Maximising the productivity and quality of UK food production – implementing the Agri-tech Strategy

The Foundation for Science and Technology
21st May 2014

George Freeman MP
Member of Parliament for Mid Norfolk
Chairman of the APPG on Science & Technology in Agriculture

Career
- Farming family background
  - Student trainee, Greens of Soham.
- NFU Parliamentary Officer
- 15 year career Bioscience Venture Capital
- Non-Executive Director: NRP, Iceni Seed Fund
- Non-Executive Director: Elsoms Seeds
- 2010 Elected to Parliament for new constituency of Mid Norfolk
  - Chairman of the All Party Parliamentary Group on Science and Technology in Agriculture
  - Government Adviser on Life Sciences
    - UK Life Science Industrial Strategy
    - UK Agri-Tech Industrial Strategy
  - UK Agri Tech Industrial Strategy Leadership Council.
  - UK Trade Envoy to the Philippines
Agricultural Science and Technology: The Challenge and Opportunity

- The Global Agri-Tech Revolution
- Challenges and opportunities
- UK Agri-Tech Strategy
- Implementation: barriers and priorities

UK Agriculture Sector: a major industry

- The Agri-Food supply chain contributes £96 billion
- Agriculture contributes £9 billion to the UK economy
- Underpins £26 billion food and drink manufacturing sector
- The UK is one of the top 12 food and drink exporters in the world
- UK exported £18 billion of food, feed, and drink in 2012
- 3.8 million employed in agriculture and fishing supply chains
But self sufficiency is *declining*

**UK food self-sufficiency (by commodity) 1980-2005**

![Graph showing self-sufficiency by commodity](image)

**Source:** Cabinet Office Strategy Unit (2008)

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...big global pressures on all commodities

**CLIMATE CHANGE**

**WATER**

**POPULATION GROWTH**

**LAND**

![Graph showing global water consumption](image)

*Source: Centres for Agricultural Innovation. Presentation by Judith Batchelor, 13/03*
Food insecurity. Geo-political tensions.

20 countries have alarming or extremely alarming levels of hunger.

How are we going to feed the world?
With Technological Innovation

UK – opportunity and challenge

- Home of the 1st Agricultural Revolution
- World class food and farming sector
- World class Agricultural R+D research base
  - £450m Annual expenditure by UK Government!
- Vast global markets for food, R+D + UK leadership

But

- UK Science base + Farming Industry + Global markets - not well integrated
- No UK strategy, vision or business plan.
The Opportunities, The Challenges.

The Opportunities
- Inward Investment From Wave of Global $ For Ag Science
- UK IPR / Tech Transfer
- Spin-outs
- Competitiveness of UK Agriculture Plc
- Emerging Markets
- Growth of Bioeconomy

The Challenges
- Food Inflation
- Relative Decline of UK Applied Science Base
- Global Population Growth
- Global Climate Change
- Fragmented / Silo’d UK
- Lack of grassroots networks
- Lack of demonstrable metrics

UK Strategy for Agricultural Technologies
Science + Innovation

Science
Supply Chain
Global markets
Science          Supply Chain     Global markets

Science          Food and Farming     Aid & Trade
The Goal: what success would look like

- Better industry links / Leadership in UK Ag-Science
- Significant Inward Co-investment Into UK R+D
  - From Global & Industry / Partners
- Boost Global Status of UK Ag Research
  - Attract and train top rising star researchers
- Better Capture And Commercialise UK IPR
  - Technology transfer / spin outs and start-ups
- Catalyse a vibrant UK Agri-Tech VC Sector
- Support greater industry / research collaboration and uptake
- Increase grass roots ‘demonstration farm’ uptake
- Develop UK leadership in science + metrics of sustainability / Ag-informatics
- New Global Collaborations / Trade Links
Needs to a Strategy for all the Partners

- UK Research sector
  - JIC, Rothamsted, Aberystwyth, IFR, NIAB, Roslin, James Hutton, Etc
  - Levy Boards
  - BBSRC

- Global AgBioTech
  - Big 6:
    - UK: Syngenta,
    - Row: Basf, Monstanto, Bayer...
  - Nutriceuticals:
    - Abbot Nutrition
    - Uniliver

- Farming
  - Progressive Leaders: Cargill, Velcourt, G's, Spearhead, Etc
  - Family Farms

- Food Industry
  - UK And Global, (Pepsico,
  - Small / Farm Gate
  - Processors
  - Retailers

- Charities
  - UK Foundations
  - Gates Foundation
  - NGO's

- Sovereign Wealth
  - Brics
  - Qatar
  - EU

Measures

1. The Agri-Tech Catalyst Fund
2. Institute of Agricultural Metrics
3. Agricultural Innovation ‘Hubs’
4. Access to global markets
1. Agri-Tech Catalyst Fund

- A £70 million Fund to support early stage Proof of Concept / Translation of agricultural innovation

- Strategic aim: to promote innovation and the translation of science and technology into common practice in the supply chain

- The Catalyst will take innovative ideas from any sector or discipline that demonstrate the potential to advance sustainable intensification of agriculture and deliver economic impact for the UK Agri-Tech industry by tackling domestic or international challenges.

2. Agricultural Innovation ‘hubs’

- Investing £90 million in a number of regional / sectoral Agricultural Innovation ‘hubs’
  - Virtual / Physical
  - Sectoral / Regional
  - Deep science to near market

- Network of grassroots Hubs for practical farm businesses / Ag Colleges to plug into

- The first Centre for Agricultural Informatics, to establish the UK as a world class centre in agricultural informatics

- Rest will be industry-led / partnered

- Open to bids now
3. Institute of Agricultural Metrics

- Informatics is the collation and application of insights gained from the study of large integrated data sets.
- It is starting to deliver benefits across genetics, economics, agronomy, hydrology, and soil science.
- The Government will establish a Centre for Agricultural Informatics and Metrics of Sustainability, at an estimated cost of £10 million.
- Creating a global hub of excellence.
- The first of the Centres of Agricultural Innovation.
4. Emerging Markets

DfID £10m Catalyst for Emerging Market Agri-Tech

FCO / DfID ‘Africa Britain China’ (ABC) Partnership

UKTI Agri-Tech Unit

Inward investment

Trade and Export promotion

.....Agri-Tech in the ‘Global Race’

..........Strategic alignment of Aid and Trade in emerging markets

...........eg. Kenya / E Africa

The key to success?
Ambitious, skilled, entrepreneurial next generation of new entrants.

Agri Tech 1980s-2013: Key Challenges

- Lack of Govt recognition
- Lack of Ind funding for R+D
- Fragmented research base:
  - Competitive, not collaborative
- Over-dependence on BBSRC / TSB core funding
- Lack of key res skills
- Lack of rewards for IPR / commercialisation
- Short termism and lack of R+D culture in food ind
- UK missing out on wave of global finance for Agsci
- Defra v DFID v BIS
- Whitehall ignorance of commercial agri-food sector
- UK missing out on huge EU funding
- CAP reform going away from intensive ag support
- Lack of leadership (forum) in UK ag sci policy
- Poor translation of Agsci to the field/farm
- Lack of demonstration farms
- Lack of input on Res priorities from industry
- IPR leakage
- EU regulation (GM)
- UK far too parochial – lacks global ambition / vision
Priorities for 2014

- Industry leadership and co-investment
- UK leadership in metrics, measurement and evidence-based policy
- European regulation
- The UK Centre for Agricultural Metrics
- Demonstrating early wins
  - Inward investment
  - Commercialisation of innovation
- Public and consumer support for 21stC ‘progressive farming’

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