FOOD ETHICS COUNCIL

Responding to the UK agri-tech strategy

Challenges and opportunities for agricultural innovation

A report of the Business Forum meeting on 21st January 2014

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About the Business Forum

Ethical questions around climate change, obesity and new technologies are becoming core concerns for food businesses. The Business Forum is a seminar series intended to help senior executives learn about these issues. Membership is by invitation only and numbers are strictly limited.

The Business Forum meets six times a year for in-depth discussion over an early dinner at a London restaurant.

To read reports of previous meetings, visit foodethicscouncil.org/businessforum.

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Introduction

The UK Strategy for Agricultural Technologies, published by the Government in July 2013, sets out its vision to become "*a world leader in agricultural technology, innovation and sustainability; [that] exploits opportunities to develop and adopt new and existing technologies, products and services to increase productivity; and thereby contributes to global food security and international development*."

Following widespread consultation, implementation plans for the strategy are taking shape, funding priorities becoming clearer and a £70 million catalyst fund was announced in late 2013 to help 'bridge the gap between the lab and the marketplace'. The January 2014 meeting of the Food Ethics Council Business Forum explored how the strategy is progressing, whether there is scope to influence the way it is implemented and what challenges and opportunities it presents for food and farming businesses.

Some key questions that were discussed include how to engage the public around acceptance of new and existing technologies; how the benefits in agricultural knowledge, science and technology can be shared fairly; and how synergies can be ensured between commercial interests in developing new products and services, and societal needs such as global food security.

We are grateful to our speakers Professor Ian Crute, Chief Scientist of AHDB and member of the Agri-Tech Leadership Council and Vicki Hird, Senior Campaigner, Land Use, Food and Water Security Programme, Friends of the Earth. The meeting was chaired by Professor David Pink, Harper Adams University and Member of the Food Ethics Council.

The report was prepared by Jo Lewin and Dan Crossley and outlines points raised during the meeting. The report does not necessarily represent the views of the Food Ethics Council, the Business Forum, or its members.

Key points

- Despite the UK's strong scientific and research base, it is currently at the bottom of the charts for productivity and performance compared to other OECD countries.
- The Agricultural Technologies strategy is an attempt to build industry-led innovation. It includes a catalyst fund to help 'bridge the gap between the lab and the marketplace.' The push to tackle this so-called 'valley of death' was highlighted as a key strength.
- Although there are some measures of success set out in the strategy, it was argued that some of these were perhaps aspects that were the 'easier', rather than the 'right' things to measure. Measuring sustainability impacts – while sometimes difficult – was felt to be of vital importance.
- Engagement in the development and early stages of the strategy to date was generally felt to be positive. However, concerns were raised as to whether small and medium-sized enterprises were in effect precluded from participating, with the need to part-fund being a barrier. It was also suggested that a number of NGOs were keen to engage, but that they did not feel as though they had had the opportunity to do so to date. Many also argued for greater engagement with the general public.
- Arguably the agri-tech strategy lays down the vision for the UK to be a leader. Questions remain though. Does the ambition of the strategy really match up to the scale of the challenges ahead on climate change and the necessary shifts in dietary requirements? Should the strategy focus on genuinely sustainable farming systems, rather than just technologies, products and services per se? The jury remains out as to whether the strategy is ambitious enough or how impactful it will be. However, now that it is here, surely it should be given a chance to prove itself?

The context for the strategy

Around 40% of our food is imported, which, it was claimed, puts the UK at risk. In the 1960s and 1970s, volatility in food commodities meant that the UK Governments of the time invested in food. However, from the 1980s onwards (until around 2007), food was plentiful - for most UK citizens at least. It was suggested that as a consequence, the UK became complacent, there was underinvestment in skills and research in agriculture and productivity fell.

Despite the UK having a strong scientific and research base, the UK is at the bottom of the charts for productivity and performance compared to other OECD countries. Investment in science is high, but production and productivity are low.

Agricultural Technologies Strategy

The agri-tech strategy – the Government's first policy response to the Foresight report on the future of food and farming – is about trying to build industry-led innovation, so that the UK can again develop a competitive position. There are two key mechanisms for implementation, and government will only put money in where there is a business plan to provide continuity of industry support. It will provide a way for industry to better connect with research, so that the 'capacity and communication' gap can be bridged.

Firstly, there is £170 million in new funding. The Catalyst fund is for industry-led projects with government backing. The response rate for the initial round of calls for funding was reported to be very good.

Secondly, the strategy calls for centres for agricultural innovation, for example a centre for metrics and informatics. There is still debate about what the centres will be, including whether they will be sector-specific or more generic.

Engaging with the strategy

It was pointed out that there had been extensive engagement and consultation with food and farming companies in the development and early stages of the agri-tech strategy. Questions were still asked as to how businesses (of differing sizes and resources) that hadn't been involved to date might engage with the strategy?

NGO involvement was also felt to be critical. There was a sense that a number of NGOs were keen to engage, but were unclear as to how best to do that – they were not aware of mechanisms in place to allow them to actively be involved in shaping the future direction of the strategy.

Data and metrics

Agricultural informatics and metrics enable numbers to be put on challenges issues around how agricultural systems work. It was suggested that it is the science of sustainability that requires these numbers. The amount of data collected in agricultural systems over an extended period of time is potentially hugely valuable information. It was claimed that a new era may be emerging in terms of how agriculture and science are perceived.

However, the data at present was felt to be too dispersed. The Farm Business Survey, for example, has collected data since around 1930, but it is not widely used. Farming businesses often collect a huge amount of data, but it is rarely available for others to see. Catchment data plans and greater cooperation between farmers were suggested as helpful ingredients in accelerating positive shifts forward.

The benefits of thinking about data in isolation were also challenged. It is possible to collect lots of case studies and to have a very large data set, but that does not necessarily incentivise behaviour change amongst those involved in UK agriculture. What are the mechanics by which you can take the information and make people change their practices?

It was noted that the strategy does mention sustainability, but that it lacks ways of measuring that. The role of metrics was felt to be important and underplayed in this strategy. There is often a tendency to default to those things that can be measured, rather than stepping back and asking if they are the right measures.

Questions about the strategy

The question was posed as to whether the strategy matches up to the challenges ahead on climate change and necessary shifts in dietary requirements. Should a strategy focus on genuinely sustainable farming systems, rather than just technology per se? Will it enable more than nine billion people to be fed in the future under a different climate, both in the UK and globally? It was argued that it is important to consider global implications of any actions, given that the UK depends so much on imported food. Will the policies benefit not only economic return in the short-term, but make the change over to low carbon, sustainable sources?

It was argued that the focus should be less on the UK 'feeding the world' and more about the UK feeding *itself* and sorting out the 'mess' that some of the UK's farming systems are in. A holistic approach was advocated – to use what we produce far better (rather than intensifying to produce more) and to stop wasting so much of the food that is grown and bought.

It was suggested that one beneficial outcome of the strategy might be a more domestic feed supply chain, rather than the unsustainable sources UK agriculture is largely dependent on at present.

Strengths of the strategy

The real push to tackle the so-called 'valley of death' between the lab and the marketplace was highlighted as a key strength. The emphasis on informatics and metrics was suggested to be very sensible – with the mantra of 'if we can't measure it, it can't be changed' meaning there was a strong case for providing evidence and measuring outputs.

Weaknesses of the strategy

Firstly, it was noted that there is not much mention of biodiversity in the strategy. Without biodiversity, there is no resilience in agricultural systems. Secondly, it was argued that people (as consumers) are absent from the strategy. This is a key gap, as shoppers' habits are known to be changing and consumer behaviour is regarded by most as a key driver towards fair and sustainable food and farming systems. The question was posed as to how technological tools (such as apps) might move consumers to choose more wisely, in relation to food.

Thirdly, it was suggested that small and medium-sized enterprises (SMEs) might not have access and opportunity to contribute to decisions about funding in relation to the strategy. Are small businesses realistically going to be able to match fund in the same way that bigger businesses might be able to? It was suggested that this represents a large barrier to participation for lots of companies.

Finally, it was argued that the timescale for funding (at 3-5 years) was still too short-termist and that it is difficult to build an applied research plan into that timeframe.

Need for a whole chain approach?

It was acknowledged that the current economic climate meant that budgets were constrained. From that perspective, focusing on the primary (growing) end of food production makes some sense. However, a whole chain approach that brings people in as citizens and consumers was advocated in relation to key issues, for example diet and avoiding waste. The agri-tech strategy was mentioned as a possible route to more effectively make links along the whole value chain – and to deliver multiple benefits from single projects. If the future is all about collaboration – as

business and government leaders are so often told – it begs the question as to how many existing applications for catalyst funding are about genuine whole chain collaboration?

A systems model was argued for – with analysis needed to work out how the UK can produce enough food affordably, whilst at the same time having clean water, landscapes, biodiversity, farm animals that have a happy life and much more.

Separation and erosion

Scientists in the UK were praised for producing excellent science, but it was claimed that often this is divorced from commercial realities – and that scientists and the food industry rarely come together. It was suggested that the scientific base in the UK often seems to be more about producing academic papers than translating science into practice. It was argued that more scientists need to spend time in industry, in order to ensure that scientific research becomes more applied and relevant to the commercial context.

It was claimed that some of the UK's research base has been badly eroded, and that the UK's capability to respond to industry needs has been removed. Looking forward, there is an urgent need to re-train, re-skill and re-motivate the scientific community. The agri-tech strategy was felt to be a great signal from the UK Government that it believes in building up innovation in the industry and in the credibility of the science that underpins it. The new strategy was described as being absolutely essential to build long-term knowledge. It was suggested that it was likely to be the industry that would have to build off this platform and drive it forward.

International agriculture

It was noted that there is £10 million in the catalyst fund explicitly for innovations related to international agriculture – and that what some perceive as a disinterest in domestic agriculture in recent times has meant that a lot of input has been into technology that will have impact outside of the UK. It was argued that much of the technology developed is applied outside of the UK. It was suggested that if the UK is trying to encourage inward investment to exploit the UK's science base, then the UK must demonstrate that it thinks its science is worth exploiting itself.

The UK shouldn't be seen in isolation – given it is part of a global system. It was suggested that in the future, the UK might not need to try to be 'best in class' at everything in the future and that a more viable route might be to think more in terms of specialisation and longer term opportunities.

What should success look like?

If the strategy is to be deemed a success, what might that look like? A number of measures were suggested. Firstly, the UK would have moved up from the bottom of the league in terms of total factor productivity (where it currently sits). Secondly, there would be significant inward investment into centres of activity. Thirdly, success would be demonstrated through measurable changes, including the uptake of new technologies. These measures alone would not constitute 'success' though – ways of measuring progress towards more sustainable farming systems need to be incorporated.

Reflections

The challenge was laid down that if the UK cannot become a leader in this field, the rest of the world is unlikely to follow. Arguably the agri-tech strategy lays down the ambition for the UK to be a leader. The jury remains out as to whether the strategy is ambitious enough or how impactful it will be, but it was felt that it should be given a chance to prove itself.

Speaker biographies

Professor Ian Crute has had a 40 year career in crop research and has been Chief Scientist of the UK Agriculture and Horticulture Development Board (AHDB) since 2009. His professional expertise is in plant pathology and genetics with a particular interest in the sustainability of agricultural systems. Prior to joining AHDB, Professor Crute held the post of Institute Director at Rothamsted Research for 10 years. This followed 25 years in Horticulture Research International as a Research Leader in plant pathology, Head of Department and Director at the organisation's Wellesbourne laboratory. Professor Crute's scientific contributions are recorded in over 170 publications and his work has been recognised by several awards including a CBE for "services to plant science". He was a member of the Lead Expert Group for the "Global Future of Food and Farming" Foresight project.

Vicki Hird has been working on environment, food and farming issues for over 20 years. She is an expert consultant for NGOs and institutions (including work for RSPB, WSPA, The Sustainable Development Commission, The Plunkett Foundation, ActionAid, and HEAL) and is the Senior Campaigner heading up the Land use, Food and Water Programme for Friends of the Earth. Previously she was Policy Director of Sustain. She has launched many major food and environment campaigns, has published numerous reports and articles on the sustainability of food systems and is a published author (Perfectly Safe to Eat? Women's Press 2000). She has an academic background in pest management and is a Fellow of the Royal Entomological Society and RSA. Vicki is on the board of Pesticides Action Network, the Keo Foundation, Sustainable Food Cities Advisory Board, is a London Leaders Mentor and has sat on numerous government advisory groups over the years.

Professor David Pink has over 30 years' experience in crop genetics and breeding research in a wide range of vegetable crops. He was previously at Warwick HRI before becoming Professor of Crop Improvement at Harper Adams University in October 2010. His research interests include disease and pest resistance and quality traits and the use of crops for sustainable materials and energy. In addition to working in the UK, he has also worked with small holder farmers in Kenya carrying out an analysis of the vegetable supply chain and advising on participatory breeding programmes of kale in a project jointly funded by DfID and the Rockefeller and Gatsby Foundations. He is a member of various organisations including the steering group of the BBSRC's Horticulture and potato initiative, LEAF advisory board and Food Ethics Council and is an assessor for the TSB agri-tech catalyst fund.

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