

All-Party Parliamentary Group on Science & Technology in Agriculture

**Notes of a meeting held on Wednesday 9 April 2014
Committee Room 18, Palace of Westminster**

Building public support for UK agri-science

Present:

Members

George Freeman MP (Chair)
Lord Cameron of Dillington

Guest Speaker:

Professor Sir Mark Walport, Chief Scientific Adviser to HM Government

Stakeholders

Giulia Cuccato, Defra; Sez Maxted, NIAB Trust; Paul Rooke, AIC; James Wallace, AIC; Jim Godfrey, Agri-Tech LC; Melanie Leech, Food & Drink Federation; Tim Smith, Tesco plc; Anne Miller, Environmental Sustainability KTN; Jan Chojecki, PBL; Patrick Bonnett, Fera; Gordon Jamieson, JIC; Brendon Noble, NALEP; Sean Ryan, Defra; Penny Maplestone, BSPB; Harriet Truscott, Sainsbury Lab, Cambridge; Charles Tassell, AgriChatUK; Calum Murray, TSB; Rosana Verza, Embassy of Brazil; Denis Chamberlain, LaSalle Investment Management; Simon Blackmore, Harper Adams University; Ed Moorhouse, G's Fresh Produce; Malcolm Hawkesford, Rothamsted Research; David Alvis, Winstone Associates; Ian Pigott, Farming & Countryside Education; Richard Whitlock, Oxford Farming Conference; Martin Jenkins, Farmer (Cambs); Martin Collison, Collison Associates; Stephen Axford, BIS; Oliver Savory, NFU; Harriet Pickles, Which?; Alice Midmer, LEAF; Verity Hawles, GO Science; Caroline O'Leary, nabim; Martin Savage, nabim; Ian Crute, AHDB; Paul Leonard, BASF; Andrew Osmond, Farmer/CFG; Daniel Pearsall, Group Co-ordinator

1. Welcome & Introduction

George Freeman (GF) welcomed Members and stakeholders to the first in a short series of meetings hosted by the All-Party Group to examine consumer attitudes to agri-science, and explore ways to build better public engagement, understanding and acceptance of the use of technology and innovation in farming and food production.

GF explained that the Group's work programme on public attitudes to agri-science had been initiated to support the implementation of the Government's Agri-Tech Strategy, and in response to Science Minister Rt Hon David Willetts MP who had stressed to the Group last year the need to transform a sceptical consumer base by transparently highlighting the use and positive contribution of agricultural research and innovation.

Introducing guest speaker Sir Mark Walport, GF observed that the UK was uniquely equipped with a chief scientific adviser in every government department, unlike the rest of Europe where only three countries had a chief scientist let alone one in every department. GF noted that Sir Mark came to his post from medical science, where strong public support for progress in genetic research contrasted sharply with consumer resistance to its use in agriculture, despite the common and merging science base underpinning developments in food, nutraceuticals and medicine.

2. Guest speaker

Professor Sir Mark Walport, Chief Scientific Adviser to HM Government

Sir Mark Walport (MW) opened by noting that genetic advances in medicine, such as humanised GM insulin for diabetics, were often more immediately accepted by the public because of their direct and tangible benefits, whereas the advantage of a longer-lasting tomato, for example, was less obvious. But MW also noted that progress in genetic medicine was not entirely uncontested, pointing to current sensitivities within the NHS surrounding the sequencing of whole human genomes.

Introducing the role of chief scientist and the contribution of scientific advice within Government more broadly, MW's task was to inform Government policy on the implications of science, engineering, technology and social science. He described his job as science for policy, rather than policy for science, with a focus on protecting the health, well-being and resilience of the population, the economy and its supporting infrastructure – built and natural - in which the supply of food, energy and water were absolutely fundamental.

MW highlighted the important work of his predecessor Sir John Beddington in highlighting, through Foresight, the concept of an emerging 'perfect storm' of challenges encompassing food, water, climate and the environment.

Key global challenges for food and agriculture in the context of a rapidly growing global population, alongside lifestyle, demographic and environmental change, were to safeguard security of supply, quality of nutrition, and to manage risks associated with the safety of food in terms of provenance and freedom from contamination – particularly given new sophisticated technologies which brought testing sensitivities down to the molecular level.

In relation to pesticides, MW highlighted the importance of striking a balance between food security on the one hand, and protecting biodiversity on the other. He suggested the current EU moratorium on neonicotinoid seed treatments was not backed up by sufficient field evidence – based on conditions of good agricultural practice – and served to highlight the confusion in regulatory circles between perceptions of hazard and actual risk.

MW noted that public engagement was extremely important across all sectors of science and its use in policy decisions. In relation to food, he highlighted the findings of an Ipsos MORI survey of public attitudes to science commissioned by BIS, which found that only 28% of people felt that food security was a big issue for the UK, but 72% saw food security as a big issue globally. Meanwhile 77% thought the world already produced enough food to feed its population, underlining broad misconceptions that the food security challenge is only about the distribution of food, rather than the combined need to increase agricultural production sustainably while reducing waste and changing consumption patterns.

MW also observed that while scientists themselves ranked high in terms of public trust, the level of trust differed in terms of the specific issues involved. Similarly, there was a tendency to treat technologies generically – eg is GM or synthetic biology a good thing – when what really mattered was the case by case application of the technology. MW highlighted the example of GM soya enriched with sulphur-containing amino acids derived from a Brazil nut protein but which also cloned the major allergen in Brazil nuts into the soya plant. This research had been discontinued but underlined the need to look at each product on its own merits – what gene, what organism, for what purpose?

Looking at how to improve public engagement and science conversations generally, MW cited recent work in this area by two leading social scientists - Nick Pidgeon at Cardiff University and Tim O'Riordan at UEA - in relation to the science underpinning climate

change and geological disposal of nuclear waste. This highlighted a number of key recommendations for effective public engagement on scientific issues:

- move on from the deficit model of science communication (ie the public is ignorant and needs educating) towards a more neutral starting point in which the challenge to be addressed and all potential alternative solutions are presented – including debating the ‘do nothing’ option to establish a consensus that the status quo is not an option.
- ensure decision-making happens at an appropriate geographical level, not passed down from on high, with discussions taking place at local, regional and national level. Citing the example of fracking, MW also highlighted the risk of having two separate conversations running in parallel – eg an engineering conversation addressing the scientific risks associated with methane release, earthquakes and water contamination, while protesters approach the issue from a NIMBY perspective, concerns over fossil fuel use or opposition to the involvement of corporate industry interests.
- seek to involve the public in decision-making, not just the experts and regulators – reflecting the BIS public attitudes survey which found that 71% of people felt they should hear about developments in science and technology before or as they happen, not afterwards.
- engagement work should as far as possible be run by independent organisations, and the communication process should be tailored more effectively (eg avoiding village hall type meetings which tend to attract professional campaigners), by engaging with people who have unformed opinions, using existing channels and community groups, working with the UK’s excellent science media, and also using social media.
- engage people’s emotions and sense of responsibility, and make people proud of the UK’s excellent science base and its role in improving the sustainability and productivity of British agriculture – find good technology champions and case studies to demonstrate clear benefits to consumers.
- avoid talking about technologies generically but focus on their specific applications and the resulting products.

In conclusion, MW highlighted the strong commitment from the UK Government to supporting innovation in agri-science through the Agri-Tech Strategy, including investment in a catalyst fund, new centres for innovation, an agricultural data and metrics centre, and the creation of a dedicated unit at UKTI to attract inward investment.

MW noted that the Council for Science and Technology had also written recently to the Prime Minister outlining technical developments on genetic modification and discussing some of the associated public engagement issues – he noted that media coverage of the CST report was much more balanced and measured compared with 15 years ago, indicating that public and media attitudes towards scientific innovation in agriculture were part of an already improving landscape.

In summary, many of the principles applied to public engagement on agricultural technologies could equally be applied to all new technologies. Getting the balance right between supporting innovation and managing risk communication was critical. MW announced that he would be producing an annual report on the issue of risk and innovation later this year as it was such an important topic.

3. Questions and Discussion

GF opened the Q&A session with a straw poll among the audience on the following questions:

- Is genetic science in food and agriculture a force for good? (Yes, 100%)
- Are people concerned that we may not yet have the right regulatory framework for ensuring safety and appropriate risk management? (Yes, 25%)
- Are the public broadly in agreement that genetic science in food and agriculture is a force for good? (Yes, 10%)
- Is that number getting bigger – are public attitudes improving? (Yes, 100%)

The following key points arose during discussion:

The global commodity shortages and food price volatility of recent years are creating the conditions for more positive public attitudes towards new technologies in agriculture.

The Food Standards Agency's public attitudes tracker shows the level of concern about pesticides and GM fell between 2001 and 2013, from 48% to 25% in the case of pesticides, and from 43% to 20% in the case of GM.

A Which? study in 2012 showed that consumer attitudes towards risk in food production are focused on long-term health risks and uncertainties, environmental impact, naturalness, negative impact on quality and taste and urgency to take the risk.

Modern maize varieties were originally derived from a small Mexican plant called teosinte, which over the years has had its genome doubled and been subjected to millions of genetic changes, duplications and deletions, yet we do not consider it to be genetically modified and rightly regard it as safe to eat, but then changing one gene in one nucleotide through GM prompts major safety concerns, highlighting the need for context and proportionality.

Need to consider other technology areas beyond GM, such as precision engineering and the use of smart machines, image recognition technology and robotics to perform tasks such as mechanical weed and pest control, and spot application of herbicides only onto the leaves of weeds.

Could technology be used more widely to communicate and improve awareness of agri-science – such as Q codes placed on food products to provide more detailed information about provenance and production technologies?

According to the FSA tracker, while consumer concerns over GM and pesticides have been going down, concerns over food prices have been going up, alongside concerns over salt, fat, sugar and food waste. These could be key areas to focus on in improving consumer confidence in modern food production methods.

Need to avoid creating a situation in which small but vociferous anti-science lobby groups succeed in making the UK an unattractive place to invest in agri-science research because of unduly burdensome requirements associated with public engagement.

Unclear whether economic arguments (eg the impact of a major company withdrawing investment from Europe because of anti-science regulatory culture) cut through with the consuming public.

Role of science teaching in schools (especially primary schools) seen as critically important in improving public attitudes towards agri-science. All the evidence suggests that young

people are instinctively curious and fascinated by science from a very early age - the challenge in schools is not to turn them off.

A paradox of the GM debate is that many of the campaign groups opposed to pesticides are equally opposed to GM, even though GM traits such as Bt are effective at targeting insect pests without harming beneficial pollinators, and significantly reducing insecticide use.

From a scientific perspective there is a need to start from a neutral position in articulating the challenge and examining all available solutions. The use of GM in livestock has attracted less concern because it is perceived to be tackling particular disease or health problems. In doing so, the starting point is that we can all agree on the need for a safe, nutritious and affordable supply of food.

UK is seen as the most science-rational country in Europe, with global reach and influence.

Rothamsted GM wheat trial demonstrated that public sector research institutes can do more to secure a positive public dialogue and support for agri-science than any commercial company.

Neonicotinoid issue at EU-level raises serious concerns over the exclusion, through conflict of interest, of scientists who work with industry from sitting on EFSA regulatory panels. This significantly weakens the scientific expertise available to the regulatory process, and causes companies to question whether to work with scientists in the public domain, further damaging confidence in future industry investment in Europe.

Water seen as an increasingly important socio-political issue, with significant potential to limit agriculture's food producing potential, particularly as climate change affects the pattern of water distribution at a national level and around the world.

Agricultural land is often seen by water companies as a disposal route for sewage sludge rather than a valuable way to improve soil water retention, quality and fertility. A key communication challenge is to accentuate the economic and environmental benefits of this practice while at the same time responding to perceived concerns over potential heavy metal and pathogen contamination.

There needs to be a programme of public engagement on the issue of 'sustainable intensification' in agriculture, to highlight the challenges facing farmers and the need to adopt new technologies to prevent productivity sliding backwards. A key tool urgently needed by UK growers would be herbicide tolerant cereals, enabling growers to boost production through effective control of blackgrass in higher-yielding winter-sown varieties.

Important for farmers to be centre-stage in the public engagement process, articulating their challenges as well as the potential solutions. BBC's Harvest programme had been extremely effective in communicating the key issues facing grass-roots farmers.

Methods to disseminate best practice in agriculture are not considered to be as well-developed or effective today as they were when concentrated in the public domain.

Agri-science needs better communicators, on a par with those skilled in bringing astrophysics or the origin of species to life, and able to reach a range of different audiences in terms of age, education, gender and social background.

In conclusion, GF noted that public attitudes towards agri-science are changing, albeit slowly, as people become more sensitised to concerns over food price volatility, climate

change and the insecurity of world food supplies. A key challenge was to articulate the problem and frame the opportunity in the most effective way to engage and connect with a diverse audience of consumers. GF thanked Sir Mark Walport and attendees for their input to a wide-ranging and stimulating discussion which would contribute significantly to the All-Party Group's ongoing work programme in this area.