

PLANTING PREJUDICE

HOW UK GOVERNMENT SUPPORT
FOR GM CROPS UNDERMINES
SUSTAINABLE FARMING POLICIES



**Friends of
the Earth**



EXECUTIVE SUMMARY

INTRODUCTION

In June 2007 Prime Minister, Gordon Brown, announced the formation of the Department for Innovation, Universities and Skills (DIUS). Among its roles is to exploit scientific research to support innovation across the economy.¹

The announcement coincides with a Science Review by Lord Sainsbury to ensure the UK's success in wealth creation from scientific policy.

This is the summary of a report² commissioned by Friends of the Earth, examining the role of the UK Government's science and innovation policies in promoting the competitiveness of agriculture, with particular focus on organic farming³ and agricultural biotechnology, ie genetically modified (GM) crops and food. It exposes contradictions between Government policy to promote agriculture that contributes to economic growth, social cohesion and environmental sustainability and its funding and policy support for GM, which has failed to deliver on every count. The report concludes with a set of recommendations to inform future policy decisions.

“Our key message, then, is reconnection. Reconnection of farmers and the public through the marketplace, in sensitive stewardship of the countryside”

Report of Policy Commission on the Future of Farming and Food, January 2002

In the wake of the steady devaluation of agriculture and the BSE and foot and mouth crises, the 2001 Policy Commission on the Future of Farming and Food signalled a fundamental revaluation of the sector. Its central recommendation was that – to create a sustainable future for farming and food, farmers needed to reconnect with their markets and with the environment. The Government's current Sustainable Farming and Food Strategy evolved from this and crystallised in the One Planet Farming vision:

- A profitable, innovative and competitive industry meeting **needs of consumers.**
- Making a **net positive contribution to the environment and managing its risks.**
- Contributing to the **long-term sustainability of rural communities.**

Evidence to date shows that GM has failed to deliver on this vision. Industry promises of higher yields and enhanced nutrition from GM have not materialised. Across the globe, virtually all GM crops contain only two traits – herbicide tolerance and insect resistance. Even in the United States, only these two traits have been commercialised with any success although 71 different GM varieties have been approved. Industry and government data show that in the UK and worldwide, jobs in the GM sector are being lost, negative environmental impacts have been recorded, and economic performance is poor.

RESEARCH FUNDING BIAS

Public spending by the Government on agricultural biotechnology⁴ research was at least £49 million between 2006 and 2007 and £50 million between 2005 and 2006.

This does not include possible spending via individual grants from the Biotechnology and Biological Sciences Research Council (BBSRC), for which data is not available after 2004. Available data on total Government spending including individual grants shows an average of £73.8 million funding every year between 2001 and 2002 and 2003 and 2004.

In comparison organic farming receives tiny amounts of government funding. DEFRA spending on research and development related to organic farming was £1.6 million between 2006 and 2007. Available evidence indicates public spending on straight organic farming research⁵ has been about £2.2 million per year from 1997 to 2006 despite its exponential growth, high levels of consumer support and proven environmental benefits.

Science and innovation policies in agriculture have been driven by the assumption that commercialisation of research leads to increased competitiveness and wealth. This has led to progressive privatisation of the research base and a focus on funding with industry collaboration such as the Government's LINK scheme.⁶ This has created an inherent bias in favour of GM agriculture, as the scheme is well suited to the needs of the biotech industry. In contrast, organic farming research and development has been placed at a disadvantage as the organic sector lacks the capacity to excite the funds necessary to benefit from similar schemes.

POLICY SUPPORT FOR GM

The Government's political support for GM, driven by DEFRA with minimal input from the devolved administrations, is evident. At European level the UK has voted in favour of lifting all bans on GMOs maintained by other member states, the only country to do so. It has consistently voted in favour of new GM food and feeds, despite the safety concerns raised by other member states. This pro-GM position is at odds with public attitudes and the commercial realities for the technology in the UK.

This bias towards GM seriously compromises sustainable farming methods. Not only do agricultural biotechnology and sustainable farming compete for research funds, but the risk of contamination posed by the release of GM crops and foods threatens the success of non-GM and organic farming.

GM crops have failed to deliver for consumers, the environment or the economy, and it is unacceptable for the Government to continue to provide it with considerable funding and political support. It is equally unacceptable that better support has not been targeted at sustainable farming methods, like organic, which have reinvigorated rural communities, created jobs and reversed declining environmental conditions.

¹ see <http://www.dius.gov.uk/role.htm>

² Full report is available at http://www.foe.co.uk/resource/briefings/jobs_report.pdf

³ Organic farming is used as a case study for sustainable farming practices as consistent data is available for this sector.

⁴ This is broader than GM, but includes GM research.

⁵ Government funding for other areas of basic research may also be beneficial for organic farming but funding aimed at organic farming research is still currently small.

⁶ LINK initiative aims to promote academic and industrial research collaboration. Government provides up to 50 per cent of funding for industrial partners.

GM AND ORGANIC AT A GLANCE

ECONOMIC PERFORMANCE

GM	ORGANIC
The Industry's most recent assessments show sales decreased by 5 per cent in the UK in 2003.	Sales of organic food in the UK increased by 22 per cent in 2006.
Rate of new company formation fell across Europe from 12.3 per cent in 2001 to 5-6 per cent in 2004. In 2003 the UK lost 75 biotech companies through mergers and acquisitions.	The retail market for organic products has grown by an average of 27 per cent a year over the last decade while annual growth for all UK food and drink sales is around 3 per cent.
A 2003 analysis for the Government found GM crops on the market would offer only small benefits to UK farmers. Demand for GM-free food would place costs on conventional farmers from keeping produce GM free. Any benefits from GM would be outweighed by low prices and lack of demand.	Direct retail sales of organic products through organic box, mail order schemes etc increased by 53 per cent from 2005 to 2006 contributing to a vibrant local food economy.
An analysis by the European Commission found seed companies took large shares of any profits from farmers growing GM Maize in Spain. Seed prices for GM are on average £0 (£20) higher per hectare than conventional.	In 2006, the area of land in-conversion to organic in the UK increased by 40 per cent, with all countries seeing substantial growth – Scotland (110 per cent), England (24 per cent), Wales (20 per cent) and Northern Ireland (25 per cent).
	Organic farmers are three times more likely to market their products locally or directly than non-organic farmers in the UK.

EMPLOYMENT

GM	ORGANIC
Industry estimates indicate that between 2001 and 2003 the agricultural biotechnology sector experienced the "largest proportional decline in employment" of all biotech sectors in the EU and UK.	39 per cent of organic farms practice cutting edge business innovation such as on-farm processing and direct marketing enterprises. This increases employment by 64 per cent.
The University of Maastricht found that GM farming practices generally decrease the overall labour required on the farm and in processing firms.	Organic agriculture is helping to address wider employment needs in the UK. In 2006 the University of Essex found that organic farms provide on average 32 per cent more jobs per farm than non-organic.

ENVIRONMENTAL BENEFITS

GM	ORGANIC
Government sponsored Farm Scale Evaluations in the UK found that growing two out of three GM herbicide tolerant crops led to a reduction of food and habitats for farmland wildlife compared to conventional crops.	DEFRA studies show organic farming has proven environmental benefits including soil health, biodiversity and benefits from the absence of synthetic pesticides and fertilisers.
In the US there is evidence that pesticide use has increased as a result of growing GM herbicide tolerant crops. This is to deal with the emergence of resistant weeds.	A comprehensive review by DEFRA on studies assessing the environmental implications of organic farming concluded that, on average, there is positive benefit to wildlife conservation on organic farms.

RESEARCH FUNDING

GM	ORGANIC
Public expenditure by the UK Government on agricultural biotechnology was £49 million between 2006 and 2007 and £50 million between 2005 and 2006. This does not include possible spending via individual grants from BBSRC, for which data is not available after 2004.	Between 2006 and 2007 DEFRA spending on research and development related to organic farming was £1.6 million.
Government spending on just Core Strategic agricultural biotechnology research has steadily increased from £15.5 million between 1997 and 1998 to £37.7 million between 2005 and 2006. There has also been additional funding through individual grants of about £39 million every year from 2000 to 2004.	Available evidence shows that public spending on research and development activity for organic farming was an average of £2.2 million per year from 1997 to 2006.
The Scottish Executive spent around £7.5 million a year from 2001-2006 on agricultural biotechnology research.	In organic farming there are no input industries other than the farmers themselves. Improvements must come from research into farming systems. This type of research is unsuitable for LINK schemes.
Funding initiatives harnessing public sector research for private sector benefit the GM industry. The Government's LINK scheme provides up to 50 per cent of the total funding of industry-led research programmes.	

GOVERNMENT AND INSTITUTIONAL SUPPORT FOR GM

- | The Government's Advisory Committee on Releases to the Environment has called for a regulatory system that concentrates more on the claimed benefits of GM than on its risks. The chair of the Advisory Committee dealing with GM food safety, has close links with the Biotech Industry.
- | DEFRA's pro-industry proposals for the coexistence of GM, conventional and organic crops in England were produced after detailed consultations with individual GM companies and industry bodies. Individual organic businesses were ignored.
- | DEFRA bent over backwards to accommodate BASF's GM potato trials in England. Correspondence in 2006 reveals DEFRA asking whether the proposed conditions on the consent were "agreeable to BASF".

CONTAMINATION

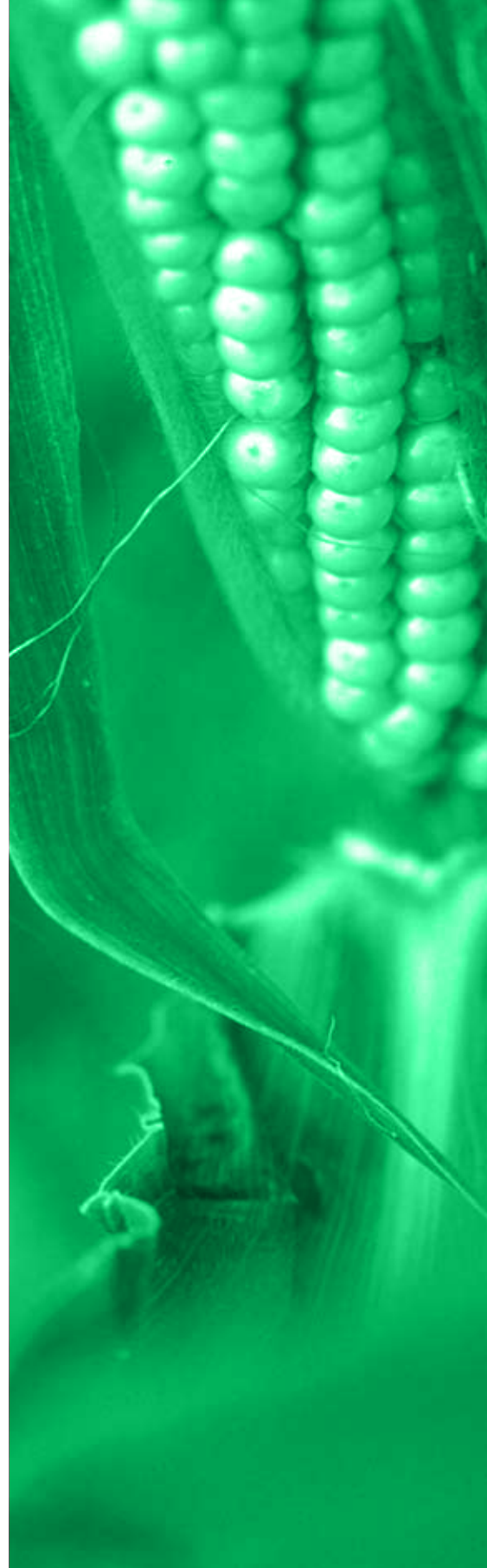
- | Conventional and organic farmers face loss of markets from GM contamination. In 2006 alone there were 24 documented contamination cases and since 1997, 149 GM contamination cases have been recorded worldwide.
- | Contamination by illegal GM Starlink maize in 2000 caused export losses to US farmers of an estimated \$200 million a year.
- | Contamination of worldwide rice supplies from Bayer's unapproved GM rice in 2006 had a devastating impact on the rice industry. Rice futures prices plummeted by \$150 million. Rice millers, traders and retailers faced testing and recall costs, cancelled orders, import bans, brand damage and consumer distrust.

RECOMMENDATIONS

Friends of the Earth urges the Government to recognise that agricultural biotechnology has failed to deliver the industry's promised benefits and is unlikely to help the UK compete in a global economy given the trends observed so far. Organic farming is an example of a farming system already delivering social, economic and environmental benefits and is supported by the public. The Government should take the opportunity of the creation of the DIUS to re-evaluate UK science policy and realign funding priorities to support a thriving and sustainable farming industry.

Specifically, Friends of the Earth calls upon the Government to:

- | Halt its political and financial support for GM food and farming.
- | Shift current funds destined to agricultural biotechnology to encourage innovation in sustainable and popular agriculture such as organic farming.
- | Set up a Sustainable Agricultural Research Council replacing the BBSRC to provide an appropriate and well-funded institutional setting for the innovation of sustainable farming practices.
- | Address the excessive industry influence on the Government's policy for science and innovation, particularly with reference to GM crops and foods, to close the gap between Government policy commitments to a sustainable, competitive agricultural system and its research agenda.



Making life better for people by inspiring solutions to environmental problems

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