

**Rt Hon Owen Paterson MP speech to the APPG on Science and
Technology in Agriculture – 17 December 2013**

Introduction

Thank you for inviting me to speak here today. I am constantly impressed by the work of the APPG. You provide an excellent forum for important discussions on how we can continue to help our agriculture industry develop and become more innovative, while at the same time supporting our science sector.

I would particularly like to thank George [Freeman] for his support and advice on the Agri-Tech Strategy and on GM. I know that this builds on the work he's already done on Life Sciences.

In David Willetts, Rupert de Mauley and me you have a strong set of Government Ministers who know the importance of science, technology and innovation to growing the economy. There is so much potential in the UK – as the audience here shows – to take great leaps forward in agriculture.

This is a really exciting time. We should be aiming for a second 'Green Revolution' following in the footsteps of Norman Borlaug in the 1940s.

The scale of the challenge

The world's population is growing rapidly. There are currently 7 billion people, 1 billion of whom are hungry this afternoon. And by 2050 there will be 2 billion more people. We must find a way to do what Sir John Beddington's Foresight Report recommended – we must aim for “sustainable intensification”.

We can do more than just increase production, we can make it better and more environmentally friendly. Two of my key priorities are to grow the rural economy while improving the environment. I believe that we can only achieve this by developing and deploying new technologies in agriculture.

For example, it has been estimated that the production of a given quantity of a crop now requires 65 per cent less land than it did in 1961. Between 1967 and 2007 world food production increased by 115 per cent but land use only increased by eight per cent. Indur Goklany has calculated that if we tried to support today's population using the production methods of the 1950s, instead of farming 38 per cent of all land, we would need to use 82 per cent. We are making huge global improvements in the way we farm – I want the UK to be at the forefront of this movement.

There is a huge opportunity for the UK to not only increase our own production but also to export the expertise and technologies to help others increase their production.

The Agri-Tech Strategy

This is the premise behind the Agri-Tech Strategy that we launched in July. We need to improve our ability to translate our world class research into applications that will make us world leaders not only in Agriculture but also in the science and technology that supports it.

To do this, we announced a £70 million Catalyst to help commercialise new agricultural technologies. This includes £10 million to support the transfer of these technologies and products to developing countries.

We have committed £90 million to set up world class Centres for Agricultural Innovation. As the industry is crucial to making this work, they will be co-funding these Centres. The aim is to support the wide scale adoption of innovation and technology across key sectors. Since the launch of the Strategy there have already been more than 200 registrations of interest, half coming from the industry. The first of these Centres will focus on Agricultural Informatics and Metrics of Sustainability.

There's a new unit in UKTI to boost inward investment and exports. There will be an Agri-Tech Business Ambassador to drive forward exports in agricultural technologies. Exports are a key way for the industry to grow. As I saw in a spectacular manner 10 days ago in China in the New Hope Dairy who are expanding incredibly quickly. I have already introduced some UK companies to them. This extraordinary growth will need technological support and it could be the UK providing it.

Do let me know if there's anything more that we can be doing to make introductions or break down barrier.

The food and drink sector in the UK is already well developed, worth £96 billion. The OECD estimate that the 'bio-economy' could contribute over \$1 trillion of added grow value to countries by 2030. I want the UK to be at the forefront of this. I want our farmers and food producers to have access to the widest possible range of technologies – ranging from new applications of robotics and sensor technology to new LED lighting in greenhouses and cancer-fighting broccoli. I want our industry to take advantage of the growing population and changing tastes around the world.

GM and the Rothamsted Speech

One of those technologies should be GM. Genetic modification is not a silver bullet, it won't fix every problem. But there is a huge amount of potential and that should be available to our farmers.

Golden Rice could add vitamin A to rice providing a much needed source of vitamins to children in developing countries who are going blind and dying.

I recently met with the Spanish Agriculture Minister who told me that in Spain they have developed a variety gluten-free GM wheat.

At Rothamsted they are developing an aphid resistant wheat.

The possibilities and opportunities are endless.

It's been nearly 6 months since my Rothamsted Speech, which in summary:

- Raised awareness about the potential role GM can play in addressing global challenges, such as food security, hunger alleviation and the sustainable intensification of agriculture;
- Highlighted not just the economic but the enormous environmental benefits that GM has already delivered and promises to deliver;

- Drew attention to the regulatory controls in place and the technology's safety record; and
- encouraged companies and research providers to look to the UK first when considering future investment decisions in this area. We have a world class plant science base and want to be the go-to place for developing the tools that the world needs to cope with increasing population and other pressures.

Recent Developments in GM

So what's happened since my June speech?

At the end of June, the European Academies Science Advisory Council issued a report entitled 'Planting the Future' which warned of the grave scientific, economic and social consequences of current European Union policy towards GM crops. EASAC are an authoritative and independent voice. They are formed by the national science academies of 24 different EU Member States, including our own Royal Society.

Their report draws a host of important conclusions but I'd like to quote four of them in particular:

- First, “Biotechnology for crop improvement must be part of the response to societal challenges. The EU is falling behind new international competitors in agricultural innovation and this has implications for EU goals for science and innovation and the environment as well as for agriculture.”
- Second, “There is no validated evidence that GM crops have greater adverse impact on health and the environment than any other technology used in plant breeding. There is compelling evidence that GM crops can contribute to sustainable development goals with benefits to farmers, consumers, the environment and the economy.”
- Third: “the current slow and expensive regulatory situation surrounding GM crops in the EU encourages monopolies. It is important to explore ways to stimulate open innovation and reformulate the regulatory framework so as to encourage smaller companies and public sector activities.”

- And finally: “EU policy actions influence the developing world and the wider consequences need to be taken into account when deciding EU strategic options. There is evidence that attitudes to GM crops in the EU have created difficulties for scientists, farmers and politicians in Africa and elsewhere.”

On August 8th, field trials of the vitamin A-enriched Golden Rice were vandalized in the Philippines. The trials were conducted by the Philippine Department of Agriculture, on behalf of the International Rice Research Institute (IRRI), a non-profit independent research and training organisation.

In September, the European Court of Justice issued a ruling which found the Commission guilty of failing to operate the procedures for approving a particular GM maize – known as 1507 - for cultivation in the EU. 1507 maize confers resistance to certain lepidopteran pests, namely the European corn borer, pink, fall armyworms, and others.

These pests are not prevalent here, so it's unlikely this maize will ever be grown in the UK, but where they are prevalent these pests can damage yields and require significant use of insecticide to control. The precise implications of this ruling could be far reaching, as the Court highlighted the importance of following the science-based decision making procedures currently enshrined in EU legislation without unnecessary delay.

In October, on World Food Day, a worldwide organisation of public sector scientists joined a host of European Farmer organisations in writing to the President of the European Commission, the President of the European Council and the President of the European Parliament about the damaging consequences of the EU's stance towards GM. They called upon the EU institutions and Member States to take a broader, more holistic, and longer term view on agricultural production of food, feed and biomass, and to adjust the GMO policies and regulations accordingly.

In November, the European Commission announced that they were transmitting this maize dossier at the heart of the ECJ ruling to the Council of Ministers for approval. They have called simultaneously for a renewed discussion on the stalled EU Cultivation Proposal. All eyes are now on the incoming Greek Presidency to see how they intend to handle those discussions. It's worth remembering that the last approval of a food-chain related GM crop for cultivation in the EU was over 15 years ago. What happens next could be pivotal for the future of the technology in Europe. That's why I continue to make the case.

And to bring us right up to date, just a few weeks ago, a scientific journal decided to retract an infamous article asserting a link between GM crops and cancerous tumours in rats because the results presented were inconclusive. Clearly, the retraction of the article has received far less publicity than the initial launch of the study – but I hope it marks a turning point in the GM debate nevertheless.

No better time to talk about GM

The conclusion I draw from these developments is that, quite simply, there is no better time to talk about GM. But don't just take my word for it:

- Farmers are calling for a fresh approach to the technology, particularly in light of the recent withdrawal of advanced pesticides
- Scientists and academia are calling for a fresh approach to the technology
- Some aspects of the media are even calling for a fresh approach to the technology, and I'd like to highlight the contribution of Mark Lynas in particular
- And as for me, I've made my views very clear. Farmers should have access to all the tools they need in order to be competitive.

This government will continue to promote the UK's world class science base. We are pro-innovation in all sectors including in agriculture.

The Agri-Tech Strategy demonstrates our commitment in this area.

I've been criticised in the past for focussing unduly on GM as a technology. I make no apology for that given the scale of benefits it offers. But I also believe that GM technology is of huge symbolic value as well as practical value.

By continuing to ignore the growing history of safe use of GM and the accumulated evidence of its benefits there is a real risk that we will deny ourselves access to the potential offered by new plant breeding techniques and other innovative technologies – both here and in those parts of the world where they might be needed most.

Let me be clear, there are other tools in the toolbox, GM is not a panacea. But the longer that Europe closes its doors to GM, the greater the risk that the rest of the world will bypass us altogether and our doors will be closed to other innovations as well.

Intellectual and commercial capacity in biotechnology is already leaving Europe. In a globalised and highly competitive food network, we can't afford for that to happen. It's time to reverse this trend and capitalise on our expertise in this industry. We have an excellent global reputation for science and technology. We need to make sure that we use this to attract new investment into the UK.

A huge amount of momentum has been generated in the last 12 months. My clear message to all those in this room today is please continue to work with us in the New Year to maintain that momentum and carry the discussion forward. If we can work together then our chances of success are greatly enhanced.

Concluding Remarks

The farming industry and the science sector have a unique opportunity at the moment. There is so much possibility for innovation - with the increasing population pressure a real need to find new and more productive methods of farming.

GM is one technology but already there are other new technologies emerging. Our farmers need to have access to all these technologies. And we need to encourage the science and technology industries to locate here. We have a world class science base, we need to make sure that we continue to boost it.

My aim is to help create the economic and political climate to allow farmers to use all the available tools to rise to this challenge. I want to continue to work with you all to do this.