

All-Party Parliamentary Group on Science & Technology in Agriculture

Hi-tech innovation clusters: unlocking the potential of UK agri-science

Tuesday 6 November 2012, Committee Room 19, Palace of Westminster

Present:

Members

George Freeman (Chair)
Lord Curry of Kirkhale
Duke of Montrose
Lord Cameron of Dillington

Guest Speaker

Rene Custers, VIB (Flanders Institute of Biotechnology)

Stakeholders

Prof Tim Benton, UK Global Food Security Champion; Prof Chris Atkinson, University of Greenwich; Mike Bushell, Head of R&D, Syngenta; Stuart Knight, Director of Agronomy, NIAB TAG; Ed Barker, CLA; Prof Dale Sanders, Director, John Innes Centre; Peter Mills, Vice Principal, Harper Adams; Chris Warkup, Biosciences KTN; John Bingham; Neil Hipps; Dean Cook, Head of Science Strategy, FERA; Jennie Wilson, USDA; Christine Tacon; David Green, United Soybean Board; Keith Kemp, United Soybean Board; Martin Collison; Nigel Kerby, Mylnefield Research Services; Prof Iain Gordon, Chief Executive, James Hutton Institute; Andrea Graham, NFU; Martin Savage, nabim; Caroline O'Leary, nabim; Lindsay Hargreaves; Alex Chaix, Office of Life Sciences, BIS; Daniel Pearsall, Group Co-ordinator.

1. Welcome and introduction

George Freeman welcomed Members and stakeholders to the meeting, and introduced guest speaker Rene Custers, Regulatory and Communications Manager at VIB in Belgium.

A molecular biologist by training, Rene Custers studied at the University of Wageningen in the Netherlands, and worked in regulatory assessment of GMOs for the Dutch Government before joining VIB in 1997. Within VIB his responsibilities include regulatory and public affairs, and involve high-level involvement in the public debate about GMOs. He is also a member of the Belgian Biosafety Advisory Council.

2. Guest speaker

[Please note that full copies of speakers' slide presentations are available to download via the Meetings section of the All-Party Group web-site at www.appg-agscience.org.uk]

Rene Custers, Regulatory and Communications Manager, VIB

RC described the factors underpinning the development of the Ghent Technology Park as Europe's largest plant science cluster, with a successful track record of generating jobs, inward investment, spin-off companies and technology-based exports. VIB lies at the heart of the cluster, which also includes the University of Ghent and a number of bioscience companies all located within the same technology park.

Founded in 1996 by the Flemish government, the vision behind VIB was to establish a world-class life sciences institute capable of translating the pioneering research taking place at the University of Ghent in plant transformation, genomics and biomedicine into benefits for society.

Today, VIB is an integrated life sciences institute combining biomedical and plant genetic research with a three-fold mission to conduct frontline scientific research, to translate the results of that research into products for farmers, consumers and patients, and to inform the public about its research.

In total, VIB employs some 1250 scientists, around three-quarters working in biomedical research, the remainder in plant science. VIB has internationally recognised research strengths in cancer, neuroscience, infections and immunology, microbiology and plant biology.

This exemplified by the Institute's strong track record in scientific publications, averaging more than one peer-reviewed paper per day and more than two breakthrough papers per week.

But while innovative, basic research remains at the core of VIB activity (around 85% of funding comes from Government and other public sector sources), a focus on technology transfer to exploit the commercial opportunities of the Institutes research outputs has seen the development of a strong patent portfolio (869 patents now granted with ~23 new patent filings per year), an increasing number of collaborative projects and agreements with commercial partners, and an increasing number of spin-off companies and business start-ups in both the the biomedical and agbiotech fields.

Across all life science sectors, every €1 invested by the Flemish government in business start-ups has been matched by €1.5 in private sector investments totalling around €500m and generating more than 470 new jobs.

RC explained that science policy at VIB is founded on a commitment to conduct excellent basic science, to attract international talent and collaboration (scientists from around 70 different nationalities work at the Institute), to gain early access to emerging technologies and to monitor the output of the Institute not only in terms of high-impact publications but also in terms of commercial opportunities to develop new products and technologies.

In particular, RC suggested that VIB's policy to recognise scientific excellence in terms of patent applications and business start-ups as well as scientific publications and citations may explain why the Ghent cluster has become an innovation hub for both public and private sector scientists.

In such a rapidly developing field of scientific research, VIB has an ongoing investment programme to update and upgrade its core facilities providing services to researchers within the Institute and to external customers. Latest developments included investment in imaging and bioinformatics capabilities.

Within the plant science sector, RC described the Ghent Agbio Cluster as one of the top three agscience regions in the world, with 4 of the world's top 30 plant scientists in terms of academic citations. Around 700 plant scientists work on the technology park, providing a unique blend of roughly 50:50 public and industrial researchers and promoting positive interaction between academic and commercial research.

Indeed the Ghent cluster has been able to buck the trend in Europe by sustaining and even expanding inward investment in plant biotechnology in recent years, with five of the world's six top agbiotech companies present on the site as VIB spin-offs or collaborative ventures. These include Plant Genetic Systems, developers of the first transgenic plant in 1983, now owned by and trading as Bayer CropScience, Crop Design (part of BASF), and deVGen (recently acquired by Syngenta).

RC also described VIB's increasing involvement in GM field trial activities, which had stopped in 2003 due to legislative changes and uncertainty. Since 2009, VIB has conducted field trials in GM poplar, maize and potatoes in an effort to rebuild the connection between top quality laboratory / glasshouse research and its transfer into commercially relevant products and technologies.

In summary, RC highlighted a commitment to excellent science, facilities and people, an integrated, cross-disciplinary approach to life sciences research and innovation, a pro-active approach to transferring research outputs into practical commercial opportunities and the co-location of public and private sector researchers as key factors underpinning the successful development of the Ghent cluster.

3. Questions and Discussion

GF thanked Rene Custers for an inspirational presentation which offered a valuable insight into the success factors behind the Ghent bioscience cluster as an exemplar for UK centres such as Norwich, Cambridge and Dundee.

The underpinning messages also provided a powerful endorsement for the UK's renewed policy emphasis on an integrated life sciences strategy, built on excellent basic science but with a clarity of focus on successful technology transfer and commercial exploitation.

Key issues raised during the Q&A session with members and stakeholders included:

- the benefits of co-location in stimulating co-ordination and collaboration (both push and pull) between public and private sector researchers;
- the benefits of a strong cluster in securing political influence, both in terms of speaking collectively and demonstrating success in attracting inward investment;
- the importance of conducting GM field trials accessible to the public as a communications vehicle ('communicating by doing');
- the vital role of private companies in taking VIB to the stage of commercialisation. VIB works with model crop species, does not maintain its own germplasm resources, and will not get involved in commercial breeding or product development;
- to that end, RC considered the outputs of VIB research to be 'public good' in terms of advancing our basic scientific knowledge and understanding for the wider benefit of society.

4. Towards a UK Agri-Tech Strategy

GF introduced a brief discussion on the forthcoming Agri-Tech Strategy, as the next stage in the Government's over-arching strategy for the life sciences, and following last December's

successful launch of a life sciences strategy for the biomedical, healthcare and pharmaceutical sectors.

Due to be published in early 2013, GF highlighted the political context of the planned Agri-Tech Strategy in confronting the combined challenges of global food security and a domestic economic crisis.

Increasing global demand for food and the pace of development in high-growth economies around the world are opening up major potential markets for UK science, technology and innovation. This presents an opportunity to harness and exploit our world-class but long neglected agricultural science sector to increase the productivity and competitiveness of UK food production in a way that will drive growth and exports, attract inward investment and provide the platform for a new phase of leadership and trade and UK agricultural science.

GF emphasised the support across Government for the Agri-Tech strategy – with Ministers from BIS, Defra and DfID working with Number 10 to put the UK's food and agriculture industries on the same footing as the healthcare sector. GF stressed his own view that the Agri-Tech strategy should be UK-wide in scope, and should extend beyond the farm-gate to include the activities of food processors and retailers.

He also highlighted the need for a collaborative approach, bringing together Government, industry and the science base with a clear focus on unlocking the economic potential of the UK's agri-food sector.

Key issues raised during the subsequent discussion included:

- the scope for agri-environmental innovation within the strategy, to sustain key natural resources such as soil, water and biodiversity;
- the need to extend the strategy's scope beyond life sciences to include innovation within the machinery and engineering sector;
- the urgent need to address gaps in applied and translational skills within the agri-food science base;
- how to project this vision and initiative to the world to ensure the message goes out that the UK is open for business and wants to be a global leader in agri-food science and innovation. It was suggested that currently this is not the message conveyed on the OLS web-site;
- the strategy should not just focus on new technologies and innovative products, but should also seek to address the communication and transfer of existing knowledge in a more accessible and user-friendly way;
- the effectiveness of TSB as a vehicle linking the science base and industry;
- the need to secure the buy-in and active involvement of large multinational food companies and multiple retailers.

In conclusion, GF thanked Members and stakeholders for their contribution to the discussion, and encouraged everyone with an interest in this area to help shape the Agri-Tech Strategy by responding directly to the BIS call for evidence.