

13 April 2017

Industrial Strategy Team
Department for Business, Energy and Industrial Strategy
1 Victoria Street
London
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Dear BEIS team,

AHDB welcomes the opportunity to respond to the BEIS Green Paper on 'Building our Industrial Strategy'.

AHDB

The Agriculture and Horticulture Development Board (AHDB) is a statutory levy board, funded by farmers, growers and manufacturers in the food supply chain. Our purpose is to inspire farmers, growers and our wider food industry to succeed in a rapidly changing world. We do this through generating and sharing innovation, best practice, independent evidence, information and services.

The AHDB's remit covers 72% of total UK agricultural output. AHDB raises statutory levies from the meat and livestock sector (cattle, sheep and pigs) in England, horticulture, milk and potato sectors in Great Britain and the cereals and oilseeds sector in the UK. Funds raised from each commodity sector are invested in a wide range of activities including R&D, marketing, exports and market intelligence.

Our strategy

The AHDB's strategy (2017-2020) aims to prepare the industry for the challenges and opportunities ahead. These are shaped by consumer trends at home and abroad, the need to tackle productivity growth and the specific circumstances our industry faces in connection with Brexit. Activities are focused on four strategic priorities (<http://www.ahdb.org.uk/documents/Corporate%20Strategy.pdf>):

- Inspiring British farming and growing to be more competitive and resilient.
- Accelerating innovation and productivity growth through coordinated research and development (R&D) and knowledge exchange (KE)
- Helping the industry understand and deliver what consumers will trust and buy.
- Delivering thought leadership and horizon scanning

The AHDB strongly believes that agriculture, horticulture and the food industry should be firmly embedded in a future UK Industrial Strategy. There are three main drivers:-

1. Food and farming contributes nearly £110 billion to the UK economy each year, and has latent potential for significant further growth. Its geographic footprint is large - Utilised Agricultural Area (UAA) covers 70% of the UK mass, supporting the fabric of many rural communities. Primary agricultural production underpins the employment of 3.9 million people in the Agri-Food sector, equivalent to 13% of national

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employment in agriculture, manufacturing, wholesaling, retailing and catering. A thriving agricultural sector is important not only for its potential to stimulate growth in the rural economy, but also its contribution to delivering wider societal goods and services e.g. landscape, biodiversity, energy, climate change mitigation and risk management, which should also factor into a long-term industrial strategy.

2. Increasing productivity is a central challenge both for the UK economy and for UK agriculture. The current rate of productivity growth across our sectors averages a meagre 0.9% per annum over the last 10 years and lags behind a number of our major competitors, both in Europe and further afield. A failure to tackle the gap in productivity growth not only undermines the ability of the whole industry to meet the needs of British consumers but also to exploit growing opportunities overseas. Tackling the gap in productivity growth is the pivotal focus for AHDB's strategy

If UK agricultural total factor productivity growth had kept pace with USA since 1981, agricultural GVA would have been £3,275 million higher by 2013. Therefore addressing the productivity gap could have a significant impact on the UK rural economy.

Our declared strategy to fund and promote more applied R&D, harness our digital and farm excellence platforms, network with others to coordinate and deliver knowledge exchange knowledge are designed as part of an ambitious programme to drive change, stimulate farm-level innovation and accelerate the uptake of best practice.

3. Agriculture faces significant challenges as a consequence of Brexit. Farm incomes are heavily dependent on Common Agricultural Policy (CAP) support, and the industry as a whole is exposed in terms of trade with the rest of the EU. AHDB is undertaking horizon scanning exercises to scope specific challenges and opportunities, and inform the types of response that may be required (<http://www.ahdb.org.uk/brexit/default.aspx>).

Brexit also bring with it opportunities to reshape policy and identify new market opportunities. AHDB has played a leading role in opening up new markets for pork (notably in China), including outlets for less desirable cuts, transforming what was previously a net cost into a premium revenue stream, and adding approximately 40p/per kg to the value of a pig carcass. We continue to work on gaining access to the US for beef. A trade development post (<https://www.gov.uk/government/news/uk-appoints-first-agriculture-and-food-counsellor-in-china>) in Beijing, co-funded with by AHDB is a useful example of government/industry collaboration which continues to pay dividends.

Response to the Green Paper

AHDB supports the thrust and direction of the Green Paper. All ten pillars set out in the document are to a greater or lesser degree relevant to agriculture. Our response to the specific questions posed in the consultation targets the four areas we believe will have the greatest potential to move the industry forward. These are:-

- Investing in Science, Research and Innovation – key drivers of productivity gain, based on a functioning pipeline for applied R&D through to effective knowledge exchange, customised to the needs and structure of the agricultural sector

- Developing skills – placing increasing emphasis on the skills necessary to make good business decisions, and to assimilate technological advancement.
- Encouraging trade – industry and government working together to ensure minimal barriers to trade, and to create the conditions and support necessary to facilitate access to new markets.
- Cultivating world leading sectors – to take a coordinated, whole chain approach to formulate Sector Deals which draw from the strengths of the UK science, primary production and processing base.

AHDB is well positioned and is committed to work with industry collaborators such as the National Farmers Union to develop a Sector Deal for agriculture.

We welcome early further dialogue with BEIS to better understand, and potentially help shape, some of the parameters that would bring an effective Sector Deal for agriculture to life.

Yours faithfully,

A handwritten signature in blue ink that reads "Tom Hind". The signature is written in a cursive style with a light blue background behind the text.

Tom Hind / Chief Officer

Strategy

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AHDB targeted response to selected consultation questions.

Q 1. Does this document identify the right areas of focus: extending our strengths; closing the gaps; and making the UK one of the most competitive places to start or grow a business?

The Green Paper aligns with some of the key challenges and opportunities facing agriculture and horticulture in the UK. These include:-

- Unlocking the full potential within agriculture, horticulture and food to contribute significantly to UK economic growth
- Reversing the widening gap, evident since the mid-1990s, between agricultural productivity in the UK compared with our international competitors
- Preparing the industry to face the significant challenges posed by Brexit.
- Driving innovation and technological development to increase competitiveness, improve resource efficiency, minimise environmental impact and enhance the credentials of British produce in the eyes of the consumer.

Q2. Are the ten pillars suggested the right ones to tackle low productivity and unbalanced growth? If not, which areas are missing?

All 10 pillars appear highly relevant to the UK economy as a whole and specifically to the agriculture, horticulture and wider food industries. A key challenge running through the pillars is to address systemic weaknesses that are hampering productivity and economic growth. From an agri-food standpoint, our assessment is that three factors are critical in terms of driving agricultural productivity growth. These are:-

- Delivering a comprehensive innovation pathway that delivers scalable solutions to the major challenges facing farmers and growers. This requires a fundamental overhaul of the governance arrangements that underpin public investment in agricultural R&D as well as greater focus of investment in near market research
- Addressing the fragmentation and lack of capacity that exists in relation to knowledge exchange in the UK ([http://www.proakis.eu/sites/www.proakis.eu/files/Final%20Draft-%20Country%20Report%20UK\(1\).pdf](http://www.proakis.eu/sites/www.proakis.eu/files/Final%20Draft-%20Country%20Report%20UK(1).pdf))
- Incentivising and encouraging greater investment by the industry, especially producers in skills and training

AHDB is well placed to play a key role in addressed all three of these factors.

An important cross-cutting requirement not explicit in the pillars, is to speed up the diffusion of new knowledge and technical advancement through the agricultural industry which is composed of many SMEs, often under owner occupier control, managing complex biological systems across a diverse range of operating conditions. Measures to address this requirement are described under some of the responses below.

Q 3. Are the right central government and local institutions in place to deliver an effective industrial strategy? If not, how should they be reformed? Are the types of measures to strengthen local institutions set out here and below the right ones?

The Industrial Strategy needs to be considered in light of the Government's own Agri-Tech strategy that was published in 2013. This has led to a significant investment both in catalyst projects as well as capital and infrastructure in agricultural R&D.

Four Agri-Tech Centres of Excellence have been established in Crops, Livestock, Engineering/Precision Agriculture and Big Data, representing approximately an £80m investment in research and development capacity. These should provide an excellent platform to give agricultural and horticultural science a 'leg up'. Nonetheless, we have growing concerns about the capacity of the Centres to achieve the outcomes they were set up to deliver. The Centres suffer from a lack of common direction and guidance. There is a need to coordinate thinking and activity amongst them and take a more fundamental look at the funding model that depends significantly on commercial funding to deliver pre-competitive research outcomes. Some degree of undue cost and complexity has been added to an already fragmented landscape. There are also lessons to be learned from the process which established the Centres of Excellence. A more coordinated, directive approach working together with industry and the research base could have increased efficiency and reduced unhelpful competition between institutes over access to capital spend.

An Industrial Strategy for agriculture needs to connect with these Centres, delivering to industry-determined priorities, and ensuring the capital investment already made is supported through opportunities to bid for further operating revenue. It also needs to encourage much greater alignment with effective knowledge exchange channels, especially AHDB.

There is a pressing need to better align fundamental and translational research providers, in order to ensure that the fundamental research undertaken addresses scientific blockages to improved productivity. Similarly, translational providers must be keyed in to basic research outputs, developing them for practical use, and transmitting them through appropriate KE channels to implementation by industry. AHDB would welcome the opportunity for closer alignment with UKRI.

The concept of the European Innovation Partnership (EIP) under Horizon 2020 has not been implemented well in the UK, particularly the Operational Group model which brings farmers and researchers together to stimulate innovation and develop best practice, and is another example of a missed opportunity.

Opinion should be sought as to how levy boards can once again act as industry co-funders with government, particularly in sectors with demonstrable market failure and to encourage pre-competitive applied R&D.

AHDB (together with industry collaborators) would welcome closer dialogue with BEIS, while concepts around the industrial strategy are still being developed to ensure the framework and associated mechanisms will work for the agricultural sector.

Q 4. Are there important lessons we can learn from the industrial policies of other countries which are not reflected in these ten pillars?

Key to a successful outcome will be the integration of appropriate pillars, correctly weighted and implemented according to sector. Parachuting in models or solutions from other sectors to be directly applied to food and agriculture will risk failure.

There are lessons that can be drawn from other countries. To cite three examples:-

- In Ireland, Food Wise 2025 (<http://agriculture.gov.ie/foodwise2025/>) brings government and industry to work together at a strategic level, to set out a vision, agree objectives, identify constraints to be overcome (including gaps in research and knowledge exchange), agree the coordinated actions to be taken by the collaborating parties across the supply chain, with progress reported back to an implementation committee. This builds on a previous strategy under Food Harvest 2020.
- In the Netherlands, nine 'top sectors' (including Agri-food, Energy, Horticulture and High tech) have been prioritised to strengthen the Dutch international trading position (<https://www.government.nl/topics/enterprise-and-innovation/contents/encouraging-innovation>). A diverse range of measures are included as part of a strategy to strengthen links to industry and incentivise innovation.
- In Denmark, the Agro Business Park (<http://www.agropark.dk/>) specialises in knowledge based innovation and entrepreneurship within agriculture, bioenergy, environmental technologies and food processing, bringing academia, agri-food industry, national research and extension services into close proximity, with the aim of greater collaboration and cross fertilisation.

The above examples, specific to agriculture, should be examined in terms of likely success factors which could be translated into the industrial strategy for agriculture.

Q5. What should be the priority areas for science, research and innovation investment?

AHDB has prioritised the following routes to increase competitiveness and productivity.

- Realising genetic potential
- Building sustainable plant and animal health
- Managing resources efficiently and sustainably
- Driving precision technology into practice
- Facilitating wholesome and trusted food in the supply chain

Q6. Which challenge areas should the Industrial Challenge Strategy Fund focus on to drive maximum economic impact?

- Advanced genetics and accelerated breeding to increase crop and livestock productivity and resilience
- A fundamental shift in paradigm for the management of soil health, plant disease, pest and weed control
- Robotics, remote sensing, automation and precision technologies to minimise reliance on human labour and imported inputs
- Advanced analytics to exploit the use of big data

Q7. What else can the UK do to create an environment that supports the commercialisation of ideas?

- Provide clear and consistent long-term government policy, leadership and financial incentives linked to industrial outcomes/performance

- Ensure a complete functioning research and development pipeline from fundamental through applied research, translation, commercialisation to effective knowledge exchange
- Focus more R&D from an end-user, rather than research perspective. Support the farmer-to-farmer-to-researcher interactions that deliver innovations at farm level
- Expand the 'routes to market' from university mediated knowledge transfer, to build expertise and networks across the sector using trade organisations, levy boards, business to business knowledge exchange
- Reconsider the value of greater open access and wider exploitation by the first user, recognising that a primary focus on protecting IP can be a barrier to dissemination
- Ensure that sufficient allowance is made for funding pre-commercial research, to bridge the final step to commercial exploitation

Q8. How can we best support the next generation of research leaders and entrepreneurs?

Retrenchment of Government funding in the mid-1980's towards fundamental research, at the expense of 'near market' R&D, meant that young scientists chose career paths based in fundamental science, in order to publish in high impact scientific journals. The volume of applied research diminished to the detriment of productivity, exacerbated by loss of centres involved in translational research, diminished ability by staff to interpret the relevance of research results in a wider systems context, and the erosion of specialist expertise in subjects such as soil science, plant pathology and entomology.

Actions which could be taken to support the next generation of applied researchers and entrepreneurs include:-

- Greater funding and support for near market research
- The creation of plausible career structures (PhD studentships, post-doctoral and senior fellowships) for scientists and technologists in areas which will deliver economic benefit
- Strengthening links between industry and research, creating opportunities to embed research workers in commercial operations, with provision for mentoring and early identification of entrepreneurship
- Recognising that competition and collaboration should not be mutually exclusive, as research leaders can develop through both academic and industrial routes. Academic excellence is often developed through a competitive research route via research councils; commercial excellence is more often team-based because of business structures

Q9. How can we best support research and innovation strengths in local areas?

Acknowledged Centers of Excellence already exist in bioscience and agriculture, distributed regionally. These should be supported to build further critical mass and expertise, recognising where existing strengths, rather than recreate or duplicate for geopolitical reasons.

Q11. Do you agree with the different elements of the vision for the new technical education system set out here? Are there further lessons from other countries' systems?

AHDB agrees with the direction set out in the Green Paper. There is a tendency for agriculture to be seen by the education/careers sector as low skilled. This preconception is based largely on the lack of formal academic qualifications required to work in the industry, and perceived lack of understanding about progression opportunities. In secondary education, agricultural science is not classed as a STEM subject, reducing its status relative to other subjects. Yet the industry is highly skilled, and increasingly reliant on technology and innovation. Full recognition for technical training is vital both to upskill vocational roles and to support the development of people who don't wish to follow more formal routes.

A reduction in number of qualifications available and the potential rise in quality would be welcomed. Large numbers of qualifications causes confusion and disperses already limited resources. This results in poor investment in equipment/technology within educational institutes, and restricts the concentration of training capability and expertise. Some other countries include a strong element of practical, industry-based learning, which has benefits for pupil engagement, as well as supporting the development and maintenance of industry/education links which ensure more relevant and up to date content.

Q13. What skills shortages do we have or expect to have, in particular sectors or local areas, and how can we link the skills needs of industry to skills provision by educational institutions in local areas?

Skills shortages occur across a number of areas, which are potentially constraining for productivity and business resilience, including:

- Technical Skills
- People skills and leadership skills
- Risk management
- Business management skills
- Communication Skills

The current system of funding on head count is counterproductive for sectors that have more specialist job roles. KPIs on head count should be replaced with KPIs based on subsequent employability and industry feedback. Agriculture and horticulture is rapidly changing, so support is also needed for educational institutions to constantly update, this includes staff knowledge, equipment and course content. Labour market information would go a long way to ensure that the content and delivery methods are more aligned with industry need.

Q14. How can we enable and encourage people to retrain and upskill throughout their working lives, particularly in places where industries are changing or declining? Are there particular sectors where this could be appropriate?

Expanding enrolment on AHDB-sponsored professional registers for the pig and dairy sectors (Pig Pro and DairyPro respectively) indicates increasing recognition for the value of demonstrable professional competency, linked to lifelong learning. This approach could be expanded to other sub-sectors, including providing a better evidence base to support the perceived value of CPD.

Incentives for businesses (not necessarily direct financial support) will help generate more engagement. Policy and implementation in relation to farm apprenticeships should be reviewed, to

optimise access and exploitation agricultural training, and avoid business being conflicted between providing funding to support apprenticeships and provision for wider CPD.

Q17. What further actions can we take to improve the performance of infrastructure towards international benchmarks? How can government work with industry to ensure we have the skills and supply chain needed to deliver strategic infrastructure in the UK?

For certain commodities, a potential pinch point for infrastructure lies in the processing sector. Whilst the UK possesses some of the highest food safety and manufacturing standards in the world, it suffers from underinvestment in state-of-the-art processing in some quarters, such as dairy product manufacturing and red meat. This impinges on the cost competitiveness of goods as well as the flexibility to deal with changes in volume and customer demand according to the needs of the market. This can only be addressed by taking a strategic whole chain perspective which could form part of an integrated food industry 'Sector Deal'.

Fast or superfast rural broadband would enable businesses to operate more effectively, and exploit the wider opportunities created by digital connectivity.

Efficient transport networks are required for the movement of goods to internal markets/processing centres, and to exporting sites - recognising slim margins with little scope to absorb wastage in fresh and pre-packed produce.

Q18. What are the most important causes of lower rates of fixed capital investment in the UK compared to other countries, and how can they be addressed?

Paradoxically, whilst UK agriculture has seen increased lending through and beyond the financial crisis, there is little evidence that the investments made by farmers are improving the productivity of the industry as whole. This may be a consequence of poor decision making and/or incentives to investment in certain forms of capital that make limited contribution to competitiveness and productivity. Industry stakeholders have pointed to the loss of Agricultural Buildings Allowances as a contributory factor.

In addition the lack of profitability and increasing exposure to market uncertainty and volatility may be hampering long-term confidence of farmers and growers to invest. These can be addressed through consolidation, development of new business models, promotion of better business management skills and uptake of tools and tactics to manage risk and build resilience.

Q22. What are the barriers faced by those businesses that have the potential to scale-up and achieve greater growth, and how can we address these barriers? Where are the outstanding examples of business networks for fast growing firms which we could learn from or spread?

Historically, confidence to expand, access to land and capital have been seen as the main constraints. Progressive businesses will find a way to overcome these barriers. Greater market intelligence, consumer insight and understanding of current and prospective markets is a key enabler.

A better evidence base is required on the environmental benefits and disbenefits for increasing in scale, in order to inform planning regulation, national inventories, and societal acceptability.

Q25. What can the Government do to improve our support for firms wanting to start exporting? What can the Government do to improve support for firms in increasing their exports?

AHDB believes Government has a critical role to play in supporting companies wishing to access or expand into export markets. Breaking into and growing new export markets is complex, and time consuming. If revoked, a disproportionate amount of time and effort may be required to restore market access.

Role of government export development:-

- Setting the right tone to encourage UK companies to proactively seek out export opportunities
- Supporting trade missions and a presence in key markets
- Engaging in high level ministerial visits which are often a catalyst to an outcome
- Assisting in export compliance for the market in question, ensuring awareness of standards required, undertaking advisory pre-audits to ensure new entrants are sufficiently aware of the standards expected and do not compromise market access for others
- Simplifying export processes, ensuring border procedures are simplified, and infrastructure close to ports is fit for purpose and do not lead to transactional delays, especially for perishable commodities. Input should be sought from the existing UK Export Certification Users Group, of which AHDB is a member
- Ensuring audit trails for traceability and provenance, for example, are robust and designed to be future proof

There are opportunities for Government and industry to work closer together and form new partnerships to exploit and unlock market opportunities in third countries. AHDB's own experience of working with DIT and Defra in China, where AHDB co-funds the Agricultural Counsellor role to identify market opportunities and support market access work has been tremendously successful. This provides a potential model that could be explored in other third country markets.

Q31. How can the Government and industry help sectors come together to identify the opportunities for a 'sector deal' to address – especially where industries are fragmented or not well defined?

The Agri-food sector, especially farming, is highly fragmented. AHDB is well placed to reflect the needs of the industry and bring key stakeholders and partners together to present a cogent case for a sector deal. Objective evidence can be drawn from across AHDB Directorates – Market Intelligence, Technical, Market Development to provide strategic and cost benefit analyses, supporting the development of a persuasive proposition. AHDB and NFU are already collaborating to convene an early workshop with key individuals from government, industry and the research base to scope the opportunity and identify potential topics which could be tackled effectively via a Sector Deal (s).

Q32. How can the Government ensure that 'sector deals' promote competition and incorporate the interests of new entrants?

Lack of competition is unlikely to be a problem in food and agriculture, compared to industries which are more consolidated. Latitude for competition and for new entrants can be accommodated by ensuring sector deals are set up to be inclusive, able to harness the hunger and drive of new companies, creating a framework where companies continue to grow and innovate. To be avoided is a situation where coordination and strategic vision are compromised, in an effort to leave it open to the market.

Q33. How can the Government and industry collaborate to enable growth in new sectors of the future that emerge around new technologies and new business models?

New technologies are likely to spawn new businesses opportunities. There is huge potential for disruptive technologies to move across sectors. An Industrial Strategy should facilitate visibility, lessons to be shared, and/or further collaborations to emerge across sectors. Agriculture is multi-functional and, as such, could offer wide scope to develop business opportunities, for example, in energy generation or in greater use of electrically powered vehicles. New funding models may need to be considered according to the developing opportunity.

Q34. (Driving Growth Across the Whole Country) Do you agree the principles set out above are the right ones? If not what is missing?

Already highlighted is the fact that agriculture impacts on local and regional economies across 70% of the UK landmass. Driving the productivity of our agricultural land will not only yield benefits for rural economies, but will also underpin sustainability outcomes.

Q35. What are the most important new approaches to raising skill levels in areas where they are lower? Where could investments in connectivity or innovation do most to help encourage growth across the country?

Innovative research is required which investigates how skills needs are determined, skill levels raised, and the investment maintained in areas of high productivity. The outputs can then be interpreted in the context of lower performing areas. For the agricultural sector, access to the internet is still intermittent for many, which can make it more difficult to find the right information or access distance learning.

Q36. Recognising the need for local initiative and leadership, how should we best work with local areas to create and strengthen key local institutions?

The success of local/regional development is largely a reflection of the strength of local linkages. Lessons can be drawn, for example from the East Lincolnshire LEP, which can be facilitated by Government and spread more widely.

Q38. Are there institutions missing in certain areas which we could help create or strengthen to support local growth?

The priority ought to be to encourage existing institutes and networks to collaborate and work more cohesively together to build critical mass and skill levels, rather than expand in number without clear view of what they bring in terms of differentiation/additionality.

Specific gaps may be identified in the construction or implementation of 'Sector Deals'.