that “there needs to be a strong advocacy effort for the contribution the sector makes – and, by implication, the role of technology”.⁴⁴ The Environmental Audit Select Committee has addressed the targets that emerged from the World Summit on Sustainable Development in detail in its Report: *World Summit on Sustainable Development 2002—from Rhetoric to Reality*.⁴⁵ Dr Cotton additionally remarked on the “detectable reduction in the emphasis placed by DFID on the role of technology and engineering as a means to support pro-poor development”.⁴⁶ The Appropriate Development Panel of the Institute of Civil Engineers shared this concern and told us that during the workshops for the Applied Technologies to Improve Livelihoods that DFID organised in preparation for the new Research Strategy, it had been “warned off the word ‘infrastructure’ – as though [...] you do not need to do any more about that”.⁴⁷

34. In addition, whilst the headline goal for primary education is laudable, expansion of secondary and tertiary education systems is essential, for example to safeguard the supply of teachers. Furthermore, the British Council recently published a survey of young people’s perceptions in Malawi, Zambia and Zimbabwe which showed that 42.6% of young people said that what they most wanted to achieve in their lives within the next five years was “to pursue further education”.⁴⁸ Since developing countries tend to base their PRSPs on the targets enshrined in the MDGs, the absence of headline goals for science, technology and further or higher education may reduce the emphasis placed on these issues by developing countries.

35. DFID did not accept the validity of these concerns, telling us that the MDGs “focus the world’s attention on some really important things that we need to do”⁴⁹ and “have also opened up the door to science and technology [...] We are talking 2015, we are talking about problems for which there is no immediate solution and therefore research is required”.⁵⁰ **We are pleased to hear DFID acknowledge the importance of science, technology and research for achievement of the Millennium Development Goals, but we are not convinced that these words have been translated into policy or practice. We remain concerned that technology-intensive areas such as infrastructure, energy, water and sanitation are at risk of being neglected by DFID and other donors due to their omission from the headline Millennium Development Goals.** The specific nature of the Goals, whilst bringing focus to the international development effort, may also detract resources and attention from approaches such as capacity building, if interpreted too literally.

44 Ev 329–330

45 Environmental Audit Committee, Twelfth Report of Session 2002–03, *World Summit on Sustainable Development 2002—From Rhetoric to Reality*, HC 98–I

46 Ev 330

47 Q 397

48 British Council, *Young People’s Perception Survey: a summary of findings in Malawi, Zambia and Zimbabwe*, 2004

49 Q 529 [Mr Benn]

50 Q 529 [Mr Bass]

Multilateral funding routes

36. Approximately half of DFID's resources are spent through multilateral agencies. The most significant amounts involved comprise the UK's share of the European Commission development budget and contributions to the World Bank, Regional Development Banks and UN Agencies.⁵¹ The recent National Audit Office (NAO) report on DFID's funding for HIV/AIDS suggested that DFID needs to pay greater attention to evaluating how the work of multilateral organisations that receive DFID funding aligns with DFID's objectives: "DFID provides significant sums to multilateral development institutions [...] HIV/AIDS has such a bearing on the Millennium Development Goals that it should feature in any strategy relating to those multilateral development institutions which have a clear interest in responding to the epidemic. However, eight out of the fourteen DFID Strategy Papers for such institutions did not mention HIV/AIDS".⁵²

37. We followed this issue up with DFID and were told by the Secretary of State that DFID was "trying to move towards having a better system for judging the effectiveness of different bodies. So if one looks at the different UN agencies we are in the process now of developing a matrix of trying to judge who is doing a good job, who is doing a less good job and for us to adjust our funding accordingly. It is a perfectly rational, sensible thing to do".⁵³ **We fully agree with the Secretary of State that rigorous evaluation of the effectiveness of funding channelled through different multilateral agencies is "a perfectly rational, sensible thing to do", and are therefore surprised that DFID is only now beginning to adopt such an approach.** We accept that conditional support may sometimes be necessary in order to raise standards in poorly-performing organisations, but DFID needs to be open about its reasons for provision of aid in these cases.

38. The DFID Departmental Report 2004 states that in 2003–04 "the UK's share of the European Commission's development and pre-accession programmes is expected to total some £970 million. This is about 25% of DFID's budget".⁵⁴ Yet Mr Benn said of EU development funding: "as I think everybody knows, it has not been terribly effective in the past".⁵⁵ The Secretary of State additionally told us that there was "a process of reform taking place that the UK has played a very strong part in pushing, and we have seen some improvement. There is further improvement yet to be made".⁵⁶ During our visit to Malawi we also heard that EU development programmes in Southern Africa were of variable quality.

39. The International Development Select Committee stated in its Report on DFID in 2003 that the "EU's record in terms of the share of aid reserved for poor countries remains substantially worse than that of individual member states" and warned that in view of the enlargement of the EU, "DFID will need to find ways of ensuring that the accession of the

51 DFID Departmental Report 2004, para 7.36

52 Report by the Comptroller and Auditor General, *Department for International Development: Responding to HIV/AIDS*, 18 June 2004, HC 664 2003–2004

53 Q 593

54 DFID Departmental Report 2004, para 7.38

55 Q 593

56 Q 593

‘ten’ does not reinforce the tendency for the EU to focus on the ‘near abroad’.⁵⁷ The Report also criticised DFID for not providing “a succinct assessment of how the EU external assistance meets the UK’s development objectives” in the 2003 Departmental Report.⁵⁸ **It is not acceptable that 25% of DFID’s funds have been potentially allocated to development programmes that are widely perceived to have been of dubious effectiveness. DFID has responsibility for ensuring that the multilateral routes through which UK aid is channelled represent good value for money for UK taxpayers. DFID’s past failure to monitor its multilateral investments has been a hindrance to ensuring that this expenditure makes an effective contribution to meeting DFID’s objectives.**

Public–private partnerships

40. The draft Research Strategy stated that DFID has been a pioneer of public–private partnerships (PPPs) and was looking to take forward, or develop, PPPs in agriculture and health.⁵⁹ However, the Appropriate Development Panel of the Institution of Civil Engineers (ADP) was sceptical of the utility of PPP arrangements for meeting international development objectives, suggesting that companies used them “to avert criticism/attention from less commendable actions”.⁶⁰

41. By contrast, the International Livestock Research Institute (ILRI), based in Nairobi, told us that DFID had taken “a bold step in supporting ILRI and partners to apply a very novel genomics approach to develop the ECF [East Coast Fever] vaccine” and said that the fact that DFID had required “detailed feasibility studies which involved the private sector before approving the grant” ensured that once proof of concept had been achieved, the “probability of uptake by the private sector” was “high”.⁶¹ The Centre for Tropical Veterinary Medicine (CTVM) also expressed support for DFID’s approach to PPPs for livestock vaccines: “DFID have responded positively to the technical and financial problems such research presents and intend to assist in establishing a public–private partnership specifically to develop vaccines against common livestock diseases of the tropics”.⁶² Professor Maudlin from the CTVM explained to us that his enthusiasm for the PPP stemmed “from the fact that it should provide a boost to the funding”.⁶³

42. The main advantage of PPPs is the access that they provide to additional resources. At present, only 10% of the \$50–60 billion global budget for health research is spent on the diseases that affect 90% of the world’s population and the “big five” agricultural research multinationals spend between them more than twenty times the entire Consultative Group on International Agricultural Research budget on post–genomic agricultural research.⁶⁴ Much of the scientific research conducted, particularly in areas such as drug and vaccine

57 International Development Committee, Eighth Report of Session 2002–03, *Department for International Development: Departmental Report 2003*, HC 825

58 Ibid

59 DFID, *DFID Research Funding Framework 2005–07*, May 2004, Pg 11–12

60 Ev 144

61 Ev 222

62 Ev 336

63 Q 484

64 Sarah Holden and Taylor Brown, DFID, *Research Strategy: Leveraging Private Sector Research*, 2003

development, is extremely costly, with the pharmaceutical industry spending, on average, \$800 million for every new drug registered.⁶⁵ It is simply unrealistic to expect individual donors, or even consortia of aid agencies, to fund such efforts single-handedly. PPPs provide a means of sharing costs with the private sector, as well as the opportunity to leverage the scientific and management expertise within that sector. PPPs can also help to co-ordinate the research being undertaken by different partners. It is, of course, vital to give careful consideration to the appropriateness of private sector involvement in each individual case, with the arguments for privatisation of services in developing countries, for instance, being less clear-cut than for the use of PPPs for drug or vaccine development. In addition, strategies must be in place to ensure the sustainable delivery of benefits to the developing country partners since it may not be realistic to expect the private sector to commit the long-term investment required for sustainable development.

43. DFID has played a leading role in leveraging private sector research, providing funding for the International AIDS Vaccine Initiative and the Global Alliance for Vaccines and Immunisation. DFID is also the biggest bilateral source of funds for the Medicines for Malaria Venture and the African Agricultural Technology Foundation. **We support DFID's increasing emphasis on the role that public-private partnerships can play in facilitating research for development where costs would otherwise be prohibitively high, or there would be no incentive for private sector involvement, and where the benefits are clear for the developing country partners.** The roles of the private sector and PPPs at the local level are discussed further in paragraphs 137–141.

65 Ibid

4 Scientific and Technological Expertise in DFID

Context of science and research in DFID

44. DFID engages with science, technology and research in three main ways. Firstly, it commissions research through both the Central Research Department and Country Offices. Secondly, DFID needs to access science and technology advice in order to inform its own policy making. The Policy Division leads on this task although the Information Division also plays an important role in helping DFID staff to draw on the global pool of knowledge to inform decision making. Thirdly, DFID's Country Offices provide support to developing countries to assist them in identifying and meeting their own science and technology requirements.

45. In evidence to this inquiry, DFID gave us the following interpretation of the concept of research:

“There is no standard Whitehall definition of research and policy advice, so Departments can define these concepts differently. Research is an investigation undertaken to discover new facts, or get additional information over a longer-term period. The key characteristics for DFID are (i) it generates information that is publicly available, and aimed at whoever can most relevantly use it in the task of reducing poverty, (ii) it is long-term in nature (generally three years or more) [...] Policy advice is the giving of informed opinion about what to do, based on policy analysis. For DFID, the key characteristics that distinguish policy analysis from research are (i) DFID is the client that benefits from the analysis, and (ii) it is shorter term (in the region of three months). Policy analysis generally is based on existing research, rather than generating new knowledge.”⁶⁶

We have reservations about this interpretation of policy and research. Policy should be formed on the basis of evidence; commissioning of new research to provide this evidence will frequently be required and may take considerably longer than three months.

46. DFID considers itself to be different from other Government departments because of its focus on developing countries and the fact that it “funds research as part of the collective international effort focused on removing constraints and creating opportunities to reduce poverty”.⁶⁷ DFID told us that its “expenditure on research in 2001–02 was £147 million, of which £78 million came from centrally funded research programmes”.⁶⁸ The sectoral division of this expenditure is indicated in Table 1. DFID's funding is also heavily decentralised, with £69 million being spent on research by the Country Offices.

66 Ev 310

67 Ev 94

68 Ev 95

Table 1: Sectoral Breakdown of DFID Centrally-Funded Research Programmes (2001–02)

Sector	£ million
Economic policy	9
Education	2
Infrastructure and Urban	14
Environment	1
Rural Livelihoods	36
Health and Population	16

Source: DFID

47. The Policy Division in DFID undertakes policy analysis, as well as commissioning analysis from consultants and “resource centres”. Resource centres are organisations that provide advice on demand to DFID professional staff under three to five year call down contracts. The format of resource centres varies greatly: there is, for example, one major centre for health services, but several smaller arrangements for engineering and geosciences. Resource centres probably represent the main mechanism through which DFID obtains scientific and technical advice from UK organisations. DFID also told us that its staff routinely seek advice from multilateral organisations such as the World Health Organisation and the World Bank.⁶⁹

48. Prior to April 2003, the Policy Directorate comprised two Divisions and 12 Departments covering a number of topics, including economics, international trade, rural livelihoods (mainly agriculture), education, health, infrastructure and social development. Nine Chief Advisers were drawn from the 14 heads of division or departments.⁷⁰ At that time, Chief Advisers played a key role in DFID, in part due to their membership of the important “Development Committee”, which provided a vital link to the rest of DFID.⁷¹ Chief Advisers were also leaders of DFID’s expert skills base (effectively heads of profession), and provided specialist advice not only to Ministers and Senior Managers but also to the wider community. The Policy Division has been extensively reorganised between April 2003 and May 2004 and the consequences of this reorganisation are considered in paragraphs 64–67.

49. In November 2002 DFID published a research policy paper, *Research for Poverty Reduction*, often referred to as the “Surr Report” after its principal author.⁷² Various reviews of DFID’s research support had been undertaken previously and the Surr Report was commissioned as a direct result of a report prepared by DFID’s Internal Audit Department, entitled *Knowledge and Research Programmes*. The Surr Report observed that there had been considerable changes in DFID’s approach to research over recent years. For example, DFID had moved to a much stronger focus on poverty reduction and on

69 Ev 310

70 Ian McKendry et al., *Chief Advisors: organising around PSA objectives*, April 2002

71 Ibid

72 Martin Surr et al., *Research for Poverty Reduction: DFID Research Policy Paper*, November 2002

outcomes (as opposed to outputs).⁷³ DFID had also adopted a greater emphasis on commissioned, rather than responsive mode, research.⁷⁴ In addition, the Surr Report commented on the dramatic reduction of in-house management of research, to the extent that “nearly all of the research” that DFID funded was managed and undertaken externally.⁷⁵ Following the Surr Report, DFID has increased its emphasis on research and has made a number of alterations to the internal arrangements for handling research, including the establishment of a Central Research Department. During the course of this inquiry, and in fulfilment of a recommendation of the Surr Report, DFID published a new draft Research Strategy.⁷⁶ The implications of these changes are covered in some detail below but clearly at this early stage it is difficult to predict the likely impact of the most recent changes on DFID’s performance.

In-house expertise

50. The Surr Report commented that the pronounced trend towards outsourcing of research management in DFID had led, amongst other things, to concerns over the “de-skilling of staff within DFID”, and a reduction of “DFID’s capacity to act as an intelligent customer (and partner)”.⁷⁷ The Royal Society was one of many organisations who told us of its alarm “over the level of in-house experts available within DFID to assimilate, disseminate and co-ordinate scientific research”.⁷⁸ Dr Cotton, Director of WELL, also remarked that DFID probably had “an internal capacity issue” that prevented “the potential contribution of technological improvements” from feeding “through into programmes and strategies in a structured way”.⁷⁹

51. We heard considerable criticism of the low numbers of DFID staff with a background in, and understanding of, research. Dr Adrian Newton from Bournemouth School of Conservation Sciences told us that DFID needed to “reiterate its commitment to research, and strive to increase understanding among its own staff about the value of research” and “should also seek to appoint staff with professional research experience to increase the capacity of the organisation to both understand what research can offer, and to apply the results that it generates”.⁸⁰ Moreover, Dr Newton felt the need to clarify, for the benefit of DFID, the fact that “research is not a commodity that we can choose to have or not; it is a process of solving problems. In fact it is the only tool that we have that actually generates knowledge. The only alternative method for solving a problem is trial and error”.⁸¹ Professor Bradley from the London School of Hygiene and Tropical Medicine also stated that “the idea that DFID can simply ‘buy in’ research as needed is naïve and fails to

73 Ibid

74 Ibid

75 Ibid

76 DFID published the final version of its Research Funding Framework 2005-2007 (referred to as the “Research Strategy”) in September 2004. The points made in this Report pertaining to the draft Research Strategy apply equally to the final Research Strategy.

77 Martin Surr et al., *Research for Poverty Reduction: DFID Research Policy Paper*, November 2002

78 Ev 283

79 Ev 330, para 6

80 Ev 121, para 2

81 Ibid

understand the nature of the linkage between research, expertise, and sound advice”.⁸² When questioned on the issue of outsourcing, Mr Spray, Head, DFID’s Central Research Department, conceded that benchmarking exercises against other Government departments indicated that DFID did “need more in-house staff, not in order to substitute for the external but precisely to engage better with them”.⁸³ As a result, Mr Spray told us that the Central Research Department was expanding from approximately seven to 17 over the next 18 months.⁸⁴

52. We encountered a widespread perception that the levels of expertise in natural science had fallen within DFID, in contrast to the growing numbers of social scientists. Dr Steven Belmain from the Natural Resources Institute (NRI) said that “Most staff at DFID have been trained in the social sciences, and it is widely felt that their knowledge of the natural sciences and technology is lacking”, whilst Professor Rothschild, Chair of the Renewable Natural Resources Research Strategy (RNRRS) Independent Programme Advisory Committees, told us that “the number of technical people has been greatly reduced”.^{85,86} The Geological Society of London also asserted that “DFID’s loss of interest in geoscience” was in part due to “DFID policy being largely driven by social scientists, environmentalists and economists with little sympathy for scientific research, however applied and practical it might be”.⁸⁷ Mr Spray, Head of the Central Research Department in DFID, confirmed that DFID had “increased the number of social scientists faster than the number of natural scientists recently” but insisted that “the absolute number of professionally qualified staff has been going up”.^{88,89} DFID was nonetheless unable to provide us with any data on the current or historical numbers of natural scientists in its employment. This is in part due to the fact that DFID categorises its advisory staff using terms such as Health and Population, Social Development, Rural Livelihoods etc, rather than by their professional qualification or discipline (see Table 2). Furthermore, DFID does not monitor whether its staff, irrespective of their professional discipline, have a background in research.

53. It should be noted that criticism of DFID’s scientific expertise was focussed on the proportion of staff with backgrounds in science and research rather than the quality of those staff. Indeed, Dr Cotton, Director of WELL, whilst critical of the low numbers of engineering advisers in DFID, said of the engineering advisers that he had encountered: “I believe them to be highly competent and very good [...] they have a very good understanding of development”.⁹⁰

82 Ev 289, para 5

83 Q 20

84 Q 20

85 Ev 119

86 Q 167

87 Ev 157

88 Q 10

89 Q 17

90 Q 402

Table 2: Advisory Staff in DFID

Discipline	Total number	Number based overseas
Health & Population	66	47
Social Development	58	32
Rural Livelihoods	62	41
Environment	23	8
Infrastructure & Urban	46	31
Economics	83	36
Enterprise	27	16
Education	41	28
Governance	45	27
Statistics	23	9

Source: DFID

54. It is hard to understand how DFID can be content that it has adequate expertise in science and research when it is not monitoring the numbers of staff who have relevant qualifications or a background in research. This must change. We believe that the current levels of scientific and technical expertise are insufficient to ensure that DFID can behave as an intelligent customer for science, technology and research. There is a pressing need for DFID to increase the number of in-house staff with a research background, particularly in the natural sciences.

55. We asked DFID how it decides what advice should be provided in-house and what should be sought externally. DFID told us that “technical issues that need a high level technical decision, for example in health, will be taken by DFID’s relevant Head of Profession”, whilst if “the issue were a key policy issue, it would be given to the relevant Policy Division team, or if no team exists, a new Policy team may be established to take the agenda forward”.⁹¹ DFID also said that “an external technical specialist may be contracted” for provision of more detailed support, in which case “the relevant DFID adviser, either in country offices or in HQ locations would usually be the person to take this decision. He or she would refer to the Head of Profession, where necessary, to identify the appropriate external agency or institution to approach”.⁹²

56. We heard that DFID was failing to utilise a number of obvious sources of scientific advice. The Royal Society said that “Although IGBP [International Geosphere–Biosphere Programme] research aims to underpin and influence international policies and decisions, the IGBP National Committee is not aware of any advice being sought by DFID”, while the Intra-governmental Group on Geographic Information told us: “The Director General and

91 Ev 372

92 Ibid

Chief Executive Officer of Ordnance Survey of Great Britain is the Adviser to Government on matters relating to GI [Geographic Information]. Requests for advice from DFID are always welcome but are received extremely rarely averaging less than one request per year. It is understood that low use is made of similar advisers in NERC [the Natural Environment Research Council]”.^{93,94} The Natural History Museum also reported that it was “not currently being actively used by DFID as a source of scientific or other advice”.⁹⁵ **We conclude that DFID is failing to utilise key sources of scientific and technological knowledge. DFID needs to have a critical mass of in-house expertise to identify its own needs for science, technology and research and the most appropriate sources of such advice. DFID’s increasing dependence on outsourcing of research management and the erosion of the cadre of scientific and technical staff mean that it is no longer in a good position to do so.**

57. In addition to increasing the numbers of permanent scientific and technically-qualified staff, Defra’s Central Science Laboratory told us that its experience with other Government departments suggested that “DFID could access more scientific advice by seconding scientists for short periods into DFID for specific tasks”.⁹⁶ Macaulay Research Consultancy Services Ltd also commented that “secondment of scientists to DFID would help scientists appreciate the needs of [those who formulate policy] and thus, in the longer term, lead to more relevant research and more effective communication of research findings”.⁹⁷ **DFID would derive much benefit from the secondment of scientists into the Department and we recommend that it takes active steps to implement this practice, particularly in existing areas of weakness.**

Chief Scientific Adviser

58. Numerous memoranda submitted to us in evidence made reference to the detrimental effect of the lack of a Chief Scientific Adviser (CSA) in DFID on its treatment of science and technology. The Government’s science and innovation strategy, *Investing in Innovation*, published in 2002, stated that all departments that use or commission significant amounts of research should have a Chief Scientific Adviser (CSA).⁹⁸ In fact, DFID has the third highest expenditure on R&D of all Government departments and various departments with lower R&D expenditures have already appointed CSAs.⁹⁹ In April 2004, Sir David King, the Government’s Chief Scientific Adviser, confirmed that he believed “that DFID should have, as many other Government departments now do have, its own Chief Scientific Adviser” and remarked that it was “unfortunate” that DFID had not yet appointed a CSA.^{100,101} The Secretary of State announced at the end of March 2004

93 Ev 284

94 Ev 171, para 11

95 Ev 281, para 10

96 Ev 140, para 3.1

97 Ev 218

98 HM Treasury, *Investing in Innovation: A Strategy for Science, Engineering and Technology*, July 2002

99 If research undertaken by the NHS is excluded from the Department of Health’s expenditure; figures are for absolute expenditure; Science, Engineering and Technology statistics, Office of Science and Technology.

100 Q 243

101 Q 249

that DFID would “appoint two experienced scientists – one recommended by the Government’s Chief Scientist – to conduct a review of scientific advice in DFID and the case for appointing a Chief Scientist”.¹⁰²

59. In the final evidence session of this inquiry, the Secretary of State told us that, as a result of the review, DFID had decided to appoint a Chief Scientific Adviser. Mr Benn also told us: “I would like to take the opportunity today to announce the fact that we intend to do so because I think the Committee deserves a lot of credit, alongside others, for the fact that I have now taken this decision”.¹⁰³ When questioned on why it had taken so long for DFID to reach this decision, the Secretary of State said “I think the honest answer is because we thought we had ways of dealing with science that meant that we could do without the post and we have come to the conclusion that actually that is not the case”.¹⁰⁴ **We welcome the announcement that DFID has finally decided to appoint a Chief Scientific Adviser and are pleased that our work helped DFID to reach its decision. However, the review to establish a need for a Chief Scientific Adviser in DFID was superfluous in view of the stated Government policy. It also came far too late in the day. The fact that it took so long for DFID to accept the need for a Chief Scientific Adviser was in itself indicative of a weak scientific culture in DFID.**

60. It is regrettable that DFID only decided to appoint a CSA after developing the new Research Strategy and restructuring the Policy Division for the second time in just over a year. Both of these processes would have benefited from input from a DFID CSA. When we put this point to the Secretary of State, he admitted to us that “with hindsight, maybe the timing has not been ideal”.¹⁰⁵ The timing of DFID’s decision to appoint a Chief Scientific Adviser illustrates a lack of strategic thinking and suggests that DFID has been operating in reactive mode during the course of this inquiry. Defensive action to stave off criticism is not a good foundation for policy making.

61. We understand that DFID will liaise with Sir David King on the job description and appointment of the CSA. Sir David told us that the role of a DFID CSA should be to “develop a coherent policy for international development based on an understanding of what science, engineering and technology could bring to that policy; and to develop a research policy to back it up”.¹⁰⁶ As well as ensuring that DFID policy is based on good science, we believe that a DFID CSA would act as a high level representative for science and technology for international development across Government, thereby enabling DFID to engage better with the cross-Government science and technology machinery. Sir David also said that “within DFID there are a large number of social scientists, and especially economists currently [...] What we need to balance this number of people in those sciences is a very senior person at the highest level, who would be drawn from what we would describe as the hard sciences”.¹⁰⁷ DFID already has a Chief Economist and Chief

102 HC Deb, 30 March 2004, col 1327W

103 Q 507

104 Q 514

105 Q 518

106 Q 281

107 Q 244

Statistician. **The DFID Chief Scientific Adviser should be a natural scientist with extensive development expertise.**

62. The Biosciences Federation is typical of the scientific community in the UK in welcoming DFID's decision to appoint a CSA: "We are delighted that a Chief Scientific Adviser (CSA) is to be appointed at DFID. A CSA, supported by a dedicated scientific team, will help to ensure that good science is used in policy making and that the presentation of science is not biased to suit policy objectives. A CSA will also help to promote transparency and develop public confidence in the scientific base on which DFID policy is formed".¹⁰⁸ We agree and will follow the appointment with great interest. However, **in order for a DFID Chief Scientific Adviser to be effective, the position should be full time and a team of scientifically-literate support staff will be essential. If the Chief Scientific Adviser is not granted the necessary resources, or is not given a central role with seniority commensurate with the highest ranking Chief Scientific Advisers in other Departments, DFID's decision to appoint a Chief Scientific Adviser will amount to little more than tokenism.**

63. We welcome DFID's decision to appoint a Policy Advisory Group to advise the Director General, Policy and International, on key policy issues and to provide a challenge function to the work of the Department. The Group will include two prominent international academics, an eminent scientist, representatives of the World Bank, British Overseas Aid Group and an international research funder, as well as at least three African/Asian users of the outputs of policy work from DFID. We are also pleased that the Government's CSA has agreed to be the science representative on the Group.

Policy Division

64. DFID has undergone successive restructuring exercises in its Policy Division, with the first taking effect in April 2003 and the most recent in May 2004. The first reorganisation involved replacing the 12 advisory departments with five policy groups: Aid Effectiveness; Growth; Service Delivery; Working in Difficult Environments and Future Challenges. In addition, several central teams were established, including Research, the Communications Unit, and the Office of Chief Advisers, which was charged with providing specialist support to the Policy Division. An independent evaluation of the process of this reorganisation, commissioned by DFID itself, concluded that there had been some significant achievements, such as improved cross-disciplinary working.¹⁰⁹ **We support DFID's decision to adopt a cross-disciplinary approach within the Policy Division to address specific problems in developing countries. However, a significant proportion of DFID's partners, including many developing country governments, operate on a sectoral basis. DFID therefore needs to ensure that its partners have information about, and access to, the relevant contact points within the cross-disciplinary teams.**

65. The evaluation report also recorded a "significant and very widely held concern across DFID, about failures in the reorganisation process used to achieve the changes, and a

¹⁰⁸ Biosciences Federation, *DFID Research Funding Framework 2005–7: A response from the Biosciences Federation to the Department for International Development*, July 2004

¹⁰⁹ Nigel Thornton and Sarah del Tufo, *Process of the Reorganisation of DFID Policy Division*, Evaluation Trust, December 2003

number of issues and wider impacts across DFID that remain to be fully resolved”.¹¹⁰ The report indicated a disconcertingly high level of anger and frustration amongst DFID employees over the way in which the reorganisation was carried out. Furthermore the report warned of the “dangers with any reorganisation that wisdom and experience is lost”, noting that “Efforts need to be put into collating knowledge about particular topics and issues, but also about processes. Some form of stock-taking of what has already been learned about working in partnership could provide an extremely useful basis for future work”.¹¹¹ **We are alarmed by the picture presented by the evaluation report of the Policy Division reorganisation and the evident weaknesses in DFID’s attempts at change management.**¹¹² **In view of the pace of change within the department, we sincerely hope that DFID has learned the lessons of this traumatic reorganisation.**

66. Following the 2003 reorganisation, a further change to the management arrangements in the Policy Division was made, coming into effect in May 2004. As a result of this restructuring exercise, the content of the Policy Groups was adjusted to enable all core policy areas to be covered, resulting in groups for Development Effectiveness, Governance and Social Development, Growth and Investment, Human Development and Sustainable Development. More importantly, the Chief Adviser and Deputy Director positions were abolished and instead Heads of Policy Groups were appointed, supported by Heads of Profession. The posts of Chief Economist and Chief Statistician were retained, but DFID told us emphatically that the abolition of the other Chief Adviser positions did not represent a downgrading of these posts. In fact, comparison of the pay bands for the new Heads of Group and Heads of Profession posts with the former Chief Adviser posts demonstrates that a downgrading of the Chief Adviser positions has indeed occurred.¹¹³ It also appears that their remits have been significantly altered, so that they concentrate more on maintaining standards in their professional group than on provision of technical advice. Chief Advisers were previously considered to be the main sources of scientific and technical expertise in DFID and we heard that the position was also valued for the fact that Chief Advisers tended to stay in post for longer than most civil servants, thereby reinforcing the corporate memory. **The downgrading of the Chief Adviser positions has caused consternation in the development sciences community. We do not understand the rationale for this decision and take it as further evidence of DFID’s urgent need for a Chief Scientific Adviser. We consider that it was ill-advised for DFID to undertake this additional reorganisation of the Policy Division prior to the completion of the review to determine whether to appoint a Chief Scientific Adviser and consideration of what staff would be required to support him or her.**

67. The May 2004 reorganisation of the Policy Division additionally resulted in the transfer of the Central Research Department from the Policy Division to the Corporate Performance and Knowledge Sharing Division, as well as splitting the staff between London and East Kilbride. By way of explanation for the former, DFID told us that “the Director-General for Knowledge Sharing and Corporate Performance has freed up additional time to give research the high-level attention that Ministers and the

110 Ibid

111 Ibid

112 Ibid

113 Ev 376, 377

Management Board feel it deserves”.¹¹⁴ **We can only surmise that research has not received the attention it merits in DFID in the past. We hope that this new arrangement will indeed be an improvement. DFID will also need to take care that separation of the Policy Division and Central Research Department does not impede the interaction between research and policy-making in DFID.**

Country Offices

68. In 2001–02, DFID Country Offices spent £69 million on research. However, the London School of Hygiene and Tropical Medicine told us that “Many country level DFID staff have no training in research” and that an “induction programme and/or continuing professional development programmes delivered through distance learning [...] could sensitize staff to the contribution that research can make to development and [...] assist them to critically appraise research evidence and promote its use where appropriate”.¹¹⁵ CAB International was also concerned that the “extent of investment in research and the promotion of innovation in DFID’s country level programmes has tended to vary, seemingly dependent on the diverse and evolving priorities and perceptions of the advisers and programmes concerned, rather than any overall vision”.¹¹⁶ CAB International believed this was likely to be due to “the changing composition of advisers over the years, the short-term nature of their placements and the reduction of in-house scientific capability within DFID”.¹¹⁷

69. DFID Country Offices play a key role in assisting developing countries to draft their poverty reduction strategies. But several memoranda express doubts over the ability of the Country Offices to provide adequate advice in the areas of science and technology. Professor Julian Evans commented that “With a very few exceptions, the DFID in-country offices are not staffed or charged with giving special attention to [...] weak national research capabilities. Nor do they seem to have a role in suggesting redirection of rather academic national research programmes towards solution of the urgent problems faced by the poor”.¹¹⁸ In addition, RCUK suggested that “DFID could more effectively and profoundly embed a consideration of research needs into its operational systems and procedures. For example, by ensuring that its Country Strategies routinely consider what gaps there are in research if poverty objectives are to be met”.¹¹⁹ CAB International also told us that lack of interest of Country Offices in bringing in external technical innovation and research processes meant that there would “be no outlet for work in this area even where strong local demand exists in the country itself” and commented that “CABI’s contracted advisory service to DFID has similarly experienced little direct demand from advisers for technical support even though demand exists within the national system”.¹²⁰

114 Ev 371

115 Ev 133

116 Ev 166, para 23

117 Ibid

118 Ev 255

119 Ev 266, para 18

120 Ev 166, para 23

70. During this inquiry, we gained first hand experience of DFID’s overseas aid projects, notably in Malawi, and we were thoroughly impressed by their dedication and professionalism and the esteem in which their efforts were held. We asked DFID, however, about the numbers of technically or scientifically qualified staff in Country Offices. As mentioned above, we were disappointed to learn that DFID does not hold any central records of the qualifications of its Country Office staff. DFID told us that it was “working towards a system that will capture these from next year”.¹²¹ **We are pleased that DFID now realises the importance of monitoring the scientific and technical qualifications of its Country Office staff. It is not before time: these staff play a central role in the Poverty Reduction Strategy process and the commissioning of country-specific research and policy analysis. It is a major failing that DFID has not put in place proper systems to ensure that Country Offices are staffed by people with the necessary background and expertise to support developing countries effectively, particularly in the light of the move towards the Poverty Reduction Strategy Paper approach. We recommend that DFID establish minimum levels for the numbers of staff with appropriate scientific and technical qualifications in each country or, where appropriate, region.**

Knowledge management

71. The capacity of Country Offices to provide advice and support to developing countries on issues concerning science and technology is further undermined by the lack of connection between DFID’s Country Offices and Central Research Department. Dr Steven Belmain from NRI was one of many witnesses who drew attention to the weakness of this linkage: “I believe that DFID is aware that their country-based programme offices have not always made good use of the DFID centrally funded research programmes. In my own overseas experience, I have often found it difficult to schedule meetings with country-based DFID staff, to encourage their attendance at stakeholder workshops generated by research projects and to generally inform them of active research endeavours in country and how this research could feed into DFID’s bilateral efforts at the country level”.¹²² The fact that the primary aim of DFID’s centrally-funded research is to contribute to the global pool of knowledge rather than to underpin DFID policy is an aggravating factor here. **We appreciate that DFID considers the research that it commissions to be for the global good, but it should be axiomatic that such research will also be utilised for the development and refinement of DFID’s own policies.**

72. The National Audit Office report on DFID’s funding for HIV/AIDS also identified various weaknesses in DFID’s approach to knowledge acquisition and sharing.¹²³ For example, “In framing their programmes country teams recognised the importance of learning lessons from elsewhere but they felt they lacked support in identifying relevant information amongst the large amount of technical data available”.¹²⁴ In addition, the report highlighted the fact that “research results [from DFID Knowledge Programmes] could have been better disseminated, in particular to those DFID staff working in-country. No regular communication channels exist and some Programmes have experienced

121 Ev 372

122 Ev 119

123 HC (2003–04) 664

124 Ibid

problems in engaging with DFID teams”.¹²⁵ The report recommended that DFID take steps “to ensure that its programmes adequately reflect current knowledge”, for example by ensuring “that mechanisms are in place to identify and disseminate key research and knowledge in the field to country teams”.¹²⁶ The report also recommended “better use of DFID’s intranet to summarise emerging research, links to sources of key information and lessons learnt on the management of HIV/AIDS interventions”.¹²⁷

73. DFID sponsors “id21”, a website hosted by the Institute of Development Studies for the communication in lay terms of UK–resourced international development research results in the areas of Society and Economy, Health, Education and Urban Poverty. Nevertheless, we were told by several witnesses that DFID needed to improve its data archive management. Dr Newton, for example, observed that “There is no central repository of information generated by DFID research and it is even difficult to ascertain which areas of research have been supported in the past”,¹²⁸ whilst the Oxford Forestry Institute stated that “DFID should add value to its huge investment in research to date by supporting the maintenance and access to data archive management systems”.¹²⁹ DFID told us that it “has increased its investment in the communication of research” with the specific aim of “increasing access to the global knowledge pool by the end users of research”.¹³⁰ In addition, DFID told us that it had “established an Information and Communication for Development (ICD) Policy Team in its Information Division that analyses best practice in communication” and was “developing a research portal that will adopt international data–sharing standards and enable DFID–funded research to be widely accessible”.¹³¹

74. DFID needs to provide greater technical support to its Country Offices. There is an increasing volume of research, and thus knowledge, pertaining to international development. DFID needs to play an active role in managing this knowledge to enable its employees, including country–based staff, to assimilate information of relevance to their work. Increased access to information does not, however, equate with increased understanding; DFID needs to help staff to mine the available data and extract and interpret the information of relevance to them. We understand that DFID funds research to contribute to the global pool of knowledge rather than to meet the needs of the department, but **DFID and its clients are not getting the most out of the research it commissions due to the poor links between the Central Research Department and the Country Offices. We recommend that the Central Research Department work more closely with the Heads of Profession and regional departments to ensure that Country Offices receive the information they require, in a readily digestible form.** We also note that many other donors are facing similar challenges and DFID should liaise with its counterparts in other countries to minimise unnecessary duplication of effort.

125 Ibid

126 Ibid

127 Ibid

128 Ev 121, para 1

129 Ev 132

130 Ev 373

131 Ibid

75. We welcome DFID's increased interest and investment in research and the decision to increase the accessibility of its research findings. DFID should make sure that data and reports from research it has commissioned over the past five, and preferably ten, years can be readily accessed via its new portal. It is understood that some researchers are unwilling to have the final reports of their DFID funded research placed on the internet as this may prevent the authors from publishing this work in commercially-funded peer review journals. It is clearly important for DFID to make public its position on this issue. Our report on scientific publications commended the fact that the Medical Research Council stated that "it expects all MRC-funded researchers 'to make their research data available in a timely and responsible manner to the scientific community for subsequent research with as few restrictions as possible'".¹³² **We recommend that DFID stipulates in its research contracts that researchers must make their research results, including any large data sets collected, publicly available within a reasonable period following completion of the work.**

76. We also stated in our Report on scientific publications that "The digitisation of journals has the potential to greatly increase access to research findings for researchers in the developing world".¹³³ We further commented that we believed that the author-pays (open access) model of scientific publishing would benefit developing country researchers: "The author-pays publishing model would be extremely advantageous to researchers in developing countries, enabling them to keep abreast of research conducted elsewhere. Financially, author charges would be less burdensome to researchers in the developing world than current subscription rates".¹³⁴ We are aware that DFID currently provides funds to support schemes such as the International Network for the Availability of Scientific Publications. Should the author-pays model become a more prevalent mode of publishing, DFID may need to consider adapting or extending such support to assist developing country researchers in meeting the costs of publication of articles. The importance of access to scientific journals is discussed further in paragraph 133.

132 Science and Technology Committee, Tenth Report of Session 2003–04, *Scientific Publications: Free for all?*, HC 399–I

133 Ibid

134 Ibid

5 DFID Approach to Science, Technology and Research

Lack of scientific culture

77. During the course of this inquiry, we repeatedly heard complaints about the lack of scientific culture within DFID. Dr Brown from the Oxford Forestry Institute said his perception was that DFID staff “under-value science” and told us that whilst he supported DFID’s “change in emphasis from purely technical solutions to solutions which encompass socioeconomic and policy dimensions and also promote the dissemination of research results in an effective way”, he believed that DFID had “moved to a point where there is far too great an emphasis on that”.¹³⁵ Sir David King also told us that the most important feature in a DFID science and innovation strategy “would be to take science out of the box”, explaining that “Science impacts on all aspects of our modern societies [...] in terms of poverty eradication it is absolutely key”.¹³⁶ It is noteworthy that when we tried to discuss this point with the Secretary of State, he told us that he was “grappling with the concept of taking science out of the box”.¹³⁷ It is also regrettable, although perhaps not surprising, that the word “science” appears only twice in DFID’s Departmental Report 2004.¹³⁸ Professor Leach additionally highlighted the need for DFID to “mainstream” its approach to science, recommending that DFID “draw the lessons from [...] institution building in other areas of development into the science and technology field, and equally look at where science and technology provide key entry points for dealing with the broader problems of poverty”.¹³⁹ We agree wholeheartedly. **We are not persuaded that DFID has fully grasped the cross-cutting nature of science, and the breadth of the contribution that it can make to meeting international development objectives.** See Figure 2 and paragraphs 15 and 79–81 for examples.

78. Another strong indication of the fact that DFID does not identify itself as a department that “does science” was provided by DFID’s lack of input into the UK *Science and Innovation Investment Framework 2004–2014*. DFID admitted to us that although all Government departments were asked to contribute to the ten-year strategy, DFID only “sent them the draft [DFID] Research Strategy and said, “These are the kinds of issues about which we are concerned”, without even submitting a specific request for funding.¹⁴⁰ **The ten-year investment framework represented one of the most significant developments in UK science for several years. The fact that DFID gave only a cursory contribution reinforces the idea that DFID does not consider itself to be a department that has a significant involvement in science and research, and further highlights the need for DFID to have a high level staff member responsible for cross-Government liaison on science, technology, innovation and research. By failing to engage properly**

135 Q135

136 Q 288

137 Q 540

138 Excluding Annexes

139 Q 71

140 Q 550

in these discussions, DFID may have missed an important opportunity to make the case for increased funding for science, technology and research in DFID. This would, for example, have been an ideal opportunity for DFID to argue for a major boost in funding to support science and technology capacity building in developing countries. The importance of such capacity building is addressed in Chapter 6.

79. During this inquiry we sometimes encountered a conflict between proponents of social and natural sciences, or between those advocating greater investment in science and those who believed that improving systems of governance in developing countries should take precedence. These are artificial dichotomies: natural and social science both have key roles to play, alongside governance considerations. The Institute of Water and Environment and the National Soils Resources Institute called for DFID to adopt “an integrated approach [...] fusing the best social science and natural science with engineering. Knowledge of natural resources (land, water, vegetation, climate) and of social demands for resource use logically should precede policy and allocation decisions, law and institutions, with engineering interventions following from the preceding areas of science and policy-making. For example, the sustainable use of water for food, people, industry and environment relies on a clear understanding of the extent and current use of water resources, but the capacity to monitor these resources and to inform planning and regulation is negligible in many countries”.¹⁴¹ We endorse this assessment.

80. Various witnesses have suggested that there is a view amongst some members of the international development community that most of the science and technology required to address problems in developing countries is now available and it is just a question of applying it, or granting access to it. Professor Martin Hodnett, for example, commented that he had “heard the case against research voiced in the following terms (by a respected economist) – ‘don’t we know enough already? Should we not be just applying what we already know?’”.¹⁴² We saw for ourselves in Malawi the central importance of applied research and were impressed, for example, by some of the operational research that DFID was sponsoring to improve healthcare delivery there. However, we do not accept that all the requisite scientific and technical knowledge is in existence and merely needs to be applied to the specific contexts and challenges encountered by developing countries. Nor do we accept that there is no role for basic science or blues skies research in meeting the needs of developing countries. Dr Cotton, Director of WELL, noted that in some areas “in technology terms it is the quantum leap stuff which has real application to development; for example, mobile telephony and global positioning”, describing how the latter—“a very high technology approach”—has been applied to locating rural water supplies.¹⁴³ We also believe that pockets of excellence in basic science in developing countries can contribute to inspiring their young people to consider careers in science and technology. **We reiterate that natural and social science both have roles to play in international development, as do basic, applied and operational research.**

81. The Royal Society also used satellite technology as an example of DFID’s unsatisfactory track record in realising the potential of science and technology: “satellite-based

141 Ev 245, para 10

142 Ev 123

143 Q 404

monitoring of rainfall is the only feasible way of obtaining an overview of the large-scale rainfall pattern in Africa. Governments and NGOs could use such information to feed into flood and famine warning systems and crop yield modelling. However little emphasis is placed on this research, as it is not of direct use to individual farmers”.¹⁴⁴ In addition, Dr Robin Matthews expressed frustration over the “disappointingly negative attitude within DFID to modelling”,¹⁴⁵ the potential benefits of which were explained by Joachim Voss of the International Centre for Tropical Agriculture: “Often, it is difficult for decision makers to anticipate the outcomes of their decisions about natural resources, like soils and biodiversity. Moreover, decisions made by one group may have unexpected consequences for another. Modelling research can better enable individuals or groups to foresee the effects of their decisions and actions”.¹⁴⁶ DFID is failing to exploit fully the vast potential of the application of science and technology to development.

82. We also heard of examples of good practice within existing DFID research programmes and, as mentioned above, saw some of these ourselves in Malawi (e.g. see Figure 2). More than one witness identified some of the RNRRS programmes as exemplars of best practice, but this was sometimes considered to be as a result of the efforts of the individual programme managers rather than DFID policy.¹⁴⁷ Dr Cotton, Director of WELL, also told us “There has been a very innovative Knowledge and Research Programme in what used to be the engineering division in DFID. I would say the issue is the prominence that gets within DFID as an organisation and the way the outcomes of the work do or do not get fed through to country assistance programmes”.¹⁴⁸ **We congratulate DFID for having sponsored some excellent research programmes that have made worthwhile contributions to poverty reduction. Regrettably, DFID has not always recognised the value of the work that it sponsors. It is impossible for DFID to gain the full benefit of the research that it commissions until there is widespread appreciation amongst its staff of the true worth of science and research for international development.**

The impact of research on policy

83. Increasingly, the idea that research can be delivered unchanged to end users (the so-called “linear model”) is being viewed as outdated and inaccurate. Instead, it is now recognised that research needs to be considered in the context of a wider process of innovation, whereby involvement of policy makers, intermediary organisations and end users throughout the research activity results in better targeted results that are taken up far more efficiently, thereby enhancing the impact of the research. However, the November 2003 report commissioned by DFID, *Engaging Policy Shapers in the Research Process*, observed that DFID had not yet taken on board this approach: “almost everyone recognised there was too big a gap between DFID’s policy staff and researchers. Advisers

144 Ev 284

145 Ev 143, para 8

146 Ev 229, para 66

147 e.g. Ev 212, para 67

148 Q 385

need to be engaged in the research process for them to have a sense of ownership and to see the relevance of particular findings”.¹⁴⁹

84. DFID’s draft Research Strategy alludes to the fact that “The process of take-up of research is not linear” and notes that DFID has been funding a major research programme, RAPID, to improve the impact of research on policy.¹⁵⁰ DFID now has an excellent opportunity to demonstrate its own ability to incorporate the results of research into policy by modifying its approach to research in the light of the findings of the RAPID research programme. We hope that this will lead to an improvement in the impact of the research that DFID undertakes.

Evidence-based policy making

85. DFID has a Public Service Agreement target to develop evidence-based, innovative approaches to international development and all Government departments have an obligation to undertake evidence-based policy making. However, the Institute of Water and Environment and the National Soils Resources Institute were sceptical of DFID’s ability to adopt such an approach, telling us that there was a need “to clarify the role of science as a basis for informed policy design and implementation” for the benefit of DFID.¹⁵¹ Professor Julian Evans echoed this view: “It [DFID] should also be able to back its philosophy of using an ‘evidence-based’ approach with a real commitment and procedures to make use of the research which it funds”.¹⁵²

86. DFID told us that it “assesses the impact or potential impact of its research on poverty reduction through formal external evaluation”.¹⁵³ Yet much of the evidence received criticised DFID for failing to invest sufficiently in evaluating and learning lessons from past projects and research experience. The Appropriate Development Panel of the Institution of Civil Engineers commented that it was “not aware of any evidence that research projects have been analysed to establish what has been successful in making a valuable contribution to poverty reduction, where extended research would pay dividends and, equally, what research has been fruitless and should not be repeated. Indeed there is no evidence of an effort to collate examples of good practice”.¹⁵⁴ The Chairs of the independent RNRRS Programme Advisory Committees also told us there had “been little effort to review lessons learned, and projects that were less successful or unsuccessful have not been analysed”.¹⁵⁵ Furthermore, the Surr Report identified evaluation as an area of weakness in DFID, and we note that DFID was unable to provide data on the percentage of the research budget spent on evaluation in response to a Parliamentary Question.¹⁵⁶ **We conclude that DFID has failed to devote sufficient attention to evaluation of research. DFID must ensure that its past deficiencies in evaluation of research are rectified. We welcome the fact that DFID**

149 Janet Lewis, *Engaging Policy Shapers in the Research Process*, November 2003

150 DFID, *DFID Research Funding Framework 2005–07*, May 2004

151 Ev 244

152 Ev 254

153 Ev 372

154 Ev 144

155 Ev 175, para 22

156 HC Deb, 24 June 2003, col 687W

is strengthening its evaluation department and is now undertaking evaluations of two major research programmes in renewable natural resources and engineering,¹⁵⁷ and also note that DFID's recent publications, such as the new HIV/AIDS Strategy, *Taking Action*, place greater emphasis on evaluation. However, resolving this problem will require a culture change within DFID as well as good intentions and the increased resources already at its disposal. The current lack of scientific culture in DFID is discussed in paragraph 77.

Funding international research organisations—the case of CGIAR

87. One example of a DFID policy development that lacks a clear genesis in specific evidence is provided by DFID's decision to increase its investment in the Consultative Group on International Agricultural Research (CGIAR). The CGIAR is a global partnership that oversees the work of 16 international research centres, with the aim of mobilising agricultural science to reduce poverty, promote agricultural growth and protect the environment. The Natural Resources Institute was not alone in raising questions about DFID's investment in the CGIAR, telling us that it was "possible that at least some of the same developmental outputs could be derived more cheaply and efficiently from the 'highly reformed' UK institutions at its disposal working with developing country partners".¹⁵⁸ Professor David Taylor, Centre for Tropical Veterinary Medicine, also questioned the wisdom of the UK's contribution to the CGIAR: "it must be argued that the UK's investment in the CGIAR would be better spent on: a, reinforcing direct support for UK scientists through competitive grant schemes; b, support for regional and national agencies in developing countries including MSc and PhD training; and c, to continue and expand the support for the special collaborative programmes of the European Union".¹⁵⁹ An independent evaluation of the CGIAR, published after DFID's decision to increase funding, acknowledged that there had been "serious concerns about the continuing relevance and developmental cost-effectiveness of the CGIAR system".¹⁶⁰

88. In the light of these concerns, we asked DFID in June 2004 to provide the evidence on which the decision to increase its contribution to the CGIAR from £10 to £20 million per annum was based. The only explanation that DFID gave us was that "Additional support for the CGIAR recognises that it has increased its focus on poverty and that UK action might encourage other members of the international community to follow suit".¹⁶¹ Moreover, despite our request, DFID did not supply us with any indication that formal assessment of the relative merits of this investment, as opposed to alternative funding routes for agricultural research, had been undertaken. We therefore assume that this decision was made without a thorough evaluation, in direct contravention of DFID's stated commitment to evidence-based policy making. **It is not for us to form a judgement on whether or not DFID was right to increase its investment in the Consultative Group on International Agricultural Research from £10 to £20 million per annum. However, we**

157 See paragraph 94

158 Ev 210, para 54

159 Ev 243, para 23

160 Keith A. Bezanson, Sunita Narain and Gerhard Prante, *Independent Evaluation of the Partnership Committees of the CGIAR*, April 2004

161 Ev 373

are surprised and disappointed by DFID's inability to provide concrete evidence for the basis of this decision. It is unacceptable for DFID to make an investment of this scale without being able to provide a considered justification.

Research Strategy

Consultation process

89. The draft DFID research funding framework 2005–07 (referred to as the “Research Strategy”) was published on 11 May 2004.¹⁶² In preparation for the new Strategy, the Central Research Department commissioned five papers to provide background information and identify options to be considered in the new strategy, based around the recommendations of the Surr Report. These papers addressed the role of DFID in relation to the private sector, international research, national research, in-country research, and communication of research. DFID also commissioned Janet Lewis, formerly Research Director at the Joseph Rowntree Foundation, to prepare a paper entitled “Engaging Policy Shapers in the Research Process”.¹⁶³ In addition to issuing a public consultation, DFID invited relevant bodies to convene a series of workshops in the UK on particular themes and suggest researchable ideas for the new DFID Research Strategy. The workshops covered three themes: social and political change (hosted by the Development Studies Association); applied technologies to improve livelihoods (hosted by the Tropical Agriculture Association and Appropriate Development Panel of the Institution of Civil Engineers); and health and well-being (hosted by the Royal Society for Tropical Medicine and Hygiene).

90. The resulting proposals were reviewed by DFID advisers and senior staff, who assessed them on the basis of criteria relating to their potential contribution to the MDGs and long-term poverty reduction, how amenable the topic was to research, whether other donors were already providing sufficient funding, and whether DFID had a comparative advantage as a funder. The full list of topic suggestions generated was retained to inform subsequent scoping of research topics and the resulting Research Strategy was sent for comment to a small number of peer organisations, including OST, prior to publication.

91. There was considerable disquiet over DFID's approach to the development of the Research Strategy. Dr Nick Brown from the Oxford Forestry Institute told us prior to publication of the Strategy that “there is alarm that this whole process of the review of the Research Strategy is taking place behind closed doors with very little consultation with many of the actors who have enormous experience”.¹⁶⁴ He then went on to describe the “sense of outrage that [...] the only way in which we have been consulted in this process was to ask for our big ideas”.¹⁶⁵ Rothamsted Research also described its “considerable concern that DFID, despite the consultations that have taken place, is not fully utilising the

162 DFID published the final version of its Research Funding Framework 2005–2007 (referred to as the “Research Strategy”) in September 2004. The points made in this Report pertaining to the draft Research Strategy apply equally to the final Research Strategy.

163 Janet Lewis, *Engaging Policy Shapers in the Research Process*, November 2003

164 Q 164

165 Q 167

UK science base with much relevant experience”.¹⁶⁶ In addition, Professor Lawton, Chief Executive of the Natural Environment Research Council told us: “I don’t think they [DFID] contacted any of the Research Councils proactively” and said that he had only known about the consultation for the Research Strategy because he had “happened to blunder across it”.¹⁶⁷ **Whilst we realise that DFID’s decision to open the draft Research Strategy for consultation gave the opportunity for those who so wished to comment on it, we are concerned that the original consultation process caused so much disquiet amongst the development sciences community. Irrespective of whether the lack of consultation affected the quality of the draft Research Strategy, by creating the impression that it was not interested in utilising the extensive experience of leading development scientists in the UK, DFID has damaged its relationship with the UK research base.**

92. The fact that the new Research Strategy was developed with minimal consultation with the end users in developing countries is even more worrying. Dr Andrew Dorward from the Centre for Development and Poverty Reduction at Imperial College, for example, remarked that “too little attention appears to have been given to mechanisms and processes for identifying research priorities of those who will use research outputs [...] Given DFID’s strong commitment to research relevance and uptake, this is very surprising”.¹⁶⁸ When questioned on this subject in oral evidence, Mark Lowcock, Director General, Corporate Performance and Knowledge Sharing in DFID, acknowledged this area of weakness: “We do want to strengthen our links and our responsiveness to what developing countries are saying [...] We need to work harder at hearing the voices of developing countries”.¹⁶⁹ When we asked DFID how they proposed to achieve this, DFID told us that its “research planning process will consult widely with developing country partners, and these views will be fed into the Funders’ Forum by DFID”.¹⁷⁰ This is not a satisfactory response to a vital question. We put it to DFID that the Country Offices would have provided an obvious channel through which to obtain the views of developing countries. We were shocked by Mr Lowcock’s response: “I think that is an idea we can look at”, which implied that DFID had not explored that possibility in the past.¹⁷¹ **It is highly regrettable that DFID appears to have given so little attention to gaining developing country input to the Research Strategy. DFID’s failure to incorporate the views of developing countries into the Strategy makes a mockery of its claim to follow a demand-led approach and calls into question the value of the Strategy.**

Future research topics

93. The draft Research Strategy states that approximately two-thirds of DFID’s centrally-funded research will be directed towards four major research themes: agricultural productivity in Africa; killer diseases; states that work in the interest of the poor; and climate change. In addition, the Strategy mentions 12 further areas in which DFID will

¹⁶⁶ Ev 153

¹⁶⁷ Q 204

¹⁶⁸ Ev 150

¹⁶⁹ Q 342

¹⁷⁰ Ev 373

¹⁷¹ Q 341

seek proposals for new extended research programmes starting in 2005.¹⁷² The Strategy explains that these were identified on the basis of the consultation, but there are some notable omissions, such as urbanisation and rural planning (including physical infrastructure), that were identified during the consultation workshops.¹⁷³ **DFID’s decision to focus research in a limited number of areas is sensible and we are broadly supportive of the priorities identified. However, we urge DFID to take into account the enabling role of engineering and technology in meeting the identified priorities.** For example, see Figure 2 and paragraphs 15 and 79–81.

94. The RNRRS and Engineering and Knowledge Programmes represent two of DFID’s largest research investments and it is surprising that DFID chose to develop the new Research Strategy before evaluations of these programmes had been conducted (we understand that these are both now being reviewed). The RNRRS Programme, which has been running since 1995, was actually due to terminate in 2005 but following public criticism by witnesses of that decision during the course of this inquiry it was granted a year’s extension. **It is a source of alarm that DFID did not seek to learn the lessons of its £200 million investment in the Renewable Natural Resources Research Strategy Programme prior to the development of a new Research Strategy. This is suggestive of poor planning and management. DFID’s decision to develop a new Research Strategy at this time, in the absence of key information and a DFID Chief Scientific Adviser, was imprudent.**

Wider approach to research

95. The Research Strategy states that DFID “will give more effort to building developing country research capacity, and to disseminating existing research ideas. We will look to work jointly with others, especially through further support to international initiatives, Public Private Partnerships, and a UK funders forum that will allow us to work more closely with other UK research councils”.¹⁷⁴ We welcome DFID’s increased emphasis on dissemination of research results and capacity building and discuss these in more depth in paragraphs 71–76 and Chapter 6, respectively. The Funders’ Forum is discussed in paragraph 168. The DFID Research Strategy additionally notes that “DFID’s research choices will also be informed by a horizon-scanning exercise across the whole of DFID – to identify research and policy agendas by looking 10–20 years ahead. This will help avoid the risk of having time horizons that are too short, and of missing longer-term opportunities and threats”.¹⁷⁵ **We agree that DFID would benefit from horizon scanning activities and encourage DFID to learn from the experience of other Government departments.** Defra, for example, has recently established a horizon scanning exercise that is widely considered to be a model of good practice.¹⁷⁶

172 DFID, *DFID Research Funding Framework 2005–07*, May 2004

173 Ibid

174 Ibid

175 Ibid

176 Defra defines horizon scanning as the systematic examination of potential threats, opportunities and likely future developments which are at the margins of current thinking and planning. Horizon scanning may explore novel and unexpected issues, as well as persistent problems or trends.

96. We endorse the view of the Biosciences Federation that the Research Strategy is “a welcome step towards the development of a UK strategy for development research”.¹⁷⁷ Nonetheless, we also note that the Research Strategy addresses only a limited aspect of DFID’s approach to science and technology. As the Intermediate Technology Development Group, an NGO, pointed out, DFID still “does not have a clearly articulated policy, strategy or position on science, technology and innovation”. **A high priority for DFID’s new Chief Scientific Adviser must be to develop a coherent policy on science, technology and research that encompasses issues such as the provision of scientific and technical advice to DFID and the effective use by DFID of scientific knowledge and research results to promote innovation.**

¹⁷⁷ Biosciences Federation, *DFID Research Funding Framework 2005–7: A response from the Biosciences Federation to the Department for International Development*, July 2004

6 Capacity Building in Developing Countries

The need for capacity building in developing countries

97. It is not a straightforward matter to quantify national science and technology capacity, but by any measure there is a vast gap between the North and South. For instance, developing countries have an average of 384 researchers in R&D per million people compared to an OECD average of 2,098 per million.^{178,179} Similarly, developing countries commit an average of 0.6% of GDP to R&D in comparison with an OECD average of 2.6%.¹⁸⁰ Whilst there are 40.9 internet users per million people in developing countries, the OECD average is 383.1 per million.¹⁸¹ In addition, Sir David King recently published a paper that demonstrated that 31 countries, including the G8 countries and the 15 countries of the European Union before the 2004 accession, produced more than 98% of the world's highly cited scientific papers.¹⁸² Although it is accepted that citations and publication rates are highly imperfect indicators of scientific capacity in developing countries, these data collectively serve to illustrate the yawning divide between North and South. Harefield Research Foundation also estimated that "Compared to their counterparts in the developed world, young people in the developing countries are 100 times less likely to enter a scientific career".¹⁸³

Figure 3

Categories of Science and Technology Capacity in Developing Countries

There is obviously wide variation in the science and technology capacity of developing countries. The World Bank Policy Research Working Paper on Strategic Approaches to Science and Technology in Development describes three categories of science and technology capacity for developing countries:

Scientifically proficient countries increasingly define their relations with the scientifically advanced countries on the basis of equality or near equality; examples include Brazil, China, India, Hungary, and South Africa.

Scientifically developing countries have pockets of adequate scientific and technological capacity amidst general scarcity; examples include countries such as Turkey, Colombia, Indonesia, Pakistan, and Latvia.

Scientifically lagging countries lack capacity almost entirely; examples include countries such as Nepal, Albania, Mali, Ecuador, and Libya.

Strategic Approaches to Science and Technology in Development, Policy Research Working Paper, World Bank, April 2003

178 There are 2,666 researchers in R&D per million people in the UK.

179 Human Development Report 2004: *United Nations Development Programme, Cultural Liberty in Today's Diverse World*, 2004

180 Ibid

181 Ibid

182 Sir David A. King, "The scientific impact of nations", *Nature*, Vol 430, July 2004, pp.311–316

183 Ev 125

98. Chancellor College, University of Malawi, provided us with a description of the human resource problems typically faced by a research institution in a scientifically lagging country: “Technicians are not updated on use of new technologies. Very few academic staff have PhDs. Some members have stayed for over 10 years after obtaining their Masters and are still looking for PhD scholarships without success”.¹⁸⁴ Chancellor College also highlighted the lack of adequate infrastructure and equipment: “Limited funds do not permit expansion of appropriate infrastructure [...] The research centre does not have [its] own labs, library, ICT offices and teaching rooms [...] Most equipment is outdated or not working”.¹⁸⁵

99. Mr Scott from the Intermediate Technology Development Group told us that capacity building was essential to improve “the ability and capability of institutions throughout the developing countries from government right down to community level to [...] assess and make decisions for themselves about the kinds of technologies that they want to use” and their ability to “develop and adapt technologies for their own use”.¹⁸⁶ Chancellor College agreed, noting that “Research centres enhance research capacity and respond to the needs of the nation in solving problems requiring expert analysis. These are also important for the generation of baseline data for identifying intervention strategies and use in decision and policy making”.¹⁸⁷

100. Furthermore, capacity building of national university and research systems promotes training of professionals and educators, whilst international collaborations between academics in the North and South can contribute to global stability. Capacity building is also required to enable monitoring of progress towards the MDGs: the High Level Forum on the Health Millennium Development Goals published a discussion document in December 2003 noting the “remarkable disconnect between the demand for high quality health information and the ability of [developing] country systems to respond to the demand”.¹⁸⁸ Moreover, a recent article in the *British Medical Journal* addressing attainment of the MDGs highlighted “concerns about the current capacity of poor countries to effectively absorb major increases in aid”.¹⁸⁹ Capacity building is also required to help developing countries to meet their international environmental obligations (e.g. see paragraph 149 on the Darwin initiative).

101. In addition, we heard in Malawi that for UK researchers in Tropical Medicine, for example, the projects undertaken in Sub-Saharan Africa provided access to clinical samples that simply could not be obtained in the UK. As Professor Leach, IDS, remarked, “In my experience, good partnership arrangements involve just as much learning the other way”.¹⁹⁰ **We believe that capacity building in science and technology can yield a panoply of benefits for both North and South, including stronger research and education systems in developing countries, and the fostering of international relations.**

184 Ev 337

185 Ibid

186 Q 65

187 Ev 337

188 High Level Forum on the Health Millennium Development Goals, *Monitoring the Health MDGs*, December 2003

189 Andy Haines and Andres Cassels, “Can the millennium development goals be attained?”, *British Medical Journal*, Vol 329, pp. 394–397, 14 August 2004

190 Q 106

102. The draft DFID Research Strategy asserted that the “first priority, especially for Africa, is the capacity to access existing knowledge”.¹⁹¹ On the other hand, an article in *Nature* on combating malaria in Africa observed that: “Speak to any scientist in Africa and you get the same message: to turn the tide, African doctors and researchers must take matters into their own hands, translating research and control measures into sustainable local campaigns”.¹⁹² **Whilst we agree that access to knowledge is vital, the capacity to utilise knowledge needs to be developed in tandem if any benefits are to be derived from the availability of new information. This requires both human resources and physical infrastructure.** Moreover, research has demonstrated that countries can only assimilate R&D information from other countries if they are engaged in R&D themselves.¹⁹³

UK commitment to science and technology capacity building in developing countries

103. The UK *Science and Innovation Investment Framework 2004–2014* published in July 2004 placed capacity building in developing countries at the heart of its vision for UK science: “through knowledge transfer and capacity building activities the UK will be making significant contributions to the sustainable development and stabilisation of a world in which issues of poverty, education, water provision, population growth and global warming are tackled”.¹⁹⁴ In addition, the IAC report, *Inventing a Better Future*, asserted that “Enhancing S&T capacity in the developing nations is truly a necessity and not a luxury”.¹⁹⁵ We agree. **We firmly believe that the UK has an obligation to support capacity building in science and technology for development and welcome the fact that the Government has now affirmed its commitment to do so.**

104. However, we heard a number of complaints about the inadequacy of UK support for science and technology capacity building. Martin Hodnett from the Free University of Amsterdam stated: “Over many years of working on DFID funded projects, particularly in the capacity building sector, I have observed a move away from science, research and capacity building within DFID funding. This appears to have been driven indirectly by the relatively recent, and very laudable focus on poverty elimination”.¹⁹⁶ Moreover, the Oxford Forestry Institute pointed out that capacity building needs to take place on a much larger scale than has been the case in the past: “factors such as civil conflict, HIV/AIDS are having serious impacts on research and technical capacity in some countries. The past assumption that sufficient research capacity will result from training a few people per country, on a one-off basis, that will then be self sustaining within the country, is not valid”.¹⁹⁷ Dr Robin Matthews went further, telling us that this was “a sorry state of affairs for a country that, historically, has made a huge contribution throughout the world in this area, particularly at

191 DFID, *DFID Research Funding Framework 2005–07*, May 2004

192 Declan Butler “Power to the people”, *Nature*, Vol. 430, pp. 928–929, 19 August 2004

193 Griffith, Redding and Van Reenen, *Mapping the two faces of R&D: productivity growth in a panel of OECD industries*, Centre for Economic Policy Research Discussion Paper, 2000

194 HM Treasury, DTI, DfES, *Science and innovation investment framework 2004–2014*, July 2004

195 InterAcademy, *Inventing a better future: A strategy for building worldwide capacities in science and technology*, Council, January 2004

196 Ev 123

197 Ev 132

a time when the need to improve food production at low cost has never been greater, and when the resources for the global community to work together on common problems have never been so readily available”.¹⁹⁸ On a more positive note, Rothamsted Research commented on the “enormous inherent willingness in the UK science community to participate in the capacity building in developing countries” and urged DFID to exploit this.¹⁹⁹

105. It will be important for the UK to develop a longer-term vision for capacity building. Ralph Cobham of Resource Consultants International, for example, emphasised the need for DFID to make more long-term investments: “From experience of recently working on a DFID-funded environmental management strengthening project in Siberia over 3.5 years, I would also advocate the development and use of much more long-term monitoring and mentoring programmes, post—‘project completion’. A period of 3.5 years is far too short for the achievement of sustained capacity building. Provision needs to be made for follow-up mechanisms that enable institutional performances to be nurtured, monitored and mentored over a realistic longer time-period”.²⁰⁰ The long-term nature of capacity building and the vast scale of resources required for it mean that it is very difficult for a single country to make a sustainable impact. Co-ordinated global action, as called for in the IAC report, *Inventing a Better Future*, is therefore essential.²⁰¹

106. Although the CSA’s Scoping Project on science and technology capacity building in developing countries has not yet been published, Sir David King has revealed that the interim report concluded that “there is presently little systematic approach to S&T capacity building [for developing countries] in the UK”.²⁰² DFID has also now published its draft Research Strategy, which states that DFID will “give more effort to building developing country research capacity”.²⁰³ We are pleased to see capacity building featuring in the new Research Strategy but are not yet persuaded that this will result in the considerable boost to science and technology capacity building funding that is urgently required. **DFID should commit significant extra funding specifically for capacity building, over and above the existing research budget. In addition to the funds for capacity building that are currently channelled through the central research budget, DFID Country Offices should play a much greater role in capacity building. However, a major collective international effort with a long-term horizon is vital for sustainable science and technology capacity building to be effected on the scale required. DFID should take advantage of its leadership roles in NEPAD and the Commission for Africa, as well as the forthcoming UK Presidencies of the G8 and EU, to call for an international science and technology capacity building strategy supported by the necessary resources.**

198 Ev 142, para 3

199 Ev 153

200 Ev 252, para 2.10

201 InterAcademy, *Inventing a better future: A strategy for building worldwide capacities in science and technology*, Council, January 2004

202 Presentation to FST, 12 May 2004

203 DFID, *DFID Research Funding Framework 2005–07*, May 2004

Trends in capacity building

107. The recent POSTnote on scientific capacity in developing countries described four approaches to capacity building through research projects:

- Donor country research – researchers from developed countries carry out research about developing countries, occasionally involving local researchers;
- Fellowships – people from developing countries attend courses and gain qualifications in developed countries;
- In-country training – developed countries train and teach within developing country institutions;
- Financial support – developing country universities and research programmes are funded directly by donors.²⁰⁴

108. UK support for capacity building has mainly taken the form of fellowships and research programmes based in both the UK and developing countries. Although there is clear potential for research programmes to contribute to capacity building, Mr Maxwell, Director of the ODI, warned that capacity building should not just “be tacked on to existing research projects” and should be properly funded to ensure that it did not “undermine and weaken the home country investment”.^{205,206} Mr Maxwell was also one of many witnesses who emphasised the importance of in-country training: “Wherever it is possible to train people in the South it will be much cheaper, more cost effective and more appropriate culturally to do so”.²⁰⁷ Professor Leach pointed out that developing country researchers “are often very aware of what the local problems are, they simply do not have the ability to pursue them and they have to go for funding which is within the remit of donor projects and, indeed, need to appeal to those audiences in order to publish”.²⁰⁸ The London School of Hygiene and Tropical Medicine also told us distance learning had “the twin advantages of reduced cost and avoiding lengthy absences from the country in question” and was increasingly in demand, although contact with supervisors was still necessary for research degree students.²⁰⁹

109. The history of British technical assistance was summarised by the International Development Select Committee, which observed in its Report on DFID in 2002–03 that “Technical assistance as a mode of development assistance has, it seems, gone out of fashion. This is largely because it was generally a donor-imposed method of aid delivery and was often seen as resulting in the neglect of local knowledge [...] The suggestion that countries which need technical assistance because of very low capacity ‘purchase technical assistance on the open market and manage it’ is impractical precisely because they may lack the capacity to do this. We believe that DFID should re-examine its policy on

204 *Scientific capacity in developing countries*, POSTnote 216, Parliamentary Office of Science and Technology, March 2004

205 Q 70

206 Q 73

207 Q 103

208 Q 72

209 Ev 134

technical assistance in those countries with large skills gaps—particularly those affected by AIDS and HIV”.²¹⁰ We agree. **Technical assistance must play a valuable role in capacity building, providing that training and other forms of support for developing country nationals are included as an integral component of the assistance.**

UK training schemes and scholarships

110. An overview of the main UK training schemes and scholarships that play a role in supporting science and technology in developing countries is provided below. Although these schemes are important contributors to capacity building, the collective funding involved still represents only a fraction of the total UK aid budget, and capacity building comprises more than just training.

Commonwealth Scholarship and Fellowship Plan

111. The Commonwealth Scholarship and Fellowship Plan (CSFP) is managed by the Commonwealth Scholarship Commission (CSC), a Non-Departmental Public Body that was established at the first Conference of Commonwealth Education Ministers in 1959 and now operates under the International Development Act 2002. DFID provides £11.75 million, and the FCO £2.05 million, for awards to developing and developed countries respectively.²¹¹ The CSC explained to us that the CSFP “provides a framework through which governments of Commonwealth nations can offer awards to citizens of other member states”.²¹² This means that “Although the aims are primarily developmental”, a small number of UK students have been awarded scholarships to study in other Commonwealth countries (with funding provided by the host country).²¹³

112. Historically, most of the awards made by the CSC were for conventional Postgraduate degrees or shorter Fellowships for mid-career academics from developing countries. However, the CSC has recently introduced a number of innovations, including split-site and distance learning awards. The CSC told us that split-site awards “contribute to the stock of PhDs in those countries at relatively modest cost, without the need for candidates to leave their countries for long periods and in a way that promotes collaboration between universities in the UK and developing world”.²¹⁴ Distance learning awards additionally plug a gap in scholarship policy since “Generally, overseas students wanting to follow a British university distance learning course cannot obtain local scholarships (because they are not studying in a local institution) or an overseas scholarship (because they are not planning to travel overseas)”.²¹⁵ Both approaches also have the added benefit that the research problems being addressed are more likely to be of direct relevance to the developing country than projects typically undertaken in UK universities. In addition, the CSC has introduced Professional Fellowships to enable mid-career professionals in areas

210 International Development Committee, Sixth report of Session 2003–04, *Migration and Development: How to make migration work for poverty reduction*, HC 79–I

211 Ev 355

212 Ev 355–356

213 Ev 356

214 Ibid

215 Ibid

other than academia to spend time in the UK acquiring specific skills, as opposed to undertaking a specific research project. Although these schemes are still under evaluation, **we are encouraged by the innovative approaches being applied to the Commonwealth Scholarship and Fellowship Plan. In particular, we support the introduction of split-site and distance learning awards.**

113. Between 1999 and 2003, an average of 49% of awards were made in science and technology subjects (including medicine, dentistry and veterinary science; see Table 3).²¹⁶ The CSC attributed this high percentage of science and technology awards in part to the fact that, despite a widespread trend towards taught postgraduate courses, “the Commission has been clear in its determination to preserve doctoral awards as a key part of its provision”.²¹⁷ Furthermore, the CSC suggested that the fact that “The overwhelming majority of nominations for our scholarships come from national government agencies and developing country universities”, as well as the strong representation of science and technology in the selection panels, contributed to the high proportion of science and technology awards.²¹⁸ **We are pleased that the Commonwealth Scholarship Commission continues to recognise the importance of doctorates for development of expertise in scientific subjects, despite the fact that PhDs are significantly more expensive than taught postgraduate courses. We also commend the Commonwealth Scholarship Commission for following a demand-led approach, and for ensuring strong representation of science and technology in the review process for award applications.**

Table 3: CSFP Awards in Science and Technology

Year	Percentage of Awards in Science and Technology ²¹⁹
1999	51
2000	55
2001	47
2002	51
2003	44

Source: CSC

114. In seeking to improve the evaluation of the success of its schemes, the CSC has undertaken a tracer study of alumni, with contact already having been made with over 4,000 award holders.²²⁰ As a result, the CSC was able to publish a Directory of Commonwealth Scholars and Fellows in 2003, as well as conducting an analysis of the experiences of the CSFP alumni. Consistent with the fact that candidates sign an undertaking to return to their home country, the study demonstrated that over 85% of

216 Ev 357

217 Ibid

218 Ibid

219 Includes awards made in medicine, dentistry and veterinary science. Average percentage of awards made in pure science and technology between 1999 and 2003 was 39%.

220 Ev 357

alumni had returned to their home country.²²¹ The study also indicated that more than half the alumni were working in higher education, suggesting that the CSFP was effectively contributing to capacity building. In the course of the study, the CSC discovered that a number of their alumni reported “a feeling of isolation on their return”, and noted that “a lack of equipment or other facilities” was sometimes cited as a reason for this.²²² The latter point is discussed further in paragraph 136.

115. The CSC have taken steps to improve the environment to which award holders return on completion of their studies, for example by establishing “professional networks” for alumni with similar interests, and through the introduction of Institutional Capacity Grants. These grants allow up to six individual awards to be allocated towards a particular initiative to which the home institution has also offered support. This can start to build a community of researchers who have similar training opportunities and better funded research. The CSC also told us that “grants can be taken up over a four year period, to prevent too dramatic an outflow of staff at any given time”.²²³ In addition, since direct funding of infrastructure falls outside its remit, the CSC is exploring the possibility of joint activity programmes with other development agencies which focus on infrastructure support. The CSC is also seeking to strengthen collaboration with the Higher Education Links scheme.

116. The CSC is leading the way in undertaking tracer studies and improving the support that it gives to alumni. We believe that Institutional Capacity Grants, as well as collaborative programmes with agencies that can deliver infrastructure support and other UK schemes such as the Higher Education Links scheme, are likely to provide effective routes to capacity building and – subject to the evaluation of such schemes – encourage DFID to increase its support for them. **We welcome the approaches that the Commonwealth Scholarship Commission is adopting to improve the quality and impact of the training it delivers. However, whilst the development of centres of excellence can undoubtedly have a positive impact on the wider region, care must be taken to ensure that concentration of resources in one institution or area does not distort the balance of capacity in the region or country as a whole.**

117. DFID also provides approximately £2 million per year to the Shared Scholarship Scheme, administered by the Association of Commonwealth Universities, which assists students from Commonwealth countries wishing to pursue studies of relevance to development. Of the current 168 awards, 54% are in science and technology subjects.²²⁴

Higher Education Links Scheme

118. The Higher Education Links (HEL) scheme exists to promote collaboration between at least two higher education institutions—one in the UK and one overseas—with the ultimate objective of contributing towards poverty reduction and sustainable development.²²⁵ The scheme has been running with minimal change since 1981 and it is

221 Ev 358

222 Ibid

223 Ibid

224 Ev 104, para 71

225 British Council, *Higher Education Links Scheme Annual Report 2002–03*, July 2003

estimated that approximately 3,200 Links have been supported during this period. On average, the HEL scheme awards approximately £8,000 to £10,000 per year to each Link and the funding is used for a variety of activities, including training of staff, development of new courses, publication of research or teaching materials, and organisation of workshops or seminars.²²⁶

119. The British Council, which manages the scheme on behalf of DFID, described the aim of the HEL scheme as being “to build links in areas of innovative work, using relatively small sums of money”.²²⁷ Dr Lloyd Anderson, Director of Science at the British Council, told us that “DFID put about £3 million a year into this scheme, and if you take the contribution by the higher education institutions in the UK and British Council, it adds up to over £10 million per annum”.²²⁸ Although DFID appears to be leveraging other funds very successfully through the HEL scheme, we heard that there had been some detrimental effects of academics having to give their time for free. Of the 430 links in 2003, 47% were in low income countries and 53% in middle income countries, with 14% of the total in science and technology subjects.²²⁹

120. The scheme was placed under review in 2002–03 and no new links were awarded after 2003–04. The review, published in March 2003, praised the effectiveness of the scheme in mobilising resources from other sources, but criticised the lack of evaluation and identification of good practice.²³⁰ The scheme was not integrated into DFID’s PSA targets and concerns were raised about the sustainability of the scheme. In the light of the findings of the review, DFID informed its partners that funding for the HEL scheme in its current form would be withdrawn in 2006. In May 2004, Hilary Benn announced a new HEL scheme, expected to commence in April 2005 with funding of £3 million a year committed over the following seven years. The new scheme will have a stronger focus on poverty reduction and promotion of sustainable development, and only countries where DFID has bilateral programmes will be eligible. The new scheme will also involve closer collaboration with other DFID programmes (including CSFP) and development agencies engaged in capacity building; will support both South–South links and links between Southern partners and non–UK partners (i.e. will be “untied”); will have a stronger emphasis on science and technology links; and will utilise more systematic approaches to learning and disseminating best practice. The management contract for the new scheme will be awarded by open competition.²³¹

121. We support DFID’s efforts to improve the Higher Education Links scheme through formal evaluation and are pleased that DFID has decided to continue to support the scheme with an increased emphasis on poverty reduction and science and technology, and a more rigorous approach to evaluation. However, it is regrettable that DFID’s timing resulted in a hiatus between the closure of the old scheme and announcement of the new

226 Terry Allsop, Paul Bennell and David Forrester, *DFID’s Higher Education Links Scheme: Review and Possible Future Options for Higher Education Partnerships*, March 2003

227 Ev 393

228 Q 214

229 David Levesque, DFID, presentation to UKFIET Colloquium, 17 May 2004

230 Ibid

231 Letter from Gareth R Thomas MP, Parliamentary Under–Secretary of State, DFID, to Professor Robert Boucher, Chairman of the HEL scheme Steering Committee, 11 May 2004.

one. Better planning could have obviated this delay, which caused uncertainty for DFID's partners in the HEL scheme. **DFID should be more sensitive to the impact of changes in its policy and funding arrangements on UK organisations and researchers, and their counterparts in developing countries.**

Chevening Scheme

122. The majority of the training supported by the FCO is delivered through the £44 million per annum Chevening Programme, under which scholarships are mainly awarded for one year Masters courses. Chevening awards are made to promising young postgraduate students or professionals, “who display both intellectual ability and leadership potential”.²³² The objective of the scheme is implicit in the FCO requirement that candidates “should have the potential to rise to positions of power and influence in their own countries where they might help to further UK political, diplomatic, commercial, and other interests in the mid or longer term”.²³³

123. In 2002–03, 71% of Chevening scholars were from developing countries, but only 6.54% (i.e. 154) of the 2,387 awards made were for science and technology subjects (see Table 4).²³⁴ Of the 154 awards made in science and technology subjects in 2002–03, 6.4% were for PhDs, 55.1% were for Masters courses and 3.8% were for short courses. The value of PhD awards in science and technology is discussed in paragraph 125. Awards for the Chevening scheme are made on the “best-of-the-best basis of selection” and the FCO does not take into account country needs in making the awards.²³⁵ The fact that candidates “should have the potential to rise to positions of power and influence in their own countries” may put science and technology candidates on a weaker footing than those from the humanities and legal and political fields, since it is difficult for people working in an environment where there is little financial support for science and a poor infrastructure to gain the reputation and profile demanded.

Table 4: Chevening Awards in Science and Technology

Academic Year	All Awards	Number of Science and Technology Awards²³⁶	Awards in Science and Technology as Percentage of All Awards
2002–03	2,387	156	6.54
2001–02	2,284	128	5.60
2000–01	2,285	145	6.35
1999–2000	2,022	205	10.14

Source: FCO

232 Ev 313

233 Ibid

234 Ibid

235 FCO contribution to scoping study: Science and technology capacity building in developing countries, particularly Africa, February 2004

236 Does not include awards made in computing, IT, sociology or other social science.

124. The Chevening scheme was recently subjected to an independent review that identified weaknesses in the evaluation of the scheme, commenting on the fact that there was “little formal evidence” of the impact of the FCO’s expenditure.²³⁷ The FCO also alluded to the superficial nature of Chevening alumni tracking in its memorandum of evidence: “Many Embassies and High Commissions hold annual receptions for Chevening alumni and invite them to specific events. The careers of Chevening alumni are monitored through these means”.²³⁸ **It is disappointing that the FCO has not been at all thorough in its past evaluation of the Chevening scheme.** We hope that this will not be the case in the future. In addition, the review recommended that the scheme should “be integrated fully with FCO strategy” and reported that “More effective co-ordination is needed with other government departments”.²³⁹ The latter issue is addressed in paragraph 165. As a result of the review, the FCO will pilot a short-term professional fellowships scheme in 2004–05, and “revise the criteria for Chevening academic scholarships for the 2005–06 intake of scholars to link them more directly with the FCO’s objectives”.²⁴⁰ It is not yet clear how, if at all, that is likely to affect the percentage of awards made either to developing countries, or in science and technology subjects.

Dorothy Hodgkins Postgraduate Awards

125. The Dorothy Hodgkin Postgraduate Awards constitute a new £10 million initiative to bring high-quality science, engineering, medicine, social science and technology students from overseas to study for PhDs in top UK university departments.^{241,242} The first intake in October 2004 will provide fully-funded scholarships for more than 100 PhD students from India, China, Hong Kong, Russia and the developing world. The scheme is run through the OST, with funding provided both by the Research Councils and industry. Sir David King, the Government’s CSA, has been emphatic about the merits of PhD training for overseas students: “the value [...] of a three to four-year scheme in my view is considerably more than four schemes of one year [...] in terms of the learning experience in science, but perhaps more especially in terms of the understanding of the culture”.²⁴³ **PhD fellowships, although more expensive than those for taught courses, are essential for building the depth of expertise and range of skills required for effective research in many scientific and technological subjects.**

126. The scheme will be administered on behalf of OST by the Engineering and Physical Sciences Research Council (EPSRC). The other Research Councils who are providing funding for the scheme in addition to EPSRC are the Biotechnology and Biological Sciences Research Council (BBSRC), the Economic and Social Research Council (ESRC),

237 River Path Associates, *The FCO Scholarships Review*, 17 November 2003

238 Ev 313

239 River Path Associates, *The FCO Scholarships Review*, 17 November 2003

240 Foreign and Commonwealth Office, *Departmental Report 2004*, Cm 6213, April 2004

241 <http://www.rcuk.ac.uk/hodgkin/>

242 In the first instance £10 million has been allocated to support a single cohort of students over three to four years.

243 Q 220

the Medical Research Council (MRC), the Natural Environment Research Council (NERC) and the Particle Physics and Astronomy Research Council (PPARC).²⁴⁴

127. Although plans have not yet been finalised, Sir David told us that near-term assessment of the scheme was likely to include consideration of:

- the quality of successful applicants from an assessment of their first degree attainment;
- submitted versus successful applications;
- take-up and successful completion of awards;
- demographic profiles – by discipline, nationality, ethnicity, gender; and
- views of students, the Research Councils, private sector stakeholders and participating universities.²⁴⁵

128. Alumni tracking will also be undertaken and efforts made to ensure that students return to an environment where they can utilise their new skills, for example through networking schemes and encouraging alumni and institutional collaboration.²⁴⁶

Capacity building of national science and technology institutions

129. The importance of developing country science and technology institutions for the PRSP approach was touched on in paragraph 28. However, building the capacity of these national science and technology systems can deliver many other notable benefits. The Interim Report of the Task Force on Science, Technology and Innovation United Nations Millennium Project makes the following observation: “government policies towards science and technology have a critical role to play in economic transformation. One of the key areas requiring policy adjustment in most developing countries is the way governments receive advice on issues related to the role of science and technology in development. There is a need for STI [science, technology and innovation] advice to reach policymakers. The first necessary step is to provide the institutional framework in developing countries and commit to support such a framework”.²⁴⁷

130. Science and technology permeate modern society, sometimes producing controversial effects. The Institute of Development Studies told us that “Issues of potential disbenefits from science and technology, and the ways these may impact on poverty, should be central to any agenda linking science, technology and development”.²⁴⁸ In Malawi we encountered agricultural researchers who told us that they could not use the term “GM” to describe the work they were doing due to the negative connotations that genetic modification has acquired. It seems likely that this has much to do with perceptions, attitudes and market

244 <http://www.rcuk.ac.uk/hodgkin/>

245 Ev 391

246 Ibid

247 Interim Report of the Task Force on Science, Technology and Innovation United Nations Millennium Project, *Science Technology and Innovation, Challenges and Opportunities for Implementing the Millennium Development Goals*, 1 February 2004

248 Ev 147, para 13

positions in the North filtering through to the South or being transmitted directly, for example by the refusal of the EU to purchase genetically modified foodstuffs. The stance was certainly not based on thorough local discussion of the potential benefits and risks of using genetically modified seeds for agriculture in Malawi.

131. On the one hand, this illustrates that science in society activities are just as important in developing countries as in the developed world; on the other, it demonstrates the need to build sufficient capacity to enable developing countries to undertake their own risk assessments for new technologies. The Institute of Development Studies told us: “Issues concerning the unequal distribution of gains and possible risks from technological interventions acquire particular pertinence in developing country contexts, where those who stand to lose may already be at the margins of survival”.²⁴⁹ This adds further weight to the argument for making the strengthening of national science and technology institutions a high priority.

132. It will not, however, be sufficient to focus on capacity building of developing country research institutes. The whole system of innovation needs to function effectively if the full potential of research is to be harvested. Dr Grant Singleton from Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO) told us that “The training of NGO field and extension staff has had a greater impact than simply training in-country scientists and post-graduate students.”²⁵⁰ Rothamsted Research also emphasised efforts to “train-the-trainers”.²⁵¹ **Investment to strengthen the whole system of innovation in developing countries is required to make research more effective. Capacity building of national research systems must therefore encompass reinforcement of knowledge transfer and dissemination mechanisms.**

Information and Communications Technology capacity

133. The United Nations Development Programme website comments that “Information and Communications Technology (ICT) is an increasingly powerful tool for participating in global markets; promoting political accountability; improving the delivery of services; and enhancing local development opportunities”.²⁵² In the context of science and technology, ICT also provides a means of accessing information and knowledge, particularly in the form of specialist articles and journals. Our recent Report, *Scientific Publications: Free for all?*, stated that “The relatively low levels of ICT in the developing world compared to the West is not an argument against digital journals, rather it highlights the need for further development of ICT capacity to fully exploit the potential of digital technologies [...] The digitisation of journals has the potential to greatly increase access to research findings for researchers in the developing world”.²⁵³

134. Science is an international activity and ICT can facilitate the formation of networks between individual researchers in different institutions and countries. This contact can be

249 Ev 147, para 13

250 Ev 128, para 2

251 Ev 152

252 <http://sdnhq.undp.org/it4dev/>

253 HC (2003–04) 399–I

invaluable for stimulating and supporting collaborations, as well as improving the quality of research through peer input and creative discussion, particularly for scientists who may not have access to a strong research community in their home institution, region or country. The International Development Research Centre of Canada also told us that it has “put great emphasis on forming networks of researchers working on similar problems in different countries” since not only have they found that the “practice contributes to the goal of producing valid and relevant research results, but it also contributes to capacity-building through exchange of information, research experience and results; the creation of a peer group; and assembling a critical mass of researchers and resources when it might not be possible in any one institution or country”.²⁵⁴

135. We are aware that DFID has funded various ICT projects, for instance assisting the Kigali Institute of Science, Technology and Management in Rwanda to strengthen its ICT infrastructure.²⁵⁵ **Investment in Information and Communications Technology, for example to grant institutions in developing countries reliable access to the internet, is money well spent and we encourage DFID to give such support high priority. Failure to address inadequacies in ICT infrastructure and equipment can negate the benefits of other investments in capacity building: effective science and research require access to the global pool of knowledge, and isolated researchers are likely to flounder without both scientific and moral support from their peers. For the same reasons, DFID should also continue to support networks that include researchers in developing countries.** Clearly, ongoing support for training and running costs is required in addition to the original injection of funding to purchase hardware or establish an internet connection.

Laboratory equipment and infrastructure

136. The Wellcome Trust stated in their response to DFID’s consultation on their draft Research Strategy that “many scientists are unable to satisfactorily perform research in their home-country because of the inadequate quality of local laboratories” and Professor Gaines of Strathclyde University told us that “Little is done to ensure that relevant facilities await the student on their return to their home developing country”.^{256,257} During our visit to Malawi, we saw chronic shortages of even basic (and relatively cheap) laboratory equipment, and instances of equipment being donated without provision of manuals or training with the result that it could not be calibrated or maintained. **We believe that capacity building requires a holistic approach including thorough consideration of the infrastructure and equipment that will be available to the developing country researchers on completion of their training. In the case of split-site or in-country training schemes, it is clearly essential that adequate facilities are in place during the training. We urge DFID to explore further opportunities for the provision of laboratory equipment to developing countries; where this does occur, the equipment must be of a standard sufficient to support high quality research and the necessary**

254 Ev 249

255 Ev 105, para 76

256 Wellcome Trust, *Response to Department for International Development (DFID) Research Funding Framework 2005–07 consultation*, July 2004

257 Ev 192, para 7.1

training and instruction provided to render the equipment genuinely useful and to maintain it.

Technology transfer/capacity building in the private sector

137. The Government's *Investing in Innovation* strategy paper stated that the “potential of scientific and technological discoveries will only be realised [...] if they can be effectively translated into innovation—new products, services and systems”.²⁵⁸ In developing countries, this process of innovation is often hampered by the weakness of the local private sector. Paragraph 42 discussed the importance of international PPPs for financing large scale R&D projects. **We believe there is also an important role for public–private partnerships at a local level.** Professor Julian Evans told us that “support for the pilot or demonstration scale application of research outputs” was needed from donors, in order to “allow the public–private partnerships to operate, under the demand–leadership of the poor”.²⁵⁹ We agree.

138. The Chairs of the RNRRS Independent Programme Advisory Committees told us that DFID had “recently conducted a number of exploratory exercises to identify appropriate mechanisms to stimulate investment by the private sector in pro–poor research, development and technology transfer, including establishing a Rural Enterprise Technology Facility (RETF)”, which had “led to greater understanding of the challenges involved in getting greater involvement of the private sector in pro–poor development, but not to any practical outcomes that provide opportunities for national or fledgling local enterprises”.²⁶⁰ In addition, the Centre for Development and Poverty Reduction at Imperial College stated that “capacity building programmes still tend to be biased towards government agencies and NGOs, and their employees, and in many cases private firms are ineligible for support. While there may have been some small improvement on this in the last few years, there is still a long way to go”.²⁶¹ **Science and technology capacity building in the private sector would complement efforts to strengthen science and technology capacity in the public sector and is vital for stimulation of innovation, and thus economic growth, in developing countries.**

139. Science and technology capacity building in the private sector can also help to overcome trade barriers. CAB International told us that they believed science was now “the main arbiter of international agricultural trade” since successive reductions in import tariffs by WTO agreements mean that “non–tariff trade barriers such as sanitary/phytosanitary (SPS) considerations and the potential impacts of biotechnologies have come to assume great importance”.²⁶² Argentina is reported to have spent more than \$80 million on improving its levels of plant and animal sanitation in order to gain acceptance for its meat, vegetables and fruit in developed country markets, and the cost of

258 HM Treasury, *Investing in Innovation*, 2002

259 Ev 256

260 Ev 178, para 37

261 Ev 151

262 Ev 166, para 25

meeting SPS, customs valuation and TRIPs agreements has been estimated to be approximately \$150 million per developing country.²⁶³

140. Developing countries cannot increase exports or attract private sector investment unless they have the necessary infrastructure in place. This includes roads, telecommunication networks and an appropriate legal framework, as well as the scientific and technological capability to select, build, maintain and operate this infrastructure. DFID told us that it had “committed £160 million to trade-related capacity building from 1998 – more than treble the pledge in the 2000 White Paper”.²⁶⁴ It has also recently committed £5 million over three years to the African Agricultural Technology Foundation, a new not-for-profit foundation that facilitates partnerships with public and private sector entities in order to remove barriers that have prevented smallholder farmers in sub-Saharan Africa from gaining access to agricultural technologies that could help improve food security.²⁶⁵ Scientific and technological capability is a necessary condition for trade and investment, both for development of the required infrastructure and to enable countries to attain the increasingly high quality standards demanded by the international market. We welcome DFID’s recognition of the importance of building capacity to enable the private sector in developing countries to have access to appropriate scientific and technological expertise to enable them to meet the conditions imposed by world markets. However, DFID’s increasing emphasis on budgetary support actually weakens its ability to provide the expertise which would permit enterprises in developing countries to meet quality standards imposed by developed countries. **As the Government’s policies stand it is impossible for developing countries to trade their way out of poverty.**

141. Science and technology capacity building in the pharmaceutical industry in developing countries could also lead to wider benefits, not least improvements in healthcare. The London School of Hygiene and Tropical Medicine told us: “Greater support is needed to assist developing countries to build their own capacity to develop drugs, particularly in the case of neglected diseases affecting predominantly poor populations for which pharmaceutical companies may have little interest in investing because the market is unlikely to provide adequate returns”.²⁶⁶ The School urged “continuing collaboration” of “DFID, International Agencies (especially the World Health Organization), academics in the UK and elsewhere and pharmaceutical companies” towards this end.²⁶⁷ **We believe that in the more scientifically advanced and higher income developing countries there is much to be gained from building the capacity of the public and private sector to develop and manufacture drugs to meet the needs of people in developing countries.** We therefore welcome DFID’s recent publications, *Increasing access to essential medicines in the developing world: UK Government policy and plans*, and *Taking Action: The UK’s strategy for tackling HIV and AIDS in the developing world*, and the commitments contained therein. The WHO’s recent withdrawal of three more generic drugs from its original list of seven approved AIDS medicines, due to tests

263 J. Michael Finger, “The WTO’s Special Burden on Less Developed Countries”, Winter 2000, *Cato Journal*, Vol. 19, No. 3

264 Ev 102, para 51

265 DFID, *Departmental Report 2004*, 2004

266 Ev 133

267 Ibid

showing that the generic versions differed in composition from the patented equivalents, emphasises how much needs to be done to improve developing countries' ability to manufacture affordable drugs of the required standard and efficacy.²⁶⁸

Brain drain

142. The term “brain drain” is used to refer to the departure of educated or professional people from one country, economic sector, or field for another, usually for better pay or living conditions. In particular, the term is often used to describe the widespread concern that the inequities between the South and North could be fuelling the migration of scientists, health professionals and teachers from developing countries to transitional and developed countries. The fact that these individuals are highly skilled makes them more employable in the North, and their loss all the more damaging for the South.

Table 5: Healthcare Staff Per 100,000 Population

Cadre	Botswana	South Africa	Ghana	Tanzania	Malawi
Physicians	28.7	25.1	9.0	4.1	1.6
Nurses	241.0	140.0	64.0	85.2	28.6

Source: DFID

Table 6: Current and Required Human Resources in Malawian Healthcare System²⁶⁹

Cadre	Malawian Ministry of Health target cadre	Current number in post	Current vacancies	
			Absolute number	As percentage of target
Physicians	433	139	294	67.9%
Nurses	8440	4717	3723	44.1%
Clinical Officers	1405	942	463	33.0%
Medical Assistants	1500	718	782	52.1%
Laboratory Technicians	507	251	256	50.5%
Pharmacists	285	93	192	67.4%
Environmental Health Officers	1662	304	1358	81.7%

Source: DFID

²⁶⁸ WHO pulls three more AIDS drugs from list, *British Medical Journal*, Vol. 329, 14 August 2004

²⁶⁹ According to Malawian Ministry of Health and the Christian Health Association of Malawi which provides approximately 30% of healthcare in Malawi.

143. We saw evidence of a crippling shortage of health workers in Malawi. Malawi now has only 1.6 physicians for every 100,000 people and more than 50% of positions for medical assistants, laboratory technicians and pharmacists are vacant (see Tables 5 and 6). For environmental health officers, this figure rises to over 80% (see Table 6). It is known that significant numbers of Malawian nurses are now employed in the UK, in both the public and private sector.²⁷⁰ Indeed, in the period January 2002 to January 2004, 23% of the nurses who left Lilongwe Central Hospital in Malawi to take up other nursing posts in known destinations (including Malawi) came to the UK.²⁷¹ Other Malawian nurses have taken up positions in South Africa and other African countries, in some cases filling positions left vacant by a brain drain to Northern countries. In addition, researchers sponsored by DFID recently estimated that India and Ghana had lost up to \$5 billion and \$60 million respectively in investment and training of doctors since 1951.²⁷²

144. We agree with the International Development Select Committee that it is “unfair, inefficient and incoherent for developed countries to provide aid to help developing countries to make progress towards the Millennium Development Goals (MDGs) on health and education, whilst helping themselves to the nurses, doctors and teachers who have been trained in, and at the expense of, developing countries”.²⁷³ There is currently a voluntary Code of Practice that discourages NHS employers from actively recruiting healthcare professionals from countries which would suffer as a result of the loss of these staff.²⁷⁴ It is thus possible for the NHS employers to circumvent the Code through the use of private sector recruitment agencies and by bringing in locum and temporary staff from developing countries. In recognition of these limitations, the Department of Health announced new proposals to strengthen the Code of Practice on 25 August 2004.²⁷⁵ In the meantime, DFID is in discussions with the Ministry of Health in Malawi and other donors regarding the financing of a \$270 million human resource relief programme for the Malawi health sector.²⁷⁶ **The failure to address the brain drain of health workers from Malawi to the UK has been a highly damaging example of lack of Government co-ordination. We believe that in cases where there is clear evidence of a brain drain of scientists, researchers or health professionals from developing countries to the UK, the UK Government should institute arrangements for direct compensation for the loss of capacity in the relevant sector.** In some cases, this could be achieved by directly funding the necessary salary increases for those workers to improve the attractiveness of staying in their home country. Research would obviously be required to determine the most appropriate solution for each situation.

145. Nonetheless, there is an ongoing debate over the extent to which the “brain drain” represents a genuine cause for concern. For example, the trade union Prospect told us that in terms of the migration of scientists, “the alleged brain drain” had “been over–

270 e.g. “Malawi crippled by nursing crisis”, *BBC News*, 23 Aug 2004

271 Memorandum from University of North Carolina [not printed]

272 Peter Bundred, Tim Martineau and Karola Decker, *Health Policy*, Vol. 70, August 2004, pp. 1–10

273 HC (2003–04) 79–I

274 Department of Health, *Code of Practice for NHS employers involved in the international recruitment of healthcare professionals*, 11 October 2001

275 Department of Health, *New plans to strengthen code on international recruitment of healthcare staff*, press release 2004/0315, 25 August 2004

276 Memorandum from DFID [not printed]

emphasised”.²⁷⁷ Others argue that developing country researchers based in the UK still contribute to development in their country through collaborations and many do eventually return to their home country, bringing with them years of valuable experience gained overseas, giving rise to the concept of “brain circulation”. In addition, the International Development Select Committee in their recent report, *Migration and Development*, stated that in 2003, remittances sent by migrant workers to developing countries through official channels amounted to \$93 billion, so that “Global remittance flows far exceed the flow of aid, and are second only to Foreign Direct Investment (FDI) as a source of external financing for developing countries”.²⁷⁸ On the other side of the equation, Northern countries are increasingly looking to the South to replenish their dwindling supplies of scientists and engineers.

146. We were unable to find comprehensive data to assess the precise extent of a brain drain of scientists, researchers and scientific or technical support staff. The Commonwealth Scholarship Commission told us that tracer studies of CSFP award holders who had studied in the UK showed that “85% of those identified to date have returned to their own (developing) country”, but the figure fell to 71% for award holders who had studied in Canada.²⁷⁹ The International Development Select Committee’s Report also commented on the deficiencies of the evidence base upon which migration policies should be developed.²⁸⁰ **Determining the extent of any brain drain of scientists, researchers and scientific and technical support staff from developing countries, and understanding the consequences of this migration for international development, require further research and data collection. At the very least, UK Government departments should monitor the numbers of migrants from developing countries in their employment and the destinations of developing country award holders for scholarships that they sponsor. However, a far more powerful evidence base could be built if other countries were willing to engage in a long-term international study of the mobility of scientists and researchers from developing countries. We recommend that DFID take the lead in calling for the initiation of such a study by the UN or another international agency.**

277 Ev 388, para 6

278 HC (2003–04) 79–I

279 Ev 358

280 HC (2003–04) 79–I

7 Co-ordination

Government departments

147. Several different Government departments share an interest in science and technology for development, including the Foreign and Commonwealth Office (FCO), the Department of Trade and Industry (DTI), the Department for Environment, Food and Rural Affairs (Defra) and the Office of Science and Technology (OST), as well as the UK Research Councils and the British Council.

Defra

148. Defra is the lead department for sustainable development policy across Government, but the DFID mission statement describes DFID as “the UK Government department responsible for promoting sustainable development and reducing poverty”.²⁸¹ In addition, although Defra takes the lead in climate change policy for Government, the DFID Departmental Report 2004 identifies climate change as a “challenge that threatens the achievement of the Millennium Development Goals”.²⁸² Clearly, good co-ordination between Defra and DFID is essential in view of the overlaps in their remits. Defra told us that there was “a regular dialogue between officials of the two Departments” on sustainable development and “Where appropriate, DFID officials join Defra led delegations to international meetings”.²⁸³ There is also now an inter-departmental Ministerial Group on Biodiversity, including Ministers from Defra, DFID and the FCO, to deal with cross-cutting international biodiversity issues and implementation of Defra’s World Summit on Sustainable Development delivery plan on international biodiversity.²⁸⁴ DFID is additionally represented on an official level international biodiversity group. Defra told us that these interactions with DFID were important for resolving “potential conflicts between the local requirements of developing countries and the wider global commitments and policies of the United Kingdom and the European Community”.²⁸⁵

Darwin Initiative

149. Defra also funds and administers a small grants programme, the Darwin Initiative, which aims to promote biodiversity conservation and sustainable use of resources in less developed countries. In 2004, a total of £1.1 million has been made available for funding new projects.²⁸⁶ The objectives of the Darwin Initiative are listed below.

281 <http://www.dfid.gov.uk/>

282 DFID, *Departmental Report 2004*, 2004

283 Ev 324

284 Ibid

285 Ibid

286 <http://www.defra.gov.uk/news/latest/2004/darwin-040426.htm>

Figure 4

Darwin Initiative: Objectives

To assist countries rich in biodiversity but poor in resources with the conservation of biological diversity and implementation of the Biodiversity Convention.

To draw on British expertise in the field of biodiversity.

Projects funded under the Initiative will be collaborative, involving either local institutions or communities in the host country.

Projects will have a real impact on the ability of the host country to meet its obligations under the Biodiversity Convention.

Projects will be of high quality and scientific (or other appropriate professional) excellence.

Whenever possible, Darwin funding will be used as a catalyst to lever additional funding for project work, which would not otherwise be forthcoming.

The outputs and outcomes from projects should be additional to that from work being funded through other mainstream environmental or research programmes.

Projects funded under the Initiative will demonstrate good value for money.

Source: Defra

150. Typically, projects last for up to three years, with the Darwin Initiative contributing costs of about £35,000 to £70,000 per year and matching funding being sought from a variety of bodies, businesses and trusts. The funding may be used for institutional capacity building, training, research, work to implement the Biodiversity Convention, and environmental education or awareness. In addition, projects must be collaborative, involving partnerships between UK institutions and developing country bodies. Some witnesses spoke highly of the Darwin Initiative. Dr Newton, for example, described the programme as “an outstanding success”, and praised the “focus on training and capacity building as well as [...] dissemination of results”.²⁸⁷ We believe that the Darwin Initiative represents a useful model for funding research and capacity building for development, although the relatively small size of the grants and lack of funding for overheads mean that it will not be universally applicable. We also accept that the focus of the Darwin Initiative on the utilisation of British expertise would not be compatible with DFID’s policy on untying.

Hadley Centre

151. Defra also holds a Climate Prediction Programme contract with the Met Office Hadley Centre that includes a specific requirement to build capacity in developing countries to enable them to generate their own predictions of climate change for their country.²⁸⁸ **We commend Defra for the inclusion of a requirement for capacity building in its contract with the Hadley Centre and believe that all Government departments should incorporate capacity building requirements into their contracts for science, technology and research for development where appropriate. It is, of course, necessary to then provide adequate funding to support the capacity building activities.**

287 Ev 122, para 6

288 Ev 325

FCO

152. The FCO science and technology network aims to inform British science policy by reporting on developments around the world; communicating UK achievements to other countries; encouraging international collaboration; and developing links and contacts for the benefit of the UK research community. The network is largely focused on developed countries “in order to enhance the UK science base and promote innovation and development of the UK’s knowledge based economy”,²⁸⁹ but includes several positions in developing and transitional countries, such as Brazil, Mexico, India, Malaysia, South Africa and Poland.²⁹⁰ Following a recent review, the FCO has identified the following as key international strategic priorities from a science and technology perspective:

- promotion of UK economic interests in an open and expanding global economy;
- sustainable development; and
- security of UK and global energy supplies.²⁹¹

153. The FCO has stated that it supports some science and technology capacity building in developing countries through, for example, the Climate Change and Energy Programme under the recently established Global Opportunities Fund, but none of the programmes includes a specific aim of building science and technology capacity.²⁹² In addition, the FCO has its own interpretation of capacity building, defining it as “a wide range of activities designed to strengthen other countries’ ability to operate in ways which enhance global security or the UK’s global economic interests”.²⁹³

154. There is some overlap between the objectives of the FCO and DFID. For example, the FCO Strategic Priority for sustainable development includes “a specific aim for the FCO to support the New Partnership for Africa’s Development (NEPAD)” and the FCO has also suggested that there may be opportunities for collaboration with the US on capacity building, in view of the US State Department’s increased interest in these activities.²⁹⁴ Although the FCO stated that a “lack of resources” limited its “role in S&T capacity building”,²⁹⁵ the FCO also said that if there was an “over-arching UK strategy” on capacity building, it would ensure that the relevant mechanisms within the FCO were “well aligned to deliver on the science and technology capacity building agenda”.²⁹⁶ In addition, the FCO identified “engagement with big multilateral organisations” such as the UN Commissions,

289 FCO contribution scoping study: *Science and technology capacity building in developing countries, particularly Africa*, February 2004

290 FCO, *Science and Technology Annual Report 2003–2004*, May 2004

291 FCO contribution scoping study: *Science and technology capacity building in developing countries, particularly Africa*, February 2004

292 Ibid

293 Ibid

294 Ibid

295 Ibid

296 Q 267

the World Bank and the OECD, as an area where it could “play a role in ensuring maximum effect for the UK position in those international negotiations”.²⁹⁷

155. CAB International told us that “FCO policy and DFID objectives will not always fit well as political and diplomatic priorities change. Nonetheless, in regard to science there is a need for consistent long-term planning for what areas will be addressed in each country and a recognition of how science and technology can form an intrinsic part of building positive relationships between the UK and other countries through long-term partnerships with local institutions”.²⁹⁸ The Chairs of the Independent Programme Advisory Committees of the DFID RNRRS Programmes also commented that a number of their trainees had “progressed to include at least one president of a developing nation, as well as ministers and other high profile public figures” which provided “opportunities for generating ‘good will’ towards the UK that should not be underestimated”.²⁹⁹ **There is clearly scope for better alignment and co-ordination of FCO and DFID activities. Although we welcome the willingness of the FCO to explore these opportunities, we regret the fact that this has not happened before. As well as co-ordination between the central Government departments, there is much to be gained from interaction between the FCO and DFID at country level.** We were encouraged to see that the British High Commission and DFID Country Office in Malawi worked closely together, to good effect.

UK Trade and Investment

156. Despite the potential conflict between the DTI’s focus on promotion of UK trade and industry and DFID’s focus on international development and poverty reduction, there are areas where the interests of these two departments converge. For example, Professor Gaines, Strathclyde University, told us that there were “open-ended opportunities for the participation of British commerce and industry in poverty reduction and international development”,³⁰⁰ but, to his disappointment, “the idea that we should be collaborating in the excitement of designing, commissioning and operating sustainable factories that create no pollution, and little waste of any sort, has evidently failed to get through to the DTI”.³⁰¹ It is significant that the DTI nominated UK Trade and Investment (UKTI) to speak on its behalf in this inquiry.

157. UKTI is the Government organisation that brings together the work of the FCO and DTI in supporting companies in the UK trading internationally, and overseas enterprises seeking to locate in the UK. UKTI’s objective, set out in its Public Service Agreement, is to enhance the competitiveness of companies in the UK through overseas sales and investments; and attract a continuing high level of quality foreign direct investment:

- to deliver a measurable improvement in the business performance of UKTI’s international trade customers; and

297 Q 267

298 Ev 163, para 2

299 Ev 178, para 41

300 Ev 188, para 5

301 Ev 193, para 8.3

- to maintain the UK as the prime location in the EU for foreign direct investment.³⁰²

158. UKTI commented in its memorandum that it did not seek to “promote capacity building and research partnerships, though from time to time these may result from, for example, the transfer of technology or skills in an overseas investment or collaboration”.³⁰³ The UKTI Development Business Team aims to raise UK firms’ awareness of the extensive opportunities available from aid-funded business and to help them access these opportunities. The Development Business Team works closely with Chambers of Commerce as well as with diplomatic missions overseas to help UK firms win a greater share of multilateral aid-funded business. The Development Business Team also liaises with all the main international aid-funding agencies including the World Bank Group, the European Commission, the UN agencies, the various Regional Development Banks and DFID.³⁰⁴ It appears that there is room for improvement in the collaboration with DFID: Dr Peter Tibber, Group Director, International Sectors Group, UKTI, told us in oral evidence that “We talk to DFID in sectors that look as though they might be of interest. We have not done very much of that in the past. The dialogue has not been very productive”.³⁰⁵

159. UKTI additionally has responsibility for taking forward the Government’s international innovation agenda. DFID told us that the “issues identified in the Government’s Investment in Innovation paper tend to apply with even greater force in developing countries”.³⁰⁶ However, it is not clear that UKTI is the most appropriate partner for collaboration with DFID on international innovation in view of the fact that *Competing in the global economy: the innovation challenge* defined UKTI’s task as promoting a UK international innovation agenda “driven by the contribution it can make to wealth creation in the UK”.³⁰⁷ **It is essential that DFID can benefit and learn from developments in thinking in other Government departments. The DTI has invested significant resources in strengthening its understanding of, and ability to promote, innovation in the UK. This knowledge could also be profitably utilised for informing the UK approach to development. Since UKTI does not seem to be a natural conduit for dissemination of this information to DFID, we recommend that the Director General of Innovation at the DTI takes responsibility for sharing this knowledge with DFID.** The appointment of a DFID Chief Scientific Adviser should help to facilitate this process.

OST

160. The OST’s International Directorate has two main objectives: “(i) to plan, develop and manage UK involvement in the European Union’s science and technology activities; and (ii) to develop and strengthen such links with major scientific partners across the world, on a bilateral and multilateral basis, as hold the most promise of a scientific, commercial or political return to the UK”.³⁰⁸ With respect to the European Union, the Directorate’s main

302 Ev 322

303 Ev 322–323

304 Ev 323

305 Q 274

306 Ev 101, para 43

307 DTI, Innovation Report: *Competing in the global economy: the innovation challenge*, December 2003

308 <http://www.ost.gov.uk/ostinternational/>

activity is to oversee UK participation in the EU's Framework Programmes. In addition, the Directorate is responsible for UK involvement in the European Co-operation in the field of Science and Technology (COST). The International Directorate also manages government-to-government science and technology relations with countries and international organisations throughout the world. The role of the World Team is to co-ordinate the UK Government's policy interests in science and technology links with countries outside the EU.

161. Mr Maxwell from the ODI made the point that the problems facing developing countries “are not going to be solved and managed without a very serious research input which combines science and technology and social science, and that is something that needs to be very high on the agenda not only in DFID but also the OST”.³⁰⁹ We agree. **Science and technology for international development should be a priority for OST and we congratulate Sir David King, whose personal input and enthusiasm have played a key role in moving this issue up the UK Government agenda.** Possible weaknesses in OST support for UK researchers applying to the EU Framework Programme are discussed in paragraph 181, and interaction between DFID and the Research Councils is discussed in paragraphs 186–196.

British Council

162. The British Council's science sector has a global budget of £8 million, with dedicated science programmes in 62 countries, including 12 developing countries.³¹⁰ The British Council memorandum told us that “the two programme areas of the Council's science, engineering and environment sector deliver against the corporate objectives of i) increased scientific collaboration through the exchange of ideas, knowledge and information between young people in the UK and other countries, and ii) greater international awareness of the UK's role in scientific creativity and innovation”.³¹¹

163. Activities relating to developing and transitional countries include the development of ICT-based Knowledge and Learning Centres, “which provide opportunities for on-line and video-conferencing access to global information and knowledge, particularly from the UK, for students and professionals of all disciplines”.³¹² Additionally, the British Council is delivering a major global campaign on climate change in 2004–05, with the objective of raising awareness and stimulating debate. The British Council also runs an International Network for Young Scientists (INYS), with the intention of “encouraging and facilitating the mobility of, and direct contact between, young researchers”.³¹³ In 2003, INYS events on topics such as reproductive biotechnology and climate change were held in 17 countries, including China, Egypt, India and Zambia.³¹⁴ In addition, the Council manages the DFID's Higher Education Links scheme and the FCO Chevening programme (see paragraphs 118–124).

309 Q118

310 Ev 318, 393

311 Ev 319

312 Ibid

313 Ibid

314 Ibid

164. Despite the relatively small science budget of the British Council, several memoranda emphasised the key role of the British Council in representing UK science and technology in developing countries. Professor Gaines from Strathclyde University commented that “in practice it is the British Council that provides the gateway to British science and technology for developing and transitional countries”.³¹⁵ For this reason, he believed that it was “essential that the British Council has a full-time Scientific Officer in each developing and transitional country”.³¹⁶ The British Council told us that it “does not undertake centrally-driven audits of professional qualifications, preferring to devolve selection on the basis of generic and job-specific competencies, including strategic thinking, relationship building, entrepreneurship and scientific literacy”.³¹⁷ The British Council should ensure that in future it also records details of the professional disciplines or qualifications of its staff. **We believe that closer collaboration between scientifically qualified staff in the British Council and DFID Country Offices and the FCO science and technology network could yield mutual benefits and reinforce the UK’s scientific contribution to international development.**

Cross-Government co-ordination

165. It is apparent that there are opportunities for improving the effectiveness of UK spending on science, technology and research of relevance to international development through closer co-ordination between the relevant Government departments and agencies. DFID has understandably been cautious about associating itself too closely with departments such as the DTI and FCO whose objectives could potentially conflict with those of DFID. However, the Natural Environment Research Council (NERC) warned that the status quo, whereby “Most international interaction is stimulated by a ‘bottom-up’ approach of responding to opportunities, rather than following a coherent strategy” may offer flexibility but “can also be fragmented and short-term”.³¹⁸ NERC believed that this reduced the “potential benefits to the UK arising from science in diplomacy, for example, through building long-term relationships with overseas nationals who may do post graduate or post doctoral studies in the UK” and was concerned about the fact that “longer-term benefits to UK trade of a strong British presence in aid technology projects is not seen as the direct responsibility of either the DTI or DFID in setting their departmental policy objectives”.³¹⁹

166. One of the most important Government co-ordination mechanisms for international science and technology issues is currently provided by the Chief Scientific Adviser’s International Committee on Science and Technology (CSAIC). CSAIC, and a sister Committee, the International Science Technology Trade and Investment Committee (ISTTIC), chaired by the Chief Executive of UK Trade and Investment, were set up at the request of the Minister for Science and Innovation, Lord Sainsbury, in the summer of 2002.³²⁰ CSAIC aims to provide strategic oversight and co-ordination of effort to: establish

315 Ev 188

316 Ibid

317 Ev 393

318 Ev 277, para 7

319 Ibid

320 http://www.ost.gov.uk/ostinternational/world/2_2.htm

awareness of modern Britain as a world leader in science and technology; promote international research collaboration to the benefit of the UK science base and world science; and promote UK policy on issues with a science dimension. In pursuing its objectives, CSAIC focuses on activity in Europe, USA, Japan, Russia, India, China, Brazil, South Africa, Australia, Canada and South Korea.³²¹

167. It has recently been decided that CSAIC and ISTTIC will be replaced by a single committee, the Global Science and Innovation Forum. The terms of reference and membership of the new Forum have not yet been published, but it is likely that DFID, which joined CSAIC only recently, and Defra, which is not a member of CSAIC, will be amongst those represented on the new Forum. Although we welcome these moves to strengthen cross-Government co-ordination of international science and technology issues, we have reservations about the effectiveness of CSAIC and the Global Science Innovation Forum for delivering this objective. It is vital that DFID is integrated into the cross-Government science and technology machinery but it will also be important to respect the fact that DFID, unlike other Government departments, is uniquely focussed on international development rather than promotion of UK interests.

UK Funders' Forum

168. The Research Strategy announces DFID's intention to establish a UK Funders' Forum on International Development to "identify common opportunities with Research Councils and other government departments".³²² The Forum is also likely to include civil society and private sector representatives. Several witnesses have been supportive of the concept of a Funders' Forum. The Wellcome Trust said in its response to the Research Strategy consultation that it "would be enthusiastic to join the proposed Funders' Forum", but also suggested "a more defined focus" on health issues.³²³ **The Funders' Forum could be a very useful vehicle for promoting co-ordination of UK-funded research for development. In view of the large numbers of potential participants, we recommend that the Funders' Forum be subdivided by sector or theme to prevent it becoming too unwieldy. However, we remain highly concerned that DFID has not made sufficient provision for eliciting input from developing countries and do not see that the Funders' Forum as proposed will ameliorate this problem in any way.**

Co-ordination with other international bodies

169. DFID also identified the need for better co-ordination between the activities of international donors in its Research Strategy.³²⁴ This is in agreement with comments made in several memoranda of evidence. Macaulay Research Consultancy Ltd stated that "there is little doubt that the linkages between research funded by DFID (and other organisations) are, in some cases poor. There are many examples of DFID country offices being unaware of research projects that are being conducted in those countries. Often it is the research

321 Ibid

322 DFID, *DFID Research Funding Framework 2005–07*, May 2004

323 Wellcome Trust, *Response to Department for International Development (DFID) Research Funding Framework 2005–07 consultation*, July 2004

324 DFID, *DFID Research Funding Framework 2005–07*, May 2004

team that brings the attention of the project to the country office rather than DFID”.³²⁵ RCUK concurred, telling us that there was “considerable scope for pooling of resources and assessments of research requirements” and suggesting that DFID could “also increase its engagement with the international development programmes of the International Agencies, the European Union and its European partners” at country level.³²⁶ The move towards direct budgetary support should facilitate co-ordination with multilateral funding agencies and other donors at the country level and we are aware that DFID has been promoting efforts to harmonise donor requirements for PRSPs. In addition, Stephen Biggs suggested that “Programme/project assessment methods that encouraged awareness of what others are doing and then rewarded relevant and useful partnerships would help to” address “the persistent problem of ‘parallel’ research and development strategies, programmes and projects”.³²⁷

170. In Malawi we were disturbed to find examples of aid agencies managing research programmes in a way that caused further depletion of the already woefully inadequate human resources in the health service (see paragraph 143). Of the 480 nurses trained in Malawi last year, we were told that 400 were “missing in action” – that is to say, they were not employed in Malawi’s public health service. As well as the nurses who had moved abroad or joined the private sector, we heard that a significant proportion of those nurses had been recruited by research programmes run by aid agencies. We visited various DFID-funded programmes where the nurses split their time between the programme and working on hospital wards, but in programmes managed by certain other aid agencies, nurses appeared to spend 100% of their time working for the programme. We heard, for example, repeated complaints from staff at Lilongwe Central Hospital and at other local health projects about the alleged practices of the University of North Carolina (UNC) in recruiting nurses for research projects without any prior consultation. (We also heard that UNC had not delivered a promised new laboratory at the hospital, but had instead installed this on its own premises.) In evidence to us, UNC stated that for the past two years, since it had been made aware of the acute nursing shortage, it had an “explicit policy to not directly hire any nurses from the public sector”.³²⁸ The hospital’s Chief Nursing Officer has since disputed this claim and, while appreciating the assistance UNC undoubtedly gives the local health economy, says “it is high time we had a memorandum of understanding” governing how they should work together.³²⁹ This surely is the way forward and, in view of the desperate crisis in human resources in health services such as Malawi’s, donor practices which deplete front line services even further are impossible to justify. We were disappointed by the somewhat fatalistic attitude of the Secretary of State to such situations. He told us: “In the end each donor is responsible for what they do”.³³⁰ **DFID should build on the international respect that it commands for promulgation of best practice amongst aid agencies. We urge DFID to speak out against any examples of poor practice that it encounters in science, technology or research for international development.**

325 Ev 218

326 Ev 266, para 22

327 Ev 291

328 Memorandum from University of North Carolina [not printed]

329 Memorandum from Lilongwe Central Hospital [not printed]

330 Q 570

8 UK Research Capacity

Erosion of UK research capacity

171. UK scientists and engineers working in international development have, by and large, an excellent reputation. Dr Grant Singleton from Australia’s national science agency, CSIRO, told us that they “continually find that UK scientists in the agricultural and natural resource management sectors are held in very high regard by government officials, scientists, NGOs and small-holder farmers in developing countries in South Asia and South East Asia”.³³¹ Hubert Zandstra, Director General of the International Potato Center, also stated that the “expertise of British international staff has been crucial in the implementation of projects that advance scientific capacity in developing countries”.³³²

172. Unfortunately, there is now a dwindling supply of engineering and physical science students in the UK, and many witnesses expressed concern about the lack of opportunities for graduates of development sciences subjects in the UK. Dr Robin Matthews remarked that there was “no incentive for bright graduates to choose to make a career in tropical agricultural or environmental research, as there are not opportunities within the UK awaiting them when they complete their studies”.³³³ Rothamsted Research also told us: “It is essential that the role of science in agriculture and poverty alleviation is highlighted if DFID are to attract the best scientists; further erosion of some disciplines will mean that the numbers of scientists in the UK will be below a critical mass”.³³⁴

173. The University of Newcastle upon Tyne ascribed the erosion of the UK development sciences research base to the fact that: “our fees are comparatively high, and this combined with increasing reluctance by government to fund masters and doctoral training of scientists and engineers from developing countries has led to a steady decline in the numbers of students coming to the UK Universities to develop their skills [...] Importantly, the steady decline in this form of education has led to us falling below the critical threshold for the viability of courses to support this form of knowledge transfer, with the subsequent loss of whole programs of study”.³³⁵ We also heard that Pakistan has recently decided to exclude the UK from the list of recipient countries for its scheme to send 800 students to study abroad for PhD studentships (with the exception of a few awards to students selected to study at the most prestigious universities), on the grounds of the “high level of fees” in the UK.³³⁶

174. Numerous witnesses echoed the warning of the NRI that “the UK capacity to support S&T for development has eroded dramatically and is likely to continue to do so”.³³⁷ This could have serious consequences for the ability of the UK to contribute to the international

331 Ev 128

332 Ev 238

333 Ev 142, para 3

334 Ev 153

335 Ev 149

336 Ev 309

337 Ev 202

development debate. The UK Forum for Agricultural Research for Development stated that “Erosion of research capacity will lead to reduced opportunities for UK dialogue with developing countries at all levels and leverage on the international development agenda”.³³⁸ Furthermore, as NRI pointed out, “in many other countries (US, France, Holland, Germany) governments and their development agencies have recognised mechanisms of funding to ensure specialist research dedicated to international development is available and retained as part of the national S&T asset portfolio. This is seen as both adding to the effectiveness of aid policy and conferring significant benefits on the competitiveness of national S&T industry”.³³⁹ **The quality and strength of UK research has been instrumental in building the reputation of the UK in international development. If it is not averted, the current erosion of the UK development sciences research base will severely undermine the ability of the UK to play its full part in international development in years to come. The Government should not sit back and watch this happen, never mind contribute to the process of erosion.** This topic is discussed in more detail in paragraph 197–202.

Untying

175. Aid untying refers to the ability of other countries to compete for projects financed by donor countries. The UK is one of the few countries in the world to have untied both its aid and its research funding. DFID’s decision to untie research funding is highly controversial and DFID admitted to us that although “All donors have agreed to untie their official development assistance to least–developed countries, in line with the OECD/DAC Recommendation in 2002 [...] there is as yet no similar agreement to untie technical cooperation, and research is defined as ‘free standing technical cooperation’ and so is explicitly excluded from the untying agreement”.³⁴⁰ Nevertheless, DFID believes that untying of research follows the spirit of the original agreement to untie aid and has advantages to the developing world. The rationale for untying was two–fold: to enable the best people in the world to work on a particular problem, irrespective of their nationality; and to encourage other donors to follow suit. However, DFID conceded that whilst “there are no international official records on the extent to which donors untie their research aid, anecdotal evidence suggests that a large proportion of research aid remains tied”.³⁴¹

176. Sir David King, despite acknowledging the “commendable” rationale behind untying in terms of the potential benefits to developing countries, gave a highly pessimistic analysis of the likely consequences for the UK:

“DFID’s untying of research may well compromise the sustainability of the UK research base operating in areas of particular relevance to the developing world, and may serve to distance DFID from the Research Councils even further. Untying research may also result in a disengagement of other potential UK players in capacity building exercises with developing countries [...and...] may further undermine the UK research base in international development – in natural and social sciences—and

338 Ev 217, para 5

339 Ev 211, para 64

340 Ev 312

341 Ev 313

thus our own capacity in this area. This would be contrary to global calls for global action—especially given that the UK has strong technical experience and leadership in critical development areas, e.g. agricultural R&D, biotechnology and medical research. Untying research is likely to further distance policy interests between DFID and much of the rest of Government—whose interests are predominantly UK-centric, and would reinforce the arguably artificial division between British interests (and influence) and international development interests.”³⁴²

DFID should not have chosen to pursue a policy that the Government’s Chief Scientist now believes could be so damaging, without consideration of measures that could be taken, if not by DFID then by other Government departments, to minimise the negative impact of this policy on the UK.

177. DFID told us that UK organisations were well placed to win contracts in open competition and that this was demonstrated by the fact that approximately 72% of contracts issued since the International Development Act 2002 was introduced have been won by British and British-led groups (see Table 7). However, Table 7 does not indicate the size of the contracts awarded and it is not clear how many new research contracts of a significant scale have been awarded by DFID in the two years since the International Development Act 2002 was passed. For example, we understand that few, if any, major competitive contracts for health research programmes have been awarded since 2002. In August 2004, DFID invited Expressions of Interest for organisations wishing to run Research Programme Consortia in the health sector. DFID states that the consortia will typically comprise between four and six institutions, at least three of which should be in developing countries.³⁴³ Whilst the potential advantages of such a policy for capacity building in the South are readily apparent, this policy will also have the effect of reducing the funding going to UK research capacity even when UK institutions are successful in their bids for DFID research contracts. In view of the fact that very few other countries have opted to untie research funding and DFID is actively encouraging applications from researchers in other countries (particularly from the South), UK researchers are put at a disadvantage by DFID’s adoption of the policy of untying research funding at this time. In the longer term, this could have significant repercussions for the UK science base and the willingness of researchers to work on areas of value to developing countries.

178. Indeed, the way in which DFID has implemented its policy of untying of research funding has caused significant resentment and frustration in the development sciences community. The NRI complained that “DFID uses UK research organizations often for free and with no safeguards on intellectual property issues to contribute to its research planning (note the recent DFID call for proposals for the 2005 research planning process)” with the result that “UK research institutions are effectively caught in the trap of feeling obliged to assist DFID, with no guarantee of reciprocity”.³⁴⁴ The NRI was also concerned that the “hands-off relationship between DFID and the UK scientific community defended in the interests of fair and open competition has removed the opportunity for the UK S&T community to guide and inform government of cutting-edge options and opportunities”

342 Ev 392

343 DFID, *Research programme Consortia: Expressions of Interest Background Document*, August 2004

344 Ev 209, para 48

and told us that “stressing competition between research providers” could “seriously impair the formation of long-term alliances between different providers reducing opportunities to build on different corporate advantages”.^{345,346}

Table 7: Proportion of DFID Research Projects Contracted to UK-led Groups³⁴⁷

Research Area	1999–2000		2000–01		2001–02		2002–03		2003–04	
	Number of contracts	% UK-led	Number of contracts	% UK-led	Number of contracts	% UK-led	Number of contracts	% UK-led	Number of contracts	% UK-led
Health	19	100	12	100	11	91	6	100	1	100
Engineering	42	100	59	96	70	95	34	97	18	94
Renewable Natural Resources	152	87	100	74	54	52	78	51	33	54
Economics/Social/Political Science	10	100	100	98	36	100	38	86	14	85
Education	2	100	23	100	11	90	1	100	3	66

Source: DFID

179. We consider that DFID was rash in untying research funding without eliciting firm commitments from other countries that they would also adopt that policy over an agreed timescale. The current situation poses a threat to the sustainability of the UK development sciences research base and has therefore resulted in feelings of distress and disappointment towards DFID in the research community. Having taken this course of action, DFID must now redouble its efforts to persuade other countries to untie their research funding.

Full economic costs

180. The detrimental impact of untying is exacerbated by the fact that UK institutions have to include full economic costs in their bids due to their lack of core funding and UK Government policy. The NRI cautioned that “There is a serious threat that UK research expertise will be sidelined in favour of other European institutions core-funded by their governments, and heavily-endowed US universities. There are at present few signs that UK institutions are able to compete on a level playing field for development-linked research funds from those countries—in the case of USAID research funds they are virtually unable to compete at all”.³⁴⁸ Again, although there is a lack of data showing whether UK research groups have been adversely affected by these factors to date, the consensus amongst researchers is that it is just a matter of time before the impact is felt.

345 Ev 211, para 58

346 Ev 209, para 44

347 Data is for new contracts entered into.

348 Ev 210, para 49

EU Framework Programme

181. The 4th EU Framework Programme (1994–98) established a specific technological R&D programme for “Cooperation with third countries and international organizations” (INCO).³⁴⁹ Mr Benn told us that he understood that the UK “has the highest success rate in making bids” for INCO.³⁵⁰ However, we heard that the lack of core funding for institutes has also impacted on the ability of UK research groups to bid for EU Framework Programmes, although this may not yet be reflected in the success rates for UK applications. Professor Haines from the London School of Hygiene and Tropical Medicine told us that he had had “quite difficult experiences with the EU”, and complained that it was “bureaucratic” and that establishing the required networks was “quite time-consuming”.³⁵¹ Professor Maudlin, CTVM, went further, describing himself as “Battle scarred” from the process of applying for EU funding and declaring: “I would not again subject myself to applying for money from them”.³⁵² Dr Cotton, Director of WELL, commented that it “would help if British government policy changed. Certainly, from where we sit, if we are making a serious EU application we have to look very carefully at that and we do have to treat it as something which does not recover our overheads”.³⁵³

182. We also highlighted this issue in our Report, *UK Science and Europe: Value for Money*, in which we observed that the “UK Government’s refusal to contribute to the indirect costs associated with Framework Programme grants compromises the already delicate finances of our universities and therefore the participation of our best researchers”.³⁵⁴ In the same Report, we also urged “the Government and RCUK to continue to bring pressure to bear on the Commission to improve the application process, in particular to reduce the time taken in producing and issuing contracts”.³⁵⁵ We are disappointed with the progress to date. *The Science and Innovation Investment Framework 2004–2014* acknowledged the problems associated with the lack of payment of full economic costs by the Framework Programme, but provided no specific response other than “In negotiations for the next Framework Programme, the UK will argue for a higher proportion of the total cost of research projects to be paid”.³⁵⁶ **We believe that the UK Government should, as many other governments do, provide matching funding to cover the overheads of EU Framework Programme research awards.**

Move towards in-country training

183. CAB International suggested that the growing emphasis on in-country training and South–South partnerships could also be contributing to the decline in UK research capacity: “the world is changing and developing countries now naturally demand that their

349 <http://www.cordis.lu/inco/home.html>

350 Q 588

351 Q452

352 Q 473

353 Q 411

354 Sixth Report of the Science and Technology Committee, Session 2002–03, *Science and Europe: Value for Money*, HC 386–I

355 Ibid

356 HM Treasury, DTI, DfES, *Science and innovation investment framework 2004–2014*, July 2004

own institutions are supported to meet their own needs. This does not diminish the value of the UK science base, but requires new mechanisms by which it can legitimately engage with developing country needs”.³⁵⁷ However, Professor Lwakabamba from the Kigali Institute of Science, Technology and Management in Rwanda expressed great enthusiasm for collaborations between North and South, and was keen to point out that new universities, which often had a greater emphasis on applied R&D and knowledge transfer, made particularly good partners.³⁵⁸ Glasgow Caledonian University agreed with the latter point, telling us that “Modern universities such as Glasgow Caledonian are well placed to collaborate with higher education institutions in the South building science capacity because they have built their applied research capacity up over a considerable number of years and are focused on graduating students to meet the needs of employers”.³⁵⁹ We also saw examples in Malawi of North–South collaborations yielding genuine benefits for both parties, including the Higher Education Link in environmental health between the Universities of Malawi and Strathclyde. **We strongly encourage the building of North–South partnerships in science, technology and research.**

Research Assessment Exercise

184. Many witnesses lamented the poor recognition given to research for international development by the Research Assessment Exercise (RAE) and the consequences of this for the UK research base. The London School of Hygiene and Tropical Medicine drew attention to the fact that the RAE “focuses only on research achievements and gives no credit for policy transfer or capacity strengthening activities”, and asserted that as a result, “the present HEFCE funding arrangements linked to the RAE act as disincentives for Higher Education Institutions to be involved in capacity transfer and institutional strengthening”.³⁶⁰ Professor Julian Evans also stated that “University research assessment exercises are inimical to collaborative work with partners in developing countries”.³⁶¹ In addition, the multidisciplinary nature of development sciences makes it more difficult to assess, whilst the focus on applied research of relevance to end users means that even world class development sciences research has sometimes been dismissed as second–rate science. We heard from more than one development sciences research institution that they were either previously, or currently, not receiving any quality–related research (QR) funding at all.³⁶² DFID no longer provides any core funding for UK based institutes so adequate QR funding could make a significant impact on the financial stability and sustainability of these institutes.

185. HEFCE have now published the units of assessment for the 2008 RAE, which include a unit of assessment for “Development Studies”.³⁶³ It is clear that HEFCE’s interpretation of

357 Ev 163

358 Informal private meeting with Professor Lwakabamba

359 Ev 332

360 Ev 134

361 Ev 257

362 e.g. Q 407

363 Higher Education Funding Council for England, Scottish Higher Education Funding Council, Higher Education Funding Council for Wales, Department for Employment and Learning Northern Ireland, *RAE 2008: Units of assessment and recruitment of panel members*, July 2004

Development Studies has a strong social science bias, as evidenced by the fact that the Development Studies unit of assessment is part of a main panel that also covers Law, Politics and International Studies, Social Work, Sociology and Anthropology.³⁶⁴ Whilst this new unit of assessment may be welcomed by those working in the specific areas of research collectively known as “development studies”, it is unlikely to address the wider problems experienced by researchers working in many other areas of science targeted at developing world applications. We have recently published a report addressing the developments in the RAE in detail.³⁶⁵ **The lack of recognition awarded to development sciences in the Research Assessment Exercise has marginalised the development sciences community and helped to compromise the sustainability of some research institutions and groups. Future Research Assessment Exercises must use appropriate criteria and assessors with relevant expertise to ensure that much greater credit is given to all high quality development sciences research and capacity building activities, and the development sciences community needs to be reassured that this will be the case. Academics must be properly rewarded for engaging in capacity building activities and spending time working in developing countries in a way that contributes towards sustainable development.**

UK Research Councils

186. Several memoranda of evidence made reference to the lack of connection between the very different research funding requirements of DFID and the Research Councils. The Natural Environment Research Council, for example, commented that “good research ideas often fail to be funded, being too applied for the research councils, but too ‘scientific’ for DFID”.³⁶⁶ The John Innes Centre also noted that the “Research Councils do not have a clear collective policy on delivery of publicly funded science to the world’s poor”.³⁶⁷

187. The Medical Research Council (MRC) told us that in 1993, the “MRC and DFID agreed a Concordat through which DFID influences MRC’s portfolio of research relevant to developing countries and funds a substantial share of the work”.³⁶⁸ The portfolio of research under the Concordat amounted to £23 million in 2002–03, of which DFID contributed £4 million. DFID representatives sit on various MRC boards, e.g. for evaluation of research proposals, and advisory committees. MRC reported that “the Concordat was assessed and renewed in 1998. At the request of MRC and DFID, the Swiss Tropical Institute was mandated to carry out a further review in 2001 to evaluate the effectiveness of the arrangements. MRC also arranged for a scoping study to be conducted to provide advice on its strategy for investment in developing countries in relation to need, scientific opportunity and potential to reduce poverty. The conclusions of the interim report and the scoping study will inform the future operation of the Concordat, the renewal of which is currently being negotiated”.³⁶⁹

364 Ibid

365 Eleventh Report of the Science and Technology Committee, Session 2003–04, *Research Assessment Exercise: a re-assessment*, HC 586

366 Ev 277, para 8

367 Ev 259

368 Ev 273, para 3

369 Ibid

188. MRC also provided an example of the impact of research carried out under the Concordat: “One of the most significant public health measures to have emerged from work supported under the MRC/DFID Concordat has been the introduction throughout the world of programmes to distribute and promote the use of insecticide-impregnated bed-nets to prevent the transmission of malaria and reduce child mortality”.³⁷⁰ Nick Winterton, Executive Director of MRC, told us that in his view the concordat was important because it set out “procedures whereby DFID can play a formal part in helping to shape the MRC’s programme”.³⁷¹

189. MRC explained to us that it had “made a conscious decision” that it had “a responsibility to make a contribution to the health needs of the developing world”, and therefore allocated approximately five per cent of its budget to work “almost exclusively of relevance to the developing world” and about ten per cent to work “broadly supportive of that”.³⁷² Nick Winterton from MRC also told us that he thought that there was “a very good argument” for some of the money that MRC spends on development work being drawn from the aid budget.³⁷³

190. The Economic and Social Research Council (ESRC) also funds work in developing countries. ESRC explained its reasoning as follows: “The scope of the social sciences is international. They transcend national boundaries and nation states in their methods and subjects of enquiry, and in the knowledge which they produce. The Council strongly believes that research in the social sciences flourishes in an open and internationalist perspective [...] the wellbeing of developed and developing countries are increasingly interdependent”.³⁷⁴ Professor Ian Diamond, Chief Executive of ESRC, reported that although ESRC did not have one currently, he was “expecting to have a Concordat during 2004 with DFID”.³⁷⁵

191. The Natural Environment Research Council (NERC) also believed that it had a remit to research global problems and told us that “Knowledge arising from NERC funded science is often transferred internationally, for example, through work commissioned by DFID, other aid agencies, development banks or foreign governments and international organisations, or through collaborative programmes”.³⁷⁶ Furthermore, NERC said that all its projects aimed “to build capacity by working with developing country national institutions. We provide training, at all levels, through on-the-job experience in the whole spectrum of research from project planning, to writing up and dissemination of the results”.³⁷⁷ Professor Lawton, Chief Executive of NERC, told us that the NERC Concordat with DFID lapsed in 1999 and NERC had “never been able to get back in”.³⁷⁸ We

370 Ev 274, para 9

371 Q 461

372 Q 456

373 Q 458

374 Ev 270, para 1

375 Q 80

376 Ev 277, para 6

377 Ev 279, para 23

378 Q 184

understand that Mr Benn has now established contact with NERC and discussions are taking place about future interaction between NERC and DFID.

192. The Biotechnology and Biological Sciences Research Council (BBSRC) told us that although it “does not fund research projects in universities or institutions situated in developing countries”, much of the research that it funds in the UK, “especially in the areas of agriculture and management of natural resources is taken forward by researchers and their institutions with contacts in developing countries”.³⁷⁹ In addition, “BBSRC-sponsored Institutes collaborate with developing countries, often in association with national or international funding agencies”.³⁸⁰

193. In oral evidence, Professor John Pickett, Head of the BBSRC Biological Chemistry Division, appearing alongside Professor John Lawton, Chief Executive of NERC, gave a highly critical assessment of DFID’s treatment of science, citing flaws in its approach to pest control in Africa and the distribution of “very, very small bags of fertilizer” in Malawi as evidence of DFID’s “unsustainable and non-scientific” approach.³⁸¹ However, we subsequently received information refuting the validity of Professor Pickett’s accusations about these specific examples. Indeed, a recent letter published in *Nature* commented that “Far from being unscientific”, the seed and fertilizer distribution programme to which Professor Pickett referred “was based on a thorough knowledge of the constraints faced by farmers and the production dynamics of Malawian agriculture”.³⁸² The letter goes on to state that “there are good opportunities for science to serve development needs, provided that there is effective communication on both sides”.³⁸³ Professor Pickett’s thesis that DFID was not making good use of the UK science base was backed up by many other witnesses. **The scientific community must take care that disillusionment with DFID’s approach to science does not lead it to be universally dismissive of DFID’s work. Effective development sciences research is wholly dependent on a thorough understanding of the development context, as well as the science.**

194. We were disappointed to hear from witnesses that the Engineering and Physical Sciences Research Council (EPSRC) was “not interested in work that is focused on developing countries”.³⁸⁴ The Chief Executive of EPSRC, Professor John O’Reilly, also told us that there was not “a direct link” between the EPSRC mission and international development.³⁸⁵ Nevertheless, RCUK did acknowledge that “While EPSRC research is focussed on the needs of the UK it is likely that some of its supported research, for example in energy, transport, urban development and waste minimisation, offers the potential for adaptation in a development context”.³⁸⁶ **It is very regrettable that the Engineering and Physical Sciences Research Council chooses to exclude international development from its mission.**

379 Ev 269, para 1

380 Ibid

381 Q 191, 192, 210

382 Edward H. Allison, “Communication is key to aid development efforts”, *Nature*, Vol. 430, p. 829, 19 August 2004

383 Ibid

384 Ev 148

385 Q 377

386 Ev 264

195. In view of the apparent inconsistency in the policies of the various Research Councils on funding research for international development, the Committee questioned Sir Keith O’Nions, Director General of the Research Councils, about his understanding of the situation during his introductory evidence session on 12 May 2004. Sir Keith’s response indicated that it would be within the remit of the Research Councils to fund such research: “Given that Research Councils are the bodies that are funding the greater part of the basic science and most of the applied science in the UK—and therefore have access to a massive part of our intellectual wealth and scientific wealth—and if government policy is calling for that to be deployed progressively in international development, they must have a part to play”.³⁸⁷

196. Furthermore, there is growing awareness of the global span of many of the most important research problems. The NRI commented that “the potential effects of globalisation and climate change mean that the value of research conducted in developing countries is becoming increasingly relevant to the UK”, whilst the Centre for Development and Poverty Reduction at Imperial College additionally highlighted “pandemic diseases; biosecurity (and its effect on ecosystems and trade); bio-technology for small / poor farmers; information technology revolutions” as problems that “require shared knowledge and co-operation” between the North and South.^{388,389} Research on issues primarily relevant to developing countries can yield additional benefits. For example, the University of Newcastle upon Tyne asserted that “lack of money necessitates imaginative thinking” such that “the restricted options of the developing world often lead to more innovative research solutions to problems than those developed in the affluent west – and these research solutions can also benefit UK PLC”.³⁹⁰ Professor David Taylor also pointed out that research aimed at developing world problems “has led to some very important spin-offs for the UK. For example, a study of the immunology of protective immunity against schistosomes (bilharzias) and the role played by eosinophils has made a very major contribution to an expanding knowledge of allergic diseases that are so prominent in the UK and a major cost to the NHS”.³⁹¹ **We are of the view that the UK Research Councils can play an important role in funding research for international development and consider that such research is highly likely to deliver additional, incidental benefits for the UK. The Research Councils should adopt a clear and consistent approach to the funding of scientific and technical research for international development.**

Responsibility for UK research capacity

197. DFID has previously stated that it does not believe that it has any responsibility to maintain UK research capability *per se*, although in the final evidence session of this inquiry, Mr Benn conceded that DFID had “a shared interest and therefore [...] a shared responsibility”.³⁹² However, Sir David King was adamant that DFID should take the lead in ensuring that a core competence in international development sciences is maintained in

387 HC 461-I, Q 50

388 Ev 206, para 19

389 Ev 149

390 Ev 148

391 Ev 243

392 Q 584

the UK.³⁹³ **The fact that no single person or department is taking responsibility for science and technology of relevance to international development has undoubtedly had a detrimental impact on the UK development sciences research base. Even though DFID did not consider it to be within its remit, it could and should have done more to raise awareness across Government of the serious problems being experienced by development sciences researchers in the UK. Nevertheless, DFID does not exist to promote the interests of the UK, and we believe that it would therefore be inappropriate for DFID to take a leadership role in maintaining UK research capability. The most logical arrangement would be for OST, through the Chief Scientific Adviser, to take responsibility for cross-Government co-ordination and, through RCUK, for the maintenance of the UK skills base in development sciences.**

Development Sciences Research Board

198. The UK has now stated that science and technology for international development is a priority for Government R&D.³⁹⁴ It is therefore essential that the UK puts in place some mechanism to safeguard and enhance the ability of the UK to undertake research to support international development. The Funders' Forum proposed by DFID should promote co-ordination of development sciences research being carried out by different UK-based donors, but will not take responsibility for the maintenance of the UK skills base. Indeed, as argued above, it would not be appropriate for DFID to take the lead in building UK research capacity. The multidisciplinary nature of development sciences also means that there is no obvious mechanism for managing the development sciences skills base or providing an effective dedicated funding route through the existing RCUK structure. Moreover, the magnitude of the scientific and technical obstacles to achievement of the MDGs, as well as the enormous benefits that progress in science and technology could deliver to developing countries, call for a major expansion of research effort towards this end. The establishment of a Research Council for development sciences could take considerable time and would require a new Act of Parliament. In addition, development sciences research is multidisciplinary and the funding body for development sciences should therefore include representatives from all the existing Research Councils. **We propose that a cross-cutting Development Sciences Research Board be established with a mandate to award grants for development sciences R&D to UK-based institutions.**

199. The Development Sciences Research Board would come under the umbrella of RCUK but would not exist as an autonomous Research Council. The Board would be headed by an eminent scientist with extensive expertise in development, and the Board would include representatives of all the Research Councils, as well as DFID (and potentially other Government departments). Although the Board would award grants to UK institutions, proposals would need to be demand-led and include partnerships with institutions or research groups in developing countries, as is the case for the Darwin Initiative. The Board would also take responsibility for sustaining the UK skills base in development sciences. In addition, the Board would need to develop a strategy, in consultation with DFID, identifying the countries and research areas of priority to the UK.

393 Q 250–251

394 HM Treasury, DTI, DfES, *Science and innovation investment framework 2004–2014*, July 2004

200. The Research Councils would be able to continue supporting any current work of relevance to international development although the significant funding currently channelled through the MRC concordat with DFID would, in future, be routed through the Board. This would not affect the concordat-funded projects directly; these could continue as before. Importantly, the Board would be in addition to, and would not replace, DFID expenditure on research. DFID should continue to fund research to inform its own policy making and for the global good – establishment of the Development Sciences Research Board would represent a much needed expansion of the research effort towards poverty reduction.

201. We have been impressed by the Chancellor's policy of supporting the reduction of international poverty and applaud the announcement in the 2004 Comprehensive Spending Review that the UK Government intends to raise overseas development assistance to 0.7% GNI by 2013, if not before.³⁹⁵ This would amount to approximately £9.7 billion.³⁹⁶ **We believe that the recent substantial increases in the aid budget would be complemented by a commensurate increase in the availability of funding for development sciences R&D in the UK, in order to strengthen the evidence base available for international development policy-making, and to safeguard the UK's ability to maintain a leadership role in this field. We estimate that an initial budget of approximately £100 million per annum would be required for the Development Sciences Research Board to fulfil its role effectively.** Of this, £23 million could be derived from MRC's current concordat with DFID, but the remainder should be "new" money. This funding represents a very small fraction of total UK overseas development assistance. If it were to be designated as part of the UK's overseas development assistance, it would mean that the UK could no longer claim to have fully untied its aid budget. However, there is no reason why this amount could not be taken into account in the calculation of future aid spending and effectively subtracted from the amount allocated to overseas development assistance.

202. The Development Sciences Research Board would award grants on the basis of excellence, as judged by peer review, taking into account the fact that high quality development sciences research may have quite distinctive characteristics compared with high quality research in other disciplines. This should address the concerns of researchers such as Professor David Taylor, CTVM, who told us that "Many of the best researchers are also deterred from engagement with the development sector because they perceive, rightly or wrongly, that development administrators lack an understanding of the complexity of biological systems and scientific method".³⁹⁷ The Centre for Development and Poverty Reduction at Imperial College suggested that "research priorities should be linked to (a) the potential risks that an issue poses to achievement of the Millennium Development Goals, as well as its potential contribution to hastening their achievement, and (b) comparative advantage of the UK in that field".³⁹⁸ We would suggest, in the first instance, the establishment of a small working group of representatives from the Research Councils and DFID, plus representatives from the research and user communities, to address

³⁹⁵ HM Treasury, *2004 Spending Review*, July 2004

³⁹⁶ based on the current UK GNI

³⁹⁷ Ev 241, para 8

³⁹⁸ Ev 149

implementation of this proposal and the terms of reference and *modus operandi* for the Development Sciences Research Board.

9 Conclusion

203. DFID has an excellent and well-deserved reputation in international development. Despite this, we have found clear deficiencies in its approach to science, technology and research. We are encouraged by the willingness displayed by DFID, under the leadership of the current Secretary of State, Mr Benn, to take on board the criticisms made during this inquiry and acknowledge the recent developments in DFID that have been undertaken with the intention of strengthening its handling of science and research. However, we have concerns that DFID, in its haste to resolve areas of difficulty, may be underestimating the nature of challenge. DFID staff need to recognise the cross-cutting, underpinning qualities of science and technology and the contribution that they can make to international development: science should play a far greater role in influencing DFID policy development than has been the case so far. In addition, DFID's failure to fully appreciate the value of research has sometimes undermined its ability to undertake evidence-based policy making. Surmounting these difficulties will require a change in culture, not just a change in policy. We believe that the appointment of a CSA with the right credentials will be an important first step that should have a very positive impact on DFID's treatment of science and research.

204. The strength of the UK's reputation in international development has enabled DFID to adopt a leadership role in the international donor community. DFID, regrettably, has been slow to acknowledge that the quality of UK research has contributed greatly to building the UK's reputation in international development. There is now an urgent need to improve the status of development sciences research in the UK and for somebody in Government to take responsibility for UK research capacity in this area. For many scientific disciplines, the applied nature of development work has made it the poor relation. We propose the establishment of a Development Sciences Research Board to expand the research effort towards poverty reduction and to ensure the preservation of the UK development sciences research base.

205. As Rothamsted Research told us, "Poor countries do not deserve poor science".³⁹⁹ The UK Presidencies of the G8 and EU in 2005 provide a unique opportunity for the UK to galvanise global support for science and technology capacity building and strengthening of the research effort required to make effective progress towards the MDGs. An increased focus on the value and importance of science and technology for international development could also have a positive impact on the appeal of science and technology qualifications in the UK, attracting students who are motivated by the idea of helping to solve global problems and contributing to poverty reduction. This, in turn, serves to illustrate the fact that international development can indeed deliver benefits to both North and South.

Conclusions and recommendations

Importance of science and technology for development

1. Science and research can engender a culture of inquiry, openness and respect for evidence that can have positive spill-over effects on the wider community. Indeed, a scientific, or evidence-based, approach to policy making is an integral component of good governance. (Paragraph 15)
2. In order to develop, every country requires access to, and the ability to utilise, scientific and technical knowledge. (Paragraph 16)
3. We welcome the fact that the UK Government has now explicitly stated its commitment to the application of science, technology and research to international development. (Paragraph 18)

DFID Approach to Funding

Direct budgetary support

4. DFID has not provided us with a satisfactory description of how its needs for science and technology advice are changing as a result of the increased use of direct budgetary support, or any convincing evidence that it has made a formal assessment of this. It is troubling that DFID have not considered the full ramifications of this significant policy shift. We recommend that it does so. We regard scientific and technological capability as an important part of good governance. It should therefore be a condition of budgetary support. (Paragraph 22)
5. We are concerned that the ability of science, technology and research to contribute to progress towards the Millennium Development Goals is being hampered by the Poverty Reduction Strategy process, as currently implemented. (Paragraph 24)
6. We conclude that DFID has given insufficient consideration to how best to help developing countries identify their requirements for scientific and technological advice and research, and how to ensure that science, technology and research are represented appropriately in developing countries' Poverty Reduction Strategy Papers. Since Country Office staff are unlikely to have the full range of technical expertise or experience required to supply effective independent advice, DFID should work together with other donors to develop specific guidance on best practice in this area. (Paragraph 27)
7. Sustainable capacity building is a slow process and investment is therefore needed now if developing countries are to have any chance of developing the necessary capabilities in science, technology and research in coming years. In view of the short-term perspective of Poverty Reduction Strategy Papers, there is a case for DFID, in collaboration with other major international donors, to develop capacity building strategies with each country. For those countries where national science, technology and research systems are so weak that capacity building will not make an

impact for the foreseeable future, DFID needs to have a coherent and transparent strategy to help them identify their priorities in science, technology and research, and to ensure that these are appropriately represented in developing country Poverty Reduction Strategy Papers. (Paragraph 29)

Short-term aid versus long-term capacity building

8. We urge DFID to develop clear guidelines to inform decisions on the balance between short-, medium- and long-term aid provision, as well as clear country-specific policies with respect to this balance. (Paragraph 31)

Interpretation of the Millennium Development Goals

9. We are pleased to hear DFID acknowledge the importance of science, technology and research for achievement of the Millennium Development Goals, but we are not convinced that these words have been translated into policy or practice. We remain concerned that technology-intensive areas such as infrastructure, energy, water and sanitation are at risk of being neglected by DFID and other donors due to their omission from the headline Millennium Development Goals. (Paragraph 35)

Multilateral funding routes

10. We fully agree with the Secretary of State that rigorous evaluation of the effectiveness of funding channelled through different multilateral agencies is “a perfectly rational, sensible thing to do”, and are therefore surprised that DFID is only now beginning to adopt such an approach. (Paragraph 37)
11. It is not acceptable that 25% of DFID’s funds have been potentially allocated to development programmes that are widely perceived to have been of dubious effectiveness. DFID has responsibility for ensuring that the multilateral routes through which UK aid is channelled represent good value for money for UK taxpayers. DFID’s past failure to monitor its multilateral investments has been a hindrance to ensuring that this expenditure makes an effective contribution to meeting DFID’s objectives. (Paragraph 39)

Public-private partnerships

12. We support DFID’s increasing emphasis on the role that public-private partnerships can play in facilitating research for development where costs would otherwise be prohibitively high, or there would be no incentive for private sector involvement, and where the benefits are clear for the developing country partners. (Paragraph 43)

Scientific and Technological Expertise in DFID

In-house expertise

13. It is hard to understand how DFID can be content that it has adequate expertise in science and research when it is not monitoring the numbers of staff who have

relevant qualifications or a background in research. This must change. We believe that the current levels of scientific and technical expertise are insufficient to ensure that DFID can behave as an intelligent customer for science, technology and research. There is a pressing need for DFID to increase the number of in-house staff with a research background, particularly in the natural sciences. (Paragraph 54)

14. We conclude that DFID is failing to utilise key sources of scientific and technological knowledge. DFID needs to have a critical mass of in-house expertise to identify its own needs for science, technology and research and the most appropriate sources of such advice. DFID's increasing dependence on outsourcing of research management and the erosion of the cadre of scientific and technical staff mean that it is no longer in a good position to do so. (Paragraph 56)
15. DFID would derive much benefit from the secondment of scientists into the Department and we recommend that it takes active steps to implement this practice, particularly in existing areas of weakness. (Paragraph 57)

Chief Scientific Adviser

16. We welcome the announcement that DFID has finally decided to appoint a Chief Scientific Adviser and are pleased that our work helped DFID to reach its decision. However, the review to establish a need for a Chief Scientific Adviser in DFID was superfluous in view of the stated Government policy. It also came far too late in the day. The fact that it took so long for DFID to accept the need for a Chief Scientific Adviser was in itself indicative of a weak scientific culture in DFID. (Paragraph 59)
17. The DFID Chief Scientific Adviser should be a natural scientist with extensive development expertise. (Paragraph 61)
18. In order for a DFID Chief Scientific Adviser to be effective, the position should be full time and a team of scientifically-literate support staff will be essential. If the Chief Scientific Adviser is not granted the necessary resources, or is not given a central role with seniority commensurate with the highest ranking Chief Scientific Advisers in other Departments, DFID's decision to appoint a Chief Scientific Adviser will amount to little more than tokenism. (Paragraph 62)

Policy Division

19. We support DFID's decision to adopt a cross-disciplinary approach within the Policy Division to address specific problems in developing countries. However, a significant proportion of DFID's partners, including many developing country governments, operate on a sectoral basis. DFID therefore needs to ensure that its partners have information about, and access to, the relevant contact points within the cross-disciplinary teams. (Paragraph 64)
20. We are alarmed by the picture presented by the evaluation report of the Policy Division reorganisation and the evident weaknesses in DFID's attempts at change management. In view of the pace of change within the department, we sincerely hope that DFID has learned the lessons of this traumatic reorganisation. (Paragraph 65)

21. The downgrading of the Chief Adviser positions has caused consternation in the development sciences community. We do not understand the rationale for this decision and take it as further evidence of DFID's urgent need for a Chief Scientific Adviser. We consider that it was ill-advised for DFID to undertake this additional reorganisation of the Policy Division prior to the completion of the review to determine whether to appoint a Chief Scientific Adviser and consideration of what staff would be required to support him or her. (Paragraph 66)
22. We can only surmise that research has not received the attention it merits in DFID in the past. We hope that this new arrangement will indeed be an improvement. DFID will also need to take care that separation of the Policy Division and Central Research Department does not impede the interaction between research and policy-making in DFID. (Paragraph 67)

Country Offices

23. We are pleased that DFID now realises the importance of monitoring the scientific and technical qualifications of its Country Office staff. It is not before time: these staff play a central role in the Poverty Reduction Strategy process and the commissioning of country-specific research and policy analysis. It is a major failing that DFID has not put in place proper systems to ensure that Country Offices are staffed by people with the necessary background and expertise to support developing countries effectively, particularly in the light of the move towards the Poverty Reduction Strategy Paper approach. We recommend that DFID establish minimum levels for the numbers of staff with appropriate scientific and technical qualifications in each country or, where appropriate, region. (Paragraph 70)

Knowledge management

24. We appreciate that DFID considers the research that it commissions to be for the global good, but it should be axiomatic that such research will also be utilised for the development and refinement of DFID's own policies. (Paragraph 71)
25. DFID needs to provide greater technical support to its Country Offices. (Paragraph 74)
26. DFID and its clients are not getting the most out of the research it commissions due to the poor links between the Central Research Department and the Country Offices. We recommend that the Central Research Department work more closely with the Heads of Profession and regional departments to ensure that Country Offices receive the information they require, in a readily digestible form. (Paragraph 74)
27. We recommend that DFID stipulates in its research contracts that researchers must make their research results, including any large data sets collected, publicly available within a reasonable period following completion of the work. (Paragraph 75)

DFID Approach to Science, Technology and Research

Lack of scientific culture

28. We are not persuaded that DFID has fully grasped the cross-cutting nature of science, and the breadth of the contribution that it can make to meeting international development objectives. (Paragraph 77)
29. The ten-year investment framework represented one of the most significant developments in UK science for several years. The fact that DFID gave only a cursory contribution reinforces the idea that DFID does not consider itself to be a department that has a significant involvement in science and research, and further highlights the need for DFID to have a high level staff member responsible for cross-Government liaison on science, technology, innovation and research. By failing to engage properly in these discussions, DFID may have missed an important opportunity to make the case for increased funding for science, technology and research in DFID. (Paragraph 78)
30. We reiterate that natural and social science both have roles to play in international development, as do basic, applied and operational research. (Paragraph 80)
31. We congratulate DFID for having sponsored some excellent research programmes that have made worthwhile contributions to poverty reduction. Regrettably, DFID has not always recognised the value of the work that it sponsors. It is impossible for DFID to gain the full benefit of the research that it commissions until there is widespread appreciation amongst its staff of the true worth of science and research for international development. (Paragraph 82)

Evidence-based policy making

32. We conclude that DFID has failed to devote sufficient attention to evaluation of research. DFID must ensure that its past deficiencies in evaluation of research are rectified. We welcome the fact that DFID is strengthening its evaluation department and is now undertaking evaluations of two major research programmes in renewable natural resources and engineering, and also note that DFID's recent publications, such as the new HIV/AIDS Strategy, *Taking Action*, place greater emphasis on evaluation. However, resolving this problem will require a culture change within DFID as well as good intentions and the increased resources already at its disposal. (Paragraph 86)

Funding international research organisations—the case of CGIAR

33. It is not for us to form a judgement on whether or not DFID was right to increase its investment in the Consultative Group on International Agricultural Research from £10 to £20 million per annum. However, we are surprised and disappointed by DFID's inability to provide concrete evidence for the basis of this decision. It is unacceptable for DFID to make an investment of this scale without being able to provide a considered justification. (Paragraph 88)

Research Strategy

Consultation process

34. Whilst we realise that DFID's decision to open the draft Research Strategy for consultation gave the opportunity for those who so wished to comment on it, we are concerned that the original consultation process caused so much disquiet amongst the development sciences community. Irrespective of whether the lack of consultation affected the quality of the draft Research Strategy, by creating the impression that it was not interested in utilising the extensive experience of leading development scientists in the UK, DFID has damaged its relationship with the UK research base. (Paragraph 91)
35. It is highly regrettable that DFID appears to have given so little attention to gaining developing country input to the Research Strategy. DFID's failure to incorporate the views of developing countries into the Strategy makes a mockery of its claim to follow a demand-led approach and calls into question the value of the Strategy. (Paragraph 92)

Future research topics

36. DFID's decision to focus research in a limited number of areas is sensible and we are broadly supportive of the priorities identified. However, we urge DFID to take into account the enabling role of engineering and technology in meeting the identified priorities. (Paragraph 93)
37. It is a source of alarm that DFID did not seek to learn the lessons of its £200 million investment in the Renewable Natural Resources Research Strategy Programme prior to the development of a new Research Strategy. This is suggestive of poor planning and management. DFID's decision to develop a new Research Strategy at this time, in the absence of key information and a DFID Chief Scientific Adviser, was imprudent. (Paragraph 94)

Wider approach to research

38. We agree that DFID would benefit from horizon scanning activities and encourage DFID to learn from the experience of other Government departments. (Paragraph 95)
39. A high priority for DFID's new Chief Scientific Adviser must be to develop a coherent policy on science, technology and research that encompasses issues such as the provision of scientific and technical advice to DFID and the effective use by DFID of scientific knowledge and research results to promote innovation. (Paragraph 96)

Capacity Building in Developing Countries

The need for capacity building in developing countries

40. We believe that capacity building in science and technology can yield a panoply of benefits for both North and South, including stronger research and education systems in developing countries, and the fostering of international relations. (Paragraph 101)
41. Whilst we agree that access to knowledge is vital, the capacity to utilise knowledge needs to be developed in tandem if any benefits are to be derived from the availability of new information. This requires both human resources and physical infrastructure. (Paragraph 102)

UK commitment to science and technology capacity building in developing countries

42. We firmly believe that the UK has an obligation to support capacity building in science and technology for development and welcome the fact that the Government has now affirmed its commitment to do so. (Paragraph 103)
43. DFID should commit significant extra funding specifically for capacity building, over and above the existing research budget. In addition to the funds for capacity building that are currently channelled through the central research budget, DFID Country Offices should play a much greater role in capacity building. However, a major collective international effort with a long-term horizon is vital for sustainable science and technology capacity building to be effected on the scale required. DFID should take advantage of its leadership roles in NEPAD and the Commission for Africa, as well as the forthcoming UK Presidencies of the G8 and EU, to call for an international science and technology capacity building strategy supported by the necessary resources. (Paragraph 106)

Trends in capacity building

44. Technical assistance must play a valuable role in capacity building, providing that training and other forms of support for developing country nationals are included as an integral component of the assistance. (Paragraph 109)

UK training schemes and scholarships

Commonwealth Scholarship and Fellowship Plan

45. We are encouraged by the innovative approaches being applied to the Commonwealth Scholarship and Fellowship Plan. In particular, we support the introduction of split-site and distance learning awards. (Paragraph 112)
46. We are pleased that the Commonwealth Scholarship Commission continues to recognise the importance of doctorates for development of expertise in scientific subjects, despite the fact that PhDs are significantly more expensive than taught

postgraduate courses. We also commend the Commonwealth Scholarship Commission for following a demand-led approach, and for ensuring strong representation of science and technology in the review process for award applications. (Paragraph 113)

47. We welcome the approaches that the Commonwealth Scholarship Commission is adopting to improve the quality and impact of the training it delivers. However, whilst the development of centres of excellence can undoubtedly have a positive impact on the wider region, care must be taken to ensure that concentration of resources in one institution or area does not distort the balance of capacity in the region or country as a whole. (Paragraph 116)

Higher Education Links Scheme

48. DFID should be more sensitive to the impact of changes in its policy and funding arrangements on UK organisations and researchers, and their counterparts in developing countries. (Paragraph 121)

Chevening Scheme

49. It is disappointing that the FCO has not been at all thorough in its past evaluation of the Chevening scheme. (Paragraph 124)

Dorothy Hodgkins Postgraduate Awards

50. PhD fellowships, although more expensive than those for taught courses, are essential for building the depth of expertise and range of skills required for effective research in many scientific and technological subjects. (Paragraph 125)

Capacity building of national science and technology institutions

51. Investment to strengthen the whole system of innovation in developing countries is required to make research more effective. Capacity building of national research systems must therefore encompass reinforcement of knowledge transfer and dissemination mechanisms. (Paragraph 132)

Information and Communications Technology capacity

52. Investment in Information and Communications Technology, for example to grant institutions in developing countries reliable access to the internet, is money well spent and we encourage DFID to give such support high priority. Failure to address inadequacies in ICT infrastructure and equipment can negate the benefits of other investments in capacity building: effective science and research require access to the global pool of knowledge, and isolated researchers are likely to flounder without both scientific and moral support from their peers. For the same reasons, DFID should also continue to support networks that include researchers in developing countries. (Paragraph 135)

Laboratory equipment and infrastructure

53. We believe that capacity building requires a holistic approach including thorough consideration of the infrastructure and equipment that will be available to the developing country researchers on completion of their training. In the case of split-site or in-country training schemes, it is clearly essential that adequate facilities are in place during the training. We urge DFID to explore further opportunities for the provision of laboratory equipment to developing countries; where this does occur, the equipment must be of a standard sufficient to support high quality research and the necessary training and instruction provided to render the equipment genuinely useful and to maintain it. (Paragraph 136)

Technology transfer/capacity building in the private sector

54. We believe there is also an important role for public-private partnerships at a local level. (Paragraph 137)
55. Science and technology capacity building in the private sector would complement efforts to strengthen science and technology capacity in the public sector and is vital for stimulation of innovation, and thus economic growth, in developing countries. (Paragraph 138)
56. As the Government's policies stand it is impossible for developing countries to trade their way out of poverty. (Paragraph 140)
57. We believe that in the more scientifically advanced and higher income developing countries there is much to be gained from building the capacity of the public and private sector to develop and manufacture drugs to meet the needs of people in developing countries. (Paragraph 141)

Brain drain

58. The failure to address the brain drain of health workers from Malawi to the UK has been a highly damaging example of lack of Government co-ordination. We believe that in cases where there is clear evidence of a brain drain of scientists, researchers or health professionals from developing countries to the UK, the UK Government should institute arrangements for direct compensation for the loss of capacity in the relevant sector. (Paragraph 144)
59. Determining the extent of any brain drain of scientists, researchers and scientific and technical support staff from developing countries, and understanding the consequences of this migration for international development, require further research and data collection. At the very least, UK Government departments should monitor the numbers of migrants from developing countries in their employment and the destinations of developing country award holders for scholarships that they sponsor. However, a far more powerful evidence base could be built if other countries were willing to engage in a long-term international study of the mobility of scientists and researchers from developing countries. We recommend that DFID

take the lead in calling for the initiation of such a study by the UN or another international agency. (Paragraph 146)

Co-ordination

Defra

60. We commend Defra for the inclusion of a requirement for capacity building in its contract with the Hadley Centre and believe that all Government departments should incorporate capacity building requirements into their contracts for science, technology and research for development where appropriate. It is, of course, necessary to then provide adequate funding to support the capacity building activities. (Paragraph 151)

FCO

61. There is clearly scope for better alignment and co-ordination of FCO and DFID activities. Although we welcome the willingness of the FCO to explore these opportunities, we regret the fact that this has not happened before. As well as co-ordination between the central Government departments, there is much to be gained from interaction between the FCO and DFID at country level. (Paragraph 155)

UK Trade and Investment

62. It is essential that DFID can benefit and learn from developments in thinking in other Government departments. The DTI has invested significant resources in strengthening its understanding of, and ability to promote, innovation in the UK. This knowledge could also be profitably utilised for informing the UK approach to development. Since UKTI does not seem to be a natural conduit for dissemination of this information to DFID, we recommend that the Director General of Innovation at the DTI takes responsibility for sharing this knowledge with DFID. (Paragraph 159)

OST

63. Science and technology for international development should be a priority for OST and we congratulate Sir David King, whose personal input and enthusiasm have played a key role in moving this issue up the UK Government agenda. (Paragraph 161)

British Council

64. We believe that closer collaboration between scientifically qualified staff in the British Council and DFID Country Offices and the FCO science and technology network could yield mutual benefits and reinforce the UK's scientific contribution to international development. (Paragraph 164)

UK Funders' Forum

65. The Funders' Forum could be a very useful vehicle for promoting co-ordination of UK-funded research for development. In view of the large numbers of potential participants, we recommend that the Funders' Forum be subdivided by sector or theme to prevent it becoming too unwieldy. However, we remain highly concerned that DFID has not made sufficient provision for eliciting input from developing countries and do not see that the Funders' Forum as proposed will ameliorate this problem in any way. (Paragraph 168)

Co-ordination with other international bodies

66. DFID should build on the international respect that it commands for promulgation of best practice amongst aid agencies. We urge DFID to speak out against any examples of poor practice that it encounters in science, technology or research for international development. (Paragraph 170)

UK Research Capacity

Erosion of UK research capacity

67. The quality and strength of UK research has been instrumental in building the reputation of the UK in international development. If it is not averted, the current erosion of the UK development sciences research base will severely undermine the ability of the UK to play its full part in international development in years to come. The Government should not sit back and watch this happen, never mind contribute to the process of erosion. (Paragraph 174)

Untying

68. DFID should not have chosen to pursue a policy that the Government's Chief Scientist now believes could be so damaging, without consideration of measures that could be taken, if not by DFID then by other Government departments, to minimise the negative impact of this policy on the UK. (Paragraph 176)
69. We consider that DFID was rash in untying research funding without eliciting firm commitments from other countries that they would also adopt that policy over an agreed timescale. The current situation poses a threat to the sustainability of the UK development sciences research base and has therefore resulted in feelings of distress and disappointment towards DFID in the research community. Having taken this course of action, DFID must now redouble its efforts to persuade other countries to untie their research funding. (Paragraph 179)

EU Framework Programme

70. We believe that the UK Government should, as many other governments do, provide matching funding to cover the overheads of EU Framework Programme research awards. (Paragraph 182)

Move towards in-country training

71. We strongly encourage the building of North–South partnerships in science, technology and research. (Paragraph 183)

Research Assessment Exercise

72. The lack of recognition awarded to development sciences in the Research Assessment Exercise has marginalised the development sciences community and helped to compromise the sustainability of some research institutions and groups. Future Research Assessment Exercises must use appropriate criteria and assessors with relevant expertise to ensure that much greater credit is given to all high quality development sciences research and capacity building activities, and the development sciences community needs to be reassured that this will be the case. Academics must be properly rewarded for engaging in capacity building activities and spending time working in developing countries in a way that contributes towards sustainable development. (Paragraph 185)

UK Research Councils

73. The scientific community must take care that disillusionment with DFID’s approach to science does not lead it to be universally dismissive of DFID’s work. Effective development sciences research is wholly dependent on a thorough understanding of the development context, as well as the science. (Paragraph 193)
74. It is very regrettable that the Engineering and Physical Sciences Research Council chooses to exclude international development from its mission. (Paragraph 194)
75. We are of the view that the UK Research Councils can play an important role in funding research for international development and consider that such research is highly likely to deliver additional, incidental benefits for the UK. The Research Councils should adopt a clear and consistent approach to the funding of scientific and technical research for international development. (Paragraph 196)

Responsibility for UK research capacity

76. The fact that no single person or department is taking responsibility for science and technology of relevance to international development has undoubtedly had a detrimental impact on the UK development sciences research base. Even though DFID did not consider it to be within its remit, it could and should have done more to raise awareness across Government of the serious problems being experienced by development sciences researchers in the UK. Nevertheless, DFID does not exist to promote the interests of the UK, and we believe that it would therefore be inappropriate for DFID to take a leadership role in maintaining UK research capability. The most logical arrangement would be for OST, through the Chief Scientific Adviser, to take responsibility for cross–Government co-ordination and, through RCUK, for the maintenance of the UK skills base in development sciences. (Paragraph 197)

Development Sciences Research Board

77. We propose that a cross-cutting Development Sciences Research Board be established with a mandate to award grants for development sciences R&D to UK-based institutions. (Paragraph 198)
78. We believe that the recent substantial increases in the aid budget would be complemented by a commensurate increase in the availability of funding for development sciences R&D in the UK, in order to strengthen the evidence base available for international development policy-making, and to safeguard the UK's ability to maintain a leadership role in this field. We estimate that an initial budget of approximately £100 million per annum would be required for the Development Sciences Research Board to fulfil its role effectively. (Paragraph 201)

ANNEX A: LIST OF ABBREVIATIONS

ADP	Appropriate Development Programme
CGIAR	Consultative Group on International Agricultural Research
CSA	Chief Scientific Adviser
CSAIC	Chief Scientific Adviser's International Committee on Science and Technology
CSC	Commonwealth Scholarship Commission
CSFP	Commonwealth Scholarship and Fellowship Plan
CSIRO	Australia's Commonwealth Scientific and Industrial Research Organisation
CTVM	Centre for Tropical Veterinary Medicine
Defra	Department for Environment, Food and Rural Affairs
DFID	Department for International Development
DRC	Development Resource Centre
DTI	Department of Trade and Industry
EPSRC	Economic and Physical Sciences Research Council
ESRC	Economic and Social Research Council
EU	European Union
FCO	Foreign and Commonwealth Office
G8	Group of Eight (Canada, France, Germany, Italy, Japan, UK, US and Russia)
GDP	Gross Domestic Product
GNI	Gross National Income
HEFCE	Higher Education Funding Council for England
HEL(S)	Higher Education Links (Scheme)
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
IAC	InterAcademy Council
ICT	Information and Communications Technology
IDRC	International Development Research Centre of Canada
IDS	Institute of Development Studies
ISTTIC	International Science Technology Trade and Investment Committee
MDG	Millennium Development Goals
MRC	Medical Research Council

NAO	National Audit Office
NEPAD	New Partnership for Africa's Development
NERC	Natural Environment Research Council
NGO	Non-Governmental Organisation
NRI	Natural Resources Institute
ODI	Overseas Development Institute
OECD	Organisation for Economic Co-operation and Development
OST	Office of Science and Technology
PPP	Public-Private Partnership
PRS	Poverty Reduction Strategy
PRSP	Poverty Reduction Strategy Paper
PSA	Public Service Agreement
QR	Quality-related Research
R&D	Research and Development
RAE	Research Assessment Exercise
RCUK	Research Councils UK
RNRRS	Renewable Natural Resources Research Strategy
S&T	Science and Technology
SPS	Sanitary/Phytosanitary
UKTI	UK Trade and Investment
UN	United Nations
WELL	DFID Resource Centre in Water, Sanitation and Environmental Health
WHO	World Health Organisation
WTO	World Trade Organisation

ANNEX B: VISITS MADE IN THE COURSE OF THE INQUIRY

Overseas Development Institute, London: Tuesday 25 May 2004

The Committee held discussions with Simon Maxwell, Director of the Overseas Development Institute, John Humphrey, Fellow of the Institute of Development Studies, Professor John Harriss, Director of the Development Studies Institute, Dr Camilla Toulmin, Director of the International Institute for Environment and Development, and PJ Greeves, Overseas Development Institute, on a wide range of issues, particularly the challenges currently being faced by UK-based international development research institutions. The Committee was also briefed by Simon Maxwell, Elizabeth Cromwell, Robert Tripp and Rachel Slater, all from the Overseas Development Institute, on food security in Malawi.

Malawi: Wednesday 16 – Saturday 19 June 2004

Wednesday 16 June: Lilongwe

Evening: DFID, British High Commission and British Council

The Committee received a briefing on FCO, DFID and British Council activities in Malawi, hosted by Norman Ling, the British High Commissioner, at his residence in Lilongwe. DFID was represented at the briefing by Roger Wilson, Head of Mission in Malawi, Dr Harry Potter, Rural Livelihoods Adviser, Susan Mshana, Health Adviser, and Paul Spray, Head of the Central Research Department. The British Council was represented by David Martin, Director Central Africa.

Thursday 17 June

The Committee divided into two parties to visit agricultural and health projects respectively. The agriculture team was accompanied by Dr Harry Potter, and the health team by Susan Mshana.

Morning

Agriculture team: International Centre for Research in the Semi-Arid Tropics (ICRISAT), Chitedze, and village visits

The Committee met researchers from ICRISAT and the Centre for International Tropical Agriculture and the International Centre for Research on Maize and Wheat. The Committee also visited a local village, where discussions were held with local farmers.

Health team: National AIDS Commission and Equi-TB Knowledge Programme

The Committee was briefed on the Malawi national HIV/AIDS research agenda at the headquarters of the National AIDS Commission and then visited the ward for AIDS patients at the Lilongwe Central Hospital and the 'Lighthouse' Voluntary Counselling and Testing and Anti-Retroviral Drug Distribution Centre.

The Committee was briefed on the Equi-TB Knowledge Programme at the Community Health Sciences Unit before undertaking a field visit to a research project in the Kauma settlement area.

Afternoon: National Commission for Science and Technology and British Council (both teams)

The Committee met with the Head of the National Commission for Science and Technology and the National AIDS Commission and the Principal Secretaries of the Ministries of Health; Agriculture, Irrigation and Food Security; Education; and Water Development to discuss the role of science, technology and research in Malawian development.

The Committee then visited the British Council offices and held discussions about British Council activities in Malawi with David Martin, Director Central Africa, and other British Council staff based in Malawi.

Evening: British High Commission

The British High Commissioner hosted a reception for the Committee, attended by Malawian Ministers, Members of Parliament and Senior Civil Servants, as well as alumni of the Chevening Scheme.

Friday 18 June

Morning

Agriculture team: Forestry Research Institute, University of Malawi

The Committee held discussions with researchers from the Forestry Research Institute and saw examples of research on water hyacinth, woolly aphids and medicinal bark.

Health team: Ntcheu District Hospital and Banja La Mtsogolo Clinic

The Committee visited the Ntcheu District hospital to hear about the Essential Medical Laboratory Services Project. The Committee then toured the Banja La Mtsogolo Clinic in Ntcheu and watched a performance by young people to communicate messages about sexual and reproductive health to other young people and children.

Afternoon

Agriculture team: Centre for Social Research and Banja La Mtsogolo Clinic

The Committee met with researchers from the Centre for Social Research at the University of Malawi before visiting a Banja La Mtsogolo Clinic to learn about the sexual and reproductive health programmes undertaken there.

Health team: Honorary British Consul and Malaria Research Projects in Blantyre

Following a lunch hosted by Krishna Savjani, Honorary British Consul in Blantyre, the Committee visited a series of Malaria research projects at the Zingwangwa research clinic, the Malaria Alert Centre and the Malawi-Liverpool Wellcome Trust laboratory at the College of Medicine and Queens Hospital.

Evening: Ku Chawe

The agriculture and health teams reconvened in Ku Chawe to discuss their observations with Norman Ling, Roger Wilson, Paul Spray, Susan Mshana, Harry Potter and Dr Colin Gourley, DFID Transport Adviser.

Saturday 19 June: Blantyre

Morning: President of Malawi and Blantyre Polytechnic

The Chairman, together with Norman Ling, the British High Commissioner, and Roger Wilson, DFID's Head of Mission in Malawi, met the President of Malawi and held discussions about the Government of Malawi's approach to science and technology.

The rest of the Committee attended a presentation at Blantyre Polytechnic to learn about the Higher Education Links with Strathclyde University in the UK.

Formal minutes

Wednesday 15 October 2004

Members present:
Dr Ian Gibson, in the Chair

Paul Farrelly
Dr Evan Harris
Dr Brian Iddon
Mr Robert Key

Mr Tony McWalter
Bob Spink
Dr Desmond Turner

The Committee deliberated.

Draft Report (The Use of Science in UK International Development Policy), 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 205 read and agreed to.

Ordered, That the provisions of Standing Order No. 134 (Select committee (reports)) be applied to the report.

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

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

[Adjourned till Wednesday 20 October at nine o'clock.]

Witnesses

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Monday 12 January 2004	
Mr Paul Spray , Head, Central Research Department, Mr Julian Lob-Levyt , Chief Human Development Adviser, and Mr Jim Harvey , Head of Rural Livelihoods, Department for International Development	Ev 1
Monday 23 February 2004	
Professor Melissa Leach , Environment Group, Institute of Development Studies, Mr Simon Maxwell , President, Development Studies Association of the UK, and Director, Overseas Development Institute, Dr Gordon Smith , Chair, International Development Research Centre of Canada, Professor Ian Diamond , Chief Executive, Economic and Social Research Council, and Mr Andrew Scott , Policy and Programmes Director, Intermediate Technology Development Group	Ev 11
Monday 15 March 2004	
Dr Nick Brown , Oxford Forestry Institute, Dr Guy Poulter , Director, Natural Resources Institute, Professor George Rothschild , Chairs of the independent advisory committees for DFID's RNRRS programmes	Ev 24
Professor John Lawton , Chief Executive, Natural Environment Research Council, and Professor John Pickett , Head, Biological Chemistry Division, Biotechnology and Biological Sciences Research Council	Ev 32
Monday 26 April 2004	
Professor Sir David King , Government Chief Scientific Adviser, Office of Science and Technology, Ms Fiona Clouder Richards , Head of Science and Technology, Foreign and Commonwealth Office, Dr Lloyd Anderson , Director, Science, British Council, and Dr Peter Tibber , Group Director, International Sectors Group, UK Trade and Investment	Ev 39
Monday 26 May 2004	
Mr Mark Lowcock , Director General, Corporate Performance and Knowledge Sharing, Ms Sharon White , Director, Policy Division, and Mr Paul Spray , Head, Central Research Department, Department for International Development	Ev 52
Wednesday 9 June 2004	
Mr Peter Cameron , Chairman, Appropriate Development Panel, Institution of Civil Engineers, Dr Andrew Cotton , Senior Programme Manager, Managing Director, WELL Resource Centre, Water, Engineering Development Centre, Loughborough University, and Professor John O'Reilly , Chief Executive, Engineering and Physical Sciences Research Council	Ev 64

Professor Andy Haines, London School of Hygiene and Tropical Medicine,
Professor Ian Maudlin, Centre for Tropical Veterinary Medicine, and **Mr
Nick Winterton**, Medical Research Council

Ev 71

Wednesday 7 July 2004

Rt Hon Hilary Benn MP, Secretary of State for International Development,
Mr Steven Bass, Head of Environment Profession, and **Mr Paul Spray**,
Head, Central Research Department, Department for International
Development

Ev 79

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Third Report	The Work of the Biotechnology and Biological Sciences Research Council (<i>Reply HC 526</i>)	HC 6
Fourth Report	Office of Science and Technology: Scrutiny Report 2003 (<i>Reply HC 588</i>)	HC 316
Fifth Report	<i>Too Little too late?</i> Government Investment in Nanotechnology (<i>Reply HC 650</i>)	HC 56
Sixth Report	Within REACH: the EU's new chemicals strategy (<i>Reply HC 895</i>)	HC 172
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Fifth Report	The Work of the Natural Environment Research Council (<i>Reply HC 1161</i>)	HC 674
Sixth Report	UK Science and Europe: Value for Money? (<i>Reply HC 1162</i>)	HC 386
Seventh Report	Light Pollution and Astronomy (<i>Reply HC 127, 2003-04</i>)	HC 747
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Ninth Report	The Work of the Engineering and Physical Sciences Research Council (<i>Reply HC 169, 2003-04</i>)	HC 936

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