House of Lords Science and Technology Committee  
Call for Evidence: Setting science and technology research funding priorities

1. Introduction

Syngenta is a world-leading agribusiness committed to sustainable agriculture through innovative research and technology. The company is a leader in crop protection, and ranks third in the high-value commercial seeds market.

Whilst we are headquartered in Switzerland, we have a strong UK heritage having operated here for nearly 100 years. We contribute over $1billion to UK exports and are one of the country’s 25 biggest investors in R&D. We spend more than $200m on the research and development of agricultural technologies in the UK, which represents more than 20% of Syngenta’s global spend on R&D. Our UK R&D activities are concentrated at Jealott’s Hill International Research Centre in Berkshire. We employ over 500 scientists at this site including many world leading chemists and biologists. In July 2008, we also announced a major increase in our capital investment in both our UK manufacturing and research and development operations amounting to more than $200 million.

Given our role in UK and world agricultural, biotechnological and chemical R&D, we welcome the opportunity to respond to the Select Committee’s call for evidence on setting science and technology research funding priorities.

2. Syngenta’s response to the Select committee’s call for evidence:

What is the overall objective of publicly-funded science and technology research?

We fully support the Lisbon Agenda to make the EU the most dynamic and competitive knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion, and respect for the environment. This should continue to set the tone of investment in the UK and Europe. It is essential for developed countries to be able to compete by being “smarter”. We also fully support the recommendations made in the review of science and innovation by Lord Sainsbury of Turville. We see these as critical to securing the future growth prospects and the global competitiveness of the UK and we mustn’t overlook the importance and high cost of ‘demonstration’ in turning technology into innovative products and services – the UK has consistently produced high quality research but needs to be more successful in its ability to convert this research into commercial profits.

How are public funds for science and technology research allocated? Who is involved at each level and what principles apply? Where appropriate, is the Haldane Principle being upheld?

We believe that the research funded by the Research Councils should be primarily targeted towards defined objectives, which will benefit the majority of citizens, with some scope to pursue serendipitous discoveries made within that targeted research through “responsive mode” funding. It is not clear to us how this should be divided, but 75% targeted and 25% non-targeted feels about right. In addition, some funds should be allocated to create centres of excellence – both resource and expertise, e.g. a powerful computer cluster, which would enable industry to access first class facilities to improve the quality of their own research. There are also significant financial and scientific advantages in the UK collaborating in big international science projects rather than “going it alone”. The TSB should fund applied research to enable discoveries to be translated across technology families and to enable the development of the output of this basic and applied research work into robust working models. RDAs should primarily encourage SMEs in their regions to help them to convert
their proven ideas into working prototypes, which could then be used to secure investment to enable the commercialisation of their products. Government departments should be able to fund research in support of their policy objectives and their development.

It is not clear to us, whether Government actively manages its full portfolio of projects, as we do, to ensure that the portfolio is carefully balance between projects at the different stages of research, development and deployment and the balance across the different target areas (areas of interest). In addition, in our experience of working with the research councils, we know that extensive peer review takes place to approve the funding of a project, but in our opinion, the review at the end of the project, apart from giving the project a score, does not adequately capture and disseminate the learning gained from the project amongst those who could benefit.

Many in industry, including Syngenta, find the bureaucracy involved in the European Framework deters them from taking part in these projects. It makes us ask the question, “Do we get the full benefit from our investment in Europe?” If not, should some of the investment be diverted into greater direct support for UK R&D?

Are existing objectives and mechanisms for the allocation of public funds for research appropriate? If not, what changes are necessary?

We are not in a position to comment.

What governs the allocation of funding for Government policy-directed research through Government departmental and agency initiatives? Are existing mechanisms appropriate? What is the role of Departmental Chief Scientific Advisers?

We support the existence of the Chief Scientific Adviser network, as we know that networks are effective mechanisms for knowledge transfer, but we have had no interaction with this network.

We are impressed by the energy and focus Professor Beddington has brought to the role of Chief Scientific Advisor, but we are concerned by the overlapping remits of the different government departments. E.g. around the strategy for food security.

We believe that the appointment of Chief Scientific Advisers to all Government departments to encourage the use of science-based policy making and to create an inclusive network which can work together, to define and support the overall science strategy, which should be in support of and in alignment with the overall Government strategy.

The funding mechanisms to support, research, development and deployment are overly complicated. A significant simplification would be for Government to have three funds:
1. The Research Councils to fund all the early stage work (Technology Readiness Levels (TRLs), 1-3)
2. The TSB to fund the middle stage (TRLs 4-6/7),
3. A crisis fund for e.g. tackling a flu pandemic

In our experience the peer review process is generally effective but there is an issue with cross-cutting and new areas of multidisciplinary research – these need to be nurtured. It is very important that the Research Councils act in concert to ensure that multidisciplinary and cross-disciplinary needs are met. The Research and Technology Clubs are a good idea, but, for example, with IBTI it took a long while for the EPSRC to join the BBSRC in the club, even though it was already funding work in this area.

The KTNs (Knowledge Transfer Networks) set up by the TSB work well.
How are science and technology research priorities co-ordinated across Government, and between Government and the relevant funding organisations? Who is responsible for ensuring that research gaps to meet policy needs are filled?

The Research Councils have clear overarching strategies and the mechanisms for determining priorities by consultation with their strategy panels are well-defined. However, their funding of projects is not really coordinated! If it was simpler, then the current boundary issues between the different RCs could be better managed. We see examples of good practice within the BBSRC that we think could be usefully emulated in the other RCs.

We think that it would help if some specific cross-discipline panels were set up to help with areas which cross boundaries – both for peer review and funding.

The Clubs, such as IBTI, set up by the BBSRC work well to bring industry and academia together.

HEFCE also provides significant funding to universities – there have been some shortcomings with the RAE, but the new framework looks to be addressing these by defining a range of outputs and impacts. Pooling of resources to provide significant funds for large scale projects can work well and is a good model, e.g. Defra, BBSRC, NERC, SO and Wellcome Trust announced a jointly funded research project on bees.

Is the balance of Government funding for targeted versus response-mode research appropriate? What mechanisms are required to ensure that an appropriate and flexible balance is achieved? Should the funding of science and technology research be protected within the Research Councils or Government departments? How will the current economic climate change the way that funds are allocated in the future?

As stated earlier, it is not clear to us how funding should be divided, but 75% targeted and 25% non-targeted feels about right. In addition, some funds should (continue) to be allocated to create centres of excellence – both resource and expertise to benefit the research and industrial community, e.g. Government needs to fund fundamental work on climate change which would help to provide good background data for other projects and industry.

We believe that the system should be simplified such that the RCs and the TSB and not Government departments control the research funding (apart from a small amount for policy development).

We strongly believe that R&D is a significant engine for growth. The long term benefits of investment in R&D should not be compromised to meet short term goals.

How is publicly-funded science and technology research aligned and co-ordinated with non-publicly funded research (for example, industrial and charitable research collaborations)? How can industry be encouraged to participate in research efforts seeking to answer societal needs?

IPAs (Industrial Partnership Awards) are a good example of how to provide the benefit of industrial relevance to early stage research and the Research Clubs like IBTI (Industrial Biorefining Technology Initiative) work well, as they require a cash commitment from industry
and yet the industry gets good gearing on their investment in such early stage (very high risk) research. For later projects, which apply the learning to an industrially relevant setting, the current TSB mechanism works well (although it needs more funds).

The UK (and Europe) need to have the correct societal and regulatory climate to encourage the development of new technologies, which can be globally competitive e.g. The UK has lost its world leading position in plant biotechnology because of the opposition to GM (Genetically Modified crops)

To what extent should publicly-funded science and technology research be focused on areas of potential economic importance? How should these areas be identified?

See our earlier comments

How does the UK’s science and technology research funding strategy and spend compare with that in other countries and what lessons can be learned? In this regard, how does England compare with the devolved administrations?

In spite of a significant increase in support for science and technology since 1997, we still don’t invest enough to be internationally competitive with our main rivals.

We are not in a position to comment to compare England to the devolved administration.