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Rising food prices tip another 75m to starvation: FAO

Climate change: Prepare for global temperature rise of 4°C, warns top scientist

Warning of ‘food crunch’ with prices poised to rise

Meat must be rationed to four portions a week, says report on climate change

Urbanisation: 95% of the world’s population lives on 10% of the land

Climate warming means food shortages, study warns

Raise farm production to end food crisis – Diouf

UK food crisis is ‘not unthinkable,’ Chatham House says
Introduction

Progress in agricultural science and technology is essential to feed a rapidly increasing world population. Last year saw riots in some countries around the world due to food shortages and rising prices. It was a wake-up call for the international community that food security is even more basic than energy security.

The All-Party Group on Science and Technology in Agriculture provides an important Parliamentary forum to debate these issues, and highlight the need to support productive agricultural research and development in the long term, with a joined-up, strategic approach.

There are signs of progress towards such an approach in the UK. Defra has formed its new Food Policy Council and Professor John Beddington, the Government’s chief scientific adviser, has set up a Foresight Initiative to consider long-term food security issues. The Royal Society is conducting its own inquiry into biological approaches to boosting food crop production.

But major hurdles remain. As a nation we need to reverse more than 20 years of chronic under-investment in productive agricultural research.

As a society we must restore the status of agricultural science, and encourage research with practical impact.

As politicians, we must ensure that regulation of agricultural science and technology is truly proportionate and evidence-based.

These have been central themes for the All-Party Group, and I am grateful to the many high calibre speakers who have attended meetings at Westminster, to the organisations who have hosted visits of the Group, to our stakeholder organisations in the food, farming and research sectors, and to the many individuals and organisations who have contacted us over the past year with information and views.

Above all, our first year has highlighted the strategic significance of agricultural science and technology, and the urgent need for an integrated R&D strategy from fundamental research through to practical application. This will be a core focus of the Group’s activities over the coming year.

David Kidney MP
Chair, All-Party Parliamentary Group on Science & Technology in Agriculture
Getting started

The All-Party Parliamentary Group on Science & Technology in Agriculture aims to promote debate among UK politicians and other stakeholders, not only to understand the role of science in 21st century agriculture, but also to identify any policy, knowledge-based or regulatory barriers to its development and application. Meetings and membership of the All-Party Parliamentary Group on Science & Technology in Agriculture are open to all Parliamentarians from all political parties.

Inaugural Meeting

The Inaugural Meeting of the All-Party Parliamentary Group on Science and Technology in Agriculture took place on 11 March 2008.

There was strong support for the proposal to establish a new forum with a focus on science in agriculture, with many members of both Houses keen to debate such issues in the context of major challenges such as food security and climate change.

David Kidney MP was elected to serve as Chairman of the Group, with the Earl of Selborne and Dr Evan Harris MP elected as Vice-Chairs.

Guest speaker at the Inaugural Meeting was Professor Chris Leaver, Emeritus Professor of Plant Sciences at Oxford University, who set the scene for the work of the All-Party Group, highlighting the major challenges facing global agriculture and food supply, including:

- Population growth from 6.6bn today to 9bn by 2050;
- Limited and declining land and water availability;
- Impact of climate change on crop productivity.

Professor Leaver (pictured left) highlighted the achievements of agricultural science and technology in meeting the food demands of a doubling in world population since 1950, mainly through advances in mechanisation, nitrogen fertilisers, pesticides and plant breeding.

Science could deliver further significant advances in agricultural productivity, but Professor Leaver warned that the UK’s research capabilities had been steadily eroded and under-resourced for some considerable time.

Long-term, strategic investment in science and technology, supported by enabling, evidence-based regulation, was the only realistic option to double agricultural productivity on the same area of land and at the same time address concerns associated with environmental protection, declining water availability and the impact of climate change.
Web-site

The All-Party Group launched its own web-site in June 2008 at www.appg-agscience.org.uk

The web-site provides an important background resource to the work of the Group, including details of membership, meetings and activities, as well as news updates, key reports and links to other organisations of relevance to science and technology in agriculture.
Meetings at Westminster

Over the course of the year, the All-Party Group has hosted a series of meetings at Westminster, providing a platform for high-level input and debate on a range of issues, and raising a number of important questions which will shape the Group’s future activities.

Professor Bob Watson, Defra Chief Scientist

Speaking at the Group’s meeting in November 2008, Defra Chief Scientist Professor Bob Watson acknowledged the success of agricultural technology in raising global food production over the past 40 years, but noted that this progress had come at a cost to the environment. Furthermore, with 800–850 million undernourished people in the world, serious regional problems of infrastructure and distribution remained.

The challenge was to double food production over the next 25–50 years, primarily to meet increased demand in developing countries. Northern Europe alone could not meet global food requirements, and there was an overriding need to stimulate agricultural production in all parts of the world. Doing so would involve a range of approaches – traditional and hi-tech – and would also need to take account of a combination of social, economic and environmental factors.

In the UK, Defra science would continue to focus on the delivery of public goods, such as sustainable land and water use, but Professor Watson confirmed that a process was under way across Government to re-examine the status of agricultural R&D in the UK, and to compare it with other countries such as France, USA and Germany. This would help establish whether the UK was disadvantaged, whether there was a need for renewed public sector involvement in areas such as translational and applied research, and also to assess the potential role of public/private partnerships in meeting future R&D requirements.

Q Is our science policy and R&D framework fit for purpose to meet the challenges of food security and climate change?

Q Does UK agriculture and research have a role to play in addressing global food security concerns?
Impact of EU Pesticide Proposals

It was clear from the strong turn-out of more than 50 Parliamentarians and stakeholders at our October meeting that the potential consequences of EU plans for new pesticide approval rules have caused genuine and serious concern to many sectors of our food and farming industries.

According to our guest speakers, Cranfield University economist Sean Rickard (pictured left), and Crop Protection Association chief executive Dominic Dyer, switching from current risk-based assessments to the use of hazard-based ‘cut-off’ criteria would remove many currently approved pesticide products from sale.

This would result in reduced crop yields, increased farm-gate prices and, ultimately, higher retail food prices for consumers. Such an outcome was directly at odds with political imperatives to improve food security and tackle food price inflation.

Higher staple food prices would have a disproportionate impact on lower income households, and a predicted doubling in the prices of fresh fruit and vegetables would also damage healthy eating initiatives.

While the resulting discussion at the meeting highlighted diverging views over the impact and desirability of the proposed new rules, there was an overriding sense of concern that transparent use of science-based assessment had not been central to their development.

The need for a proper impact assessment – on EU crop production, food prices, environmental protection and public health – was an issue pursued subsequently by the Chairman and Members of the Group in follow-up correspondence and Parliamentary questions.

Q Does our policy and regulatory framework foster or stifle innovation – is the balance right between productivity and environmental protection?
Is there a case for more public sector support for translational and applied research in agri-food sectors?

Agricultural science – bridging the gap between basic & applied science

At the Group’s meeting in January 2009, two eminent speakers from the research community – Professor David Leaver, former Principal of the Royal Agricultural College and Professor Jonathan Jones, Head of the Sainsbury Laboratory in Norwich – addressed concerns over the increasing gap between basic research and applied R&D, and what the UK science base needs to ensure effective delivery of new knowledge into practical, on-farm application.

Both speakers noted that the role of agricultural research in responding to the combined challenges of food security, climate change and resource conservation was now increasingly recognised in political and scientific circles. However, a major problem was that productive agricultural research in the UK had been in decline for over 20 years, with the closure of many research institutes, agricultural colleges, university agriculture departments, extension services and demonstration farms. Indeed the UK was seen to have taken a much more systematic approach than other countries in withdrawing funding for R&D aimed at increasing agricultural productivity. The performance of UK farms had suffered as a result relative to other developed countries.

Reversing that process would require an adequate level of public sector funding for applied agricultural research, the reinstatement of a functioning R&D chain and, after 25 years of moving in one direction, a cultural change within the UK’s agricultural research community. It would also require a joined up approach from UK Government departments, research councils and levy bodies, working in collaboration with private sector organisations.
Is the transmission of research from laboratory to field working effectively, and focused on the right priorities?
Out and about

Members of the All-Party Group have participated in a range of visits, meetings and presentations to hear from researchers and others about the important contribution science and technology can make towards the future development of UK agriculture.

Visit to NIAB, Cambridge

The National Institute of Agricultural Botany (NIAB) in Cambridge hosted a visit of the All-Party Group in June 2008, including a tour of the NIAB trial grounds and new pre-breeding laboratory. Members heard how improved understanding of plant genetics is opening up exciting new opportunities for crop improvement, in areas such as yield, biomass utility, improved agronomy and stress tolerance.

Exploiting this genetic potential in agricultural crops, however, will require a stronger focus on translational research. NIAB has invested in the staff, infrastructure and resources to support its translational capabilities, and has forged strategic alliances with universities, research institutes, breeders and end-users. Already NIAB pre-breeding work has delivered valuable outputs in the form of pioneering research to increase cereal yields by varying flowering time, and to develop virus resistance markers for use in commercial breeding programmes.

However, securing a long-term source of funding for translational and pre-breeding activities, more consistent with the 10-15 year timescales involved in strategic crop improvement programmes, remains a major priority for the Institute.
The National Association of British and Irish Millers (nabim) hosted a drinks reception for members of the All-Party Group in December 2008. This included a presentation by Dr Sam Millar of Campden-BRI (pictured right) on the progress made to improve the quality of UK-grown wheat for bread-making.

Over the past 40 years, the UK’s historical dependence on imported North American wheat for bread-making has been reversed, thanks to improvements in baking technology and the development by plant breeders of high protein, hard milling varieties of wheat suitable for UK growing conditions. Until the mid-1960s, imported wheat typically accounted for up to 65% of UK requirements. Today as much as 85% of the wheat used in UK food production is sourced from home-grown varieties.

That progress is continuing, and Dr Millar highlighted the contribution of two LINK collaborative projects whose objective is to identify the genetic factors influencing bread-making quality in wheat varieties – and so develop the necessary markers and information to help plant breeders improve the precision and success of future breeding programmes.
Pressing for change

Officers and Members of the All-Party Group have been active throughout the year in raising the profile of science and technology in agriculture within Parliament and outside.

NFU ‘Why Science Matters for Farming’ campaign

As chair of the All-Party Group, David Kidney chaired the launch of the NFU’s ‘Why Science Matters for Farming’ campaign in the House of Commons on 14 October 2008. A packed attendance clearly underlined the increasing significance attached to the issue of agricultural research and innovation. Guest speakers were Professor John Beddington, Government Chief Scientist and Professor Dianna Bowles, Director of the Centre for Novel Agricultural Products.

The NFU campaign aims to celebrate the historical achievements and contribution of science and technology to modern agriculture, but also – faced with the challenge of producing more food using less land, water and other inputs – to raise awareness of the urgent need to reverse the declines in funding for agricultural R&D of recent decades.
EU Pesticides Legislation

Several members of the All-Party Group took action following our October meeting – through Parliamentary Questions, Early Day Motions and Ministerial correspondence – to highlight the risks to agricultural production and food prices of proposed new EU rules on pesticide approvals.

David Kidney wrote on behalf of the All-Party Group to the Prime Minister, whose response confirmed that the UK Government shared the Group’s concerns over the lack of a proper impact assessment, and that the UK was opposing the proposals on those grounds.

Six months on, the proposals have now been voted through the Council and European Parliament. Detailed information on the precise implementation and interpretation of the new rules is awaited, although initial indications are that the final outcome is likely to be less damaging to crop yields and production than earlier versions of the proposals.

Agricultural research – House of Lords debate

On 20 January, All-Party Group vice-chair Lord Selborne (pictured below) secured a short dinner hour debate on research funding for agriculture and food in the House of Lords, to which many members of the All-Party Group contributed.

A recurring theme was the importance of agricultural research and innovation in meeting the combined challenges of food security and affordability, global population growth and the impact of climate change. Many speakers referred to the need to reverse the declines seen over the past 25 years in public sector investment in applied agricultural and horticultural research.
In the News

The activities of the All-Party Group have attracted prominent media coverage, both through opinion articles and news reports.

FEEDING THE WORLD NEEDS THE APPLIANCE OF SCIENCE

David Kidney MP explains how an all-party pressure group is promoting modern farming methods plus research and development to address global food production challenges.

Renewed interest in modern, progressive agriculture reflects an urgent need to address the global challenges of food security, climate change and resource conservation. We are facing an acknowledged crisis in global food production. Demand is beginning to outstrip supply, and the only realistic prospect of producing enough food for a global population set to reach nine billion by 2050 is through productivity growth – more output per hectare.

We have become complacent about the availability and affordability of food, and allowed a creeping demonisation of modern agriculture and food production, particularly in view of recent events which have exposed the vulnerability of our supply chains. It is clear that we need to invest in agriculture if we are to meet our food security needs.

Agricultural innovation, particularly in the areas of sustainable production and climate change resilience, is essential to ensure that we can feed future generations. The All-Party Group on Science and Technology is committed to supporting these efforts through its policy agenda and engagement with stakeholders across the sector.
Our stakeholders

The activities of the All-Party Parliamentary Group on Science & Technology in Agriculture are supported by a number of food, farming and research organisations:

The Agricultural Industries Confederation is the leading trade association in the UK agri-supply industry.
www.agindustries.org.uk

The Agricultural Biotechnology Council is the umbrella group for the agricultural biotechnology industry in the UK.
www.abcinformation.org

The Crop Protection Association is the UK body representing manufacturers of crop protection products.
www.cropprotection.org.uk

The Maltsters’ Association of Great Britain is the representative body for the UK malting industry.
www.ukmalt.com

The National Association of British & Irish Millers is the representative organisation for the UK flour milling industry.
www.nabim.org.uk

The National Farmers’ Union represents farmers and growers in England and Wales.
www.nfuonline.com

The National Institute of Agricultural Botany is a leading UK centre of applied plant science and crop evaluation.
www.niab.com

The British Society of Plant Breeders is the representative body for the UK plant breeding industry.
www.bspb.co.uk

The Agriculture & Horticulture Research Forum supports collaboration between industry levy bodies in the development of strategic and applied R&D programmes and associated knowledge transfer, and to influence Government prioritisation and investment in agri-food research.
www.appliedresearchforum.org.uk

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All-Party Parliamentary Group on Science and Technology in Agriculture

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