

GeneWatch UK response to the EFRA Committee consultation on Food Security

December 2013

GeneWatch UK is a not-for-profit organisation, established in 1998, which aims to ensure that genetic science and technologies are used in the public interest. The main focus of our response is the potential value and contribution of science and GM technology to UK food security and the need to consider alternative approaches.

Summary

1. Decisions on how best to improve UK (and EU) food security, including using resources more efficiently, are best made by involving a broad range of people in the food and farming system, including consumers. The Government's Agri-Tech Strategy favours a top-down approach in which a small number of people, representing large agri-business and retailers, have too much influence over how taxpayers' money is invested. The emphasis is on attracting overseas investment (probably by making exaggerated promises of technological solutions), rather than on making the right decisions. The proposed attempt to "de-risk" venture capital investment, increases risks for taxpayers and lacks accountability or a process for due diligence. The likelihood of market failure is increased by a top down approach which fails to take account of people's wants and needs, especially in developing countries and overseas markets. The negative impacts of GM crops and foods have been sidelined from debate and consumer choice is being restricted by the failure to label GM-free-fed meat and dairy products.
2. The Government should improve the accountability of Agri-tech investment decisions to consumers and taxpayers by:
 - disbanding the Agri-Tech Leadership Council and replacing it with a more representative body, including representation for consumers and small farmers;
 - changing the remit of the Leadership Council to be based on a more consultative approach;
 - including indicators related to delivering healthy diets and sustainability;
 - improving the accountability to taxpayers of decision-making for R&D investments;
 - conducting due diligence on its investments, especially before promoting innovations overseas.
3. The Government should implement its localism agenda in relation to local food systems, and reduce food waste, by:
 - significantly expanding the proportion of the RDP budget allocated to bottom-up schemes such as Leader, which require local funding allocations;
 - building recognition of local food systems into multiple policy areas – including health, environment, rural development and agriculture;
 - developing a more bottom-up and localised approach to funding farming innovations, including within local food systems;
 - Taking further steps to minimise food waste in the UK and to support food waste minimisation in other countries.
4. The Government should support consumer choice, prevent the harm posed to British farming and food markets (including exports) by proposals to grow GM crops, and reduce dependency on GM feed imports, by:
 - Supporting an EU-wide GM-free-fed voluntary labelling scheme for meat and dairy products;

- Supporting proposals to revise Regulation (EC) 1829/2003 to require mandatory labelling of GM-fed meat and dairy products;
 - Abandoning attempts to weaken regulation for GM foods and crops via the 'Red Tape Challenge' and the TTIP negotiations;
 - Supporting pasture-fed meat and alternative feed options.
5. The Government should sustain and promote export markets, and support agriculture in other countries by:
 - Keeping the UK GM-free to maintain access to GM-free export markets;
 - Adopting a more bottom-up approach to DFID funding priorities in the area of food and agriculture, consistent with the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD).

The need to reform decision-making on science and technology investments

6. The Government's Agri-Tech Strategy is expected to set the agenda for both public and private investments in this area in future, including via public-private partnerships.¹ The Government will invest £70 million through the Technology Strategy Board (TSB) and the Biotechnology and Biological Sciences Research Council (BBSRC) and DFID to establish an Agri-Tech Catalyst and £90 million over five years to establish a small number of Centres for Agricultural Innovation. A Leadership Council has been set up to oversee the Strategy.
7. A positive aspect of this approach is that it finally abandons the pretence that biotechnology alone will deliver a health and sustainable food and farming system, embodied in the closure of the Agriculture and Food Research Council (AFRC) in 1994 and its replacement with the BBSRC. There is some belated recognition of the research skills that have been lost (e.g. soil science, agronomy) and of the BBSRC's failure to deliver on its promises. However, there are also some major downsides to the Strategy.
8. The narrow focus of the Strategy on patents, spin-outs and start-ups, i.e. developing new products based on patented technologies, ignores the important roles of farming practices (agronomy, agroecology) and dietary change (e.g. reduced consumption of grain-fed meat and processed foods, increased local production and consumption of fruit and vegetables) in achieving healthy diets and sustainability. Consistent with this, improved nutrition in the usual sense of improved diets is ignored in favour of "biofortification" i.e. the food industry's favoured approach of altering nutrient-levels in individual foods to create added-value products ("functional foods"). No lessons appear to have been learned from the consistent failure to date of spin-out companies to deliver economic growth, or from the failure of most functional foods to demonstrate health benefits.²
9. Because GM plants can be patented, this means GM crops and foods are seen as an integral part of the Agri-Tech Strategy. However, a strategy which focuses on GM crops will waste taxpayers' money and is unlikely to deliver either new products or economic benefits, as most GM crops fail in trials and never get to market. There have been 26,568 field trials of GM crops in the USA, of which 11,025 have been for herbicide-tolerance or insect-resistance traits (the main traits currently on the commercial market).³ The leading crop on the market remains Monsanto's RoundUp Ready GM soya which is tolerant to its own-brand herbicide RoundUp (glyphosate). To date in the USA, 212 different genetic events have been approved for commercial use in GM crops⁴ but many of these have been commercially unsuccessful (e.g. tomato, potato, plum, rice, wheat, tobacco). According to industry figures, in 2012

there were 100.5 million hectares of GM herbicide tolerant crops, 43.7 million hectares of GM insect resistant crops (expressing Bt toxins) and 26.1 million hectares of stacked traits (combining multiple Bt toxins and/or tolerance to one or more herbicides) worldwide, amounting to nearly 100% of the total 170.3 million hectares.⁵ The USA, Brazil, Argentina and Canada accounted for 83% of land planted with GM crops (largely soybean, maize, cotton, oil seed rape and sugarbeet), with a further 9% accounted for by GM cotton grown in India and China. The pipeline for crops awaiting approval in the EU for import or cultivation consists overwhelmingly of herbicide-tolerance, insect-resistance or stacked traits, produced by the major multinational seed companies.⁶ This is due to the inability of GM technology to deliver complex traits (e.g. drought and salt tolerance) in a cost-effective and timely way, and to lack of convincing market benefits.

10. The advent of patents on GM plants has contributed to the takeovers and mergers which have led to consolidation of the seed industry.⁷ This has led to a shift in both public and private research toward the most profitable proprietary crops and varieties and away from the improvement of varieties that farmers can easily replant; and a reduction in seed diversity, as remaining firms eliminate less profitable lines from newly acquired subsidiaries.⁸ In addition, research into agricultural systems for crop or animal production has received minimal funding, as the knowledge cannot be privatised through patenting.⁹
11. US farmers adopted herbicide-tolerant GM crops because of the simplified herbicide regime associated with these crops (i.e. blanket spraying with a single herbicide which kills the weeds but not the crop), however the spread of herbicide-resistant weeds in North and South America is now impacting significantly on weed management difficulties and costs and resulting in increased use of glyphosate (sold by Monsanto under the brandname RoundUp for use with its RoundUp Ready GM crops) and other herbicides.¹⁰ Pests resistant to genetically modified pest-resistant crops (Bt crops), and increases in secondary pests unaffected by the Bt toxins in these plants, are also beginning to impact on pest management.
12. Currently, British taxpayer-funded research institutions (and ministers) are acting as the PR wing of the large multinational companies which market GM seeds.¹¹ They are paid not to produce anything useful but to go on the media and claim that they will produce something useful using GM at some point in the future: and that therefore GM regulations must be weakened and retailers must put GM foods back on their shelves. This PR strategy is not intended to deliver anything for Britain but simply to open up the European market to the major GM companies (particularly in the context of the negotiations for the Transatlantic Trade and Investment Partnership, TTIP). There is no evidence that European farming has suffered reduced yields as a result of the very limited adoption of GM crops (some Bt maize is grown for use in animal feed in the EU, mainly in Spain). In fact the evidence suggests that European GM-free farming outperforms GM farming in United States.¹² If GM crops are grown commercially in Britain, British farmers will simply suffer the same problems as US farmers do: they will be locked into a cycle of paying ever more for seeds and associated chemicals as resistance develops to the herbicide-resistant and pest-resistant GM traits which are already on the market overseas.
13. It is a myth that investment in science and technology inevitably implies investment in GM. Current and previous Scottish ministers have recognised the importance of agriculture to the Scottish economy and given it a higher profile than – until recently – has been the case south of the Border. The integration of research, education and consultancy, known as “the Scottish model”, is admired around the world.¹³ In line with Scottish Government policy on GM crop cultivation, the Scottish Government

does not fund research aimed directly at the production of GM varieties of crops.¹⁴ Instead, it supports the development of modern genomics-based plant breeding tools which enable new conventional crop varieties to be developed more quickly and efficiently. For this research, molecular techniques are being used to identify the genetic basis for specific plant traits, such as nutritional quality, disease resistance and environmental resilience. Crop science is an important income earner for Scotland. An independent study concluded that crop scientists and breeders at SCRI (the Scottish Crop Research Institute, now part of the James Hutton Institute) and its commercial arm MRS alone generate around £160 million of business for the Scottish and UK economies every year. This represents a 14:1 return on public investment.

14. The Agri-Tech Strategy's top-down approach leaves decisions in the hands of a small group of people on the Agri-Tech Strategy Leadership Council, with close links to multi-national agribusinesses and major retailers, who "*will act as leads for their communities*". There is no representation for consumers, small farmers, or small and medium-sized enterprises on the food and farming sectors, despite claims elsewhere in the report that consumer choice plays a vital role in driving innovation. Despite the Government's supposed commitment to localism there is no connection with Local Food Systems in either rural or urban/peri-urban areas. This means that land-use and planning issues; potential synergies between rural development and other policies areas such as public health and education; and local priorities and needs will be neglected in favour of a top-down approach. This tends to suggest that "sustainable intensification" really means "intensification", over which members of the public will be given little say.
15. As background to the Strategy, the Feeding the Future report is in some ways a step forward from the long obsession of research funders with GM crops, as it outlines many other areas such as soil science, where research skills have been lost.¹⁵ However, it is unfortunate that the workshops on R&D priorities did not include the wider public, who are important as consumers and also as taxpayers who fund most of the research. Too narrow a range of interests means important issues have been missed, such as how to sustain healthier diets and get more fruit and veg to low income families, and some pet fantasy projects have been endorsed, such as the creation of nitrogen-fixing GM wheat (which was first promised more than 30 years ago and is expected by enthusiasts to take several more decades to deliver, and by detractors to be impossible to achieve¹⁶). This same narrow view of consultation means that the report wrongly dismisses the important global International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD), which was much more inclusive¹⁷.
16. The Agri-Tech Catalyst is supposed to "de-risk" investment in early stage translation of technology into common practice, supporting academic-business partnerships and attracting private investment. However, in effect this means shifting risk from private (often venture capital) investors to taxpayers. This requires a level of accountability and due diligence in spending taxpayers' money that is often missing from public-private partnerships, especially in the high-risk areas of science and technology. It is unclear how the proposed decision-making system will take due account of likely future markets and their limitations; assess claims of future benefits (e.g. health claims) and risks in a realistic way; and avoid conflicts-of-interests and subsidising the pet projects of a small number of advisors and decision-makers or rich individuals (such as Bill Gates).
17. In relation to exports and overseas investment, the Agri-Tech Strategy (recommendations 10 to 13) establishes a dedicated team at UK Trade and

Investment (UKTI) to increase the volume and value of overseas investment into the UK agri-tech sector; appoints James Townshend of Velcort Group PLC (a member of the Leadership Council) as UKTI Business Ambassador to champion UK agri-tech and identify early stage markets for future growth; and commits funding and strategic support from UKTI to overseas agriculture in Africa, the Gulf States and (in the longer-term) UKTI's High Value Opportunity Programme for Food Security (especially in Asia). Again, there is a worrying lack of bottom-up engagement to determine the wishes and needs of people on the ground (e.g. small-scale farmers) or impacts on export markets (e.g. Britain's reputation for exporting high-value, quality food products). Further, there continues to be a serious gap in due diligence as UKTI's policy appears to be to facilitate the marketing of untested start-up products by circulating PR materials without undertaking any analysis of what can really be delivered. This risks a loss of trust in emerging markets, due to the high failure rates of most new technologies and the well-known problem, especially in biotech, of "over promising"¹⁸ and creating bubbles rather than products.

18. Another obvious problem is that the Leadership Council is supposed to agree a set of measures to assess the success of its own strategy. The list of proposed indicators (page 45) is not encouraging. There is no mention of achieving healthy diets or environmental sustainability, for example, despite claims that the Strategy will deliver healthy, sustainable products for consumers.
19. In GeneWatch's view, steps must be taken to try to waste less money, reduce opportunity costs and broaden skills and research areas.¹⁹ Priorities for British farming should include increasing home grown horticulture and access to fruit and vegetables for low income families; reducing food waste; and reducing reliance on imported animal feed. The Government should improve the accountability of Agri-tech investment decisions to consumers and taxpayers by:
 - disbanding the Agri-Tech Leadership Council and replacing it with a more representative body, including representation for consumers and small farmers;
 - changing the remit of the Leadership Council to be based on a more consultative approach;
 - including indicators related to delivering healthy diets and sustainability;
 - improving the accountability to taxpayers of decision-making for R&D investments;
 - conducting due diligence on its investments, especially before promoting innovations overseas.

Need to support a localised approach and tackle food waste

20. The EC-funded research project Facilitating Alternative Agro-Food Networks (FAAN), in which GeneWatch UK participated, recommended that policy-makers should build recognition of local food systems into multiple policy areas – including health, environment, rural development and agriculture – noting that they can deliver solutions to many cross-departmental policy challenges, especially at a local level.²⁰ The project also emphasised the importance of more CAP Rural Development money being allocated using bottom-up programmes such as Leader, which were central to the development of the small business and local food systems we investigated in five countries.
21. Under the Common Agricultural Policy (CAP), Member States must now use the Leader local delivery approach for at least 5% of their EU rural development allocation (the current proportion is 4%) and DEFRA has said that it will make available up to £3m of RDP funding in 2014 to help maintain Leader local delivery

capacity and expertise from the current programme.²¹ For the period 2014–2020 the UK expects to receive £17.8bn for the part of the CAP that includes direct payments (known as Pillar 1) and £1.84bn for rural development (known as Pillar 2).

22. In GeneWatch UK's view, the failure to significantly expand Leader and adopt a more localised approach to delivering sustainable innovation within Local Food Systems is a major missed opportunity.
23. Also of major relevance to food security is the problem of food waste. According to the FAO, forty-six percent of food waste happens "downstream," at the processing, distribution and consumption stages.²² As a general trend, developing countries suffer more food losses during agricultural production, while food waste at the retail and consumer level tends to be higher in middle- and high-income regions - where it accounts for 31-39% of total wastage - than in low-income regions (4-16%). The later a food product is lost along the chain, the greater the environmental consequences. Produced but uneaten food occupies close to 30% of the world's agricultural land.
24. The Government should implement its localism agenda in relation to local food systems, and reduce food waste, by:
 - significantly expanding the proportion of the RDP budget allocated to bottom-up schemes such as Leader, which require local funding allocations;
 - building recognition of local food systems into multiple policy areas – including health, environment, rural development and agriculture;
 - developing a more bottom-up and localised approach to funding farming innovations, including within local food systems;
 - taking further steps to minimise food waste in the UK and to support food waste minimisation in other countries.

Implications of deregulation proposals

25. Proposals to weaken GM regulations have been made in the context of the Red Tape Challenge and are being discussed behind closed doors during the TTIP negotiations. GeneWatch UK disagrees with the presumption underlying the Red Tape Challenge, which is that regulations act mainly as a burden on companies making applications and do not fulfil a necessary role.²³ In fact, regulations are designed to prevent undue burdens on persons other than the applicant for example by:
 - Protecting human health;
 - Protecting the environment;
 - Protecting the markets and business interests of others.
26. Any attempts to weaken regulations on GMOs will increase burdens on others (such as conventional farmers, who will bear the costs of segregation and labelling of non-GM crops) or expose them to increased risks (for example, risks associated with liability for contamination of crops and food or discharges to the environment, recalls of products, or environmental clean-up).
27. In the UK, the decision not to grow GM crops commercially followed publication of the results of the Farm Scale Evaluations (FSEs), which found that growing herbicide tolerant oilseed rape and sugar beet would be likely to reduce weed food sources and habitats for birds and other wildlife²⁴. More recent evidence from the USA shows that the loss of agricultural milkweeds has contributed to a major decline in the Monarch butterfly population in the USA, coincident with the blanket spraying of

glyphosate (brandname RoundUp) on GM glyphosate-tolerant corn (maize) and soybeans (i.e. Monsanto's RoundUp Ready GM soybeans).²⁵ Monarch butterfly populations are now close to crisis point.²⁶

28. Controversy remains about potential unintended effects of GM foods on human health, and the difficulties in assessing such effects using short term animal feeding studies.^{27,28,29,30} Case-by-case risk assessment is generally required by regulators, but since animal studies cannot reach definitive conclusions, and new traits can always introduce new risks, segregation and labeling of GM crops are an important part of risk management (allowing recalls if anything goes wrong) and are regarded as essential in many countries to allow consumer choice. Farmers and consumers may also choose not to grow or eat GM crops for environmental reasons, or because of concerns about corporate control over food supplies.
29. Because GM crops generally command a lower market price, for non-GM farmers key issues are cross-contamination and liability.³¹ The costs of segregating GM crops fall on conventional and organic farmers, rather than on those choosing to grow or import GM crops, and thus limit choice for non-GM growers by damaging their markets.^{32,33,34} A variety of mechanisms, including seed mixing or cross-pollination^{35,36} can spread GM traits and in some cases have caused major (multi-million dollar) damage to markets for conventional or organic crops and foods³⁷. The UK has yet to adopt any provisions for the co-existence of GM crops and conventionally grown or organic crops, to protect non-GM markets, and there is no legislation in place to provide for liability for contamination incidents. Co-existence and segregation measures (e.g. cleaning shared equipment/processing facilities) increase costs for all farmers, so UK food would become more expensive if GM crops were grown.
30. Export markets for GM crops are also limited, with many countries requiring mandatory labelling of GM foods,³⁸ as well as a case-by-case approvals process, and many major markets (e.g. India, China, Russia) reluctant to accept them.
31. The FAAN project (cited above) highlighted that successful local food systems depend on establishing consumer trust and branding of local, sustainable and healthy food production and distribution. Thus, cultivation of GM crops in the UK would significantly increase the obstacles facing food producers, including small farmers, seeking to increase production and access new markets (including export markets). The Scottish Government has recognised this in its successful Food and Drink policy, which is underpinned by quality, environmental production and non GM reputation, and a similar approach has been adopted in Wales. England would do well to follow their lead rather than undermining its own farmers' access to lucrative GM-free markets at home and overseas.
32. It is unclear how or why the UK would promote weaker regulation for GM crops in the EU. Alternatively, if the UK (in practice England, and perhaps Northern Ireland, since Scotland³⁹ and Wales are opposed to GM crops) were to 'go it alone' and either negotiate devolved decision-making or withdraw from the EU, access to EU (and other) markets for the resulting GM crops and foods, and also for potentially contaminated conventional or organic products, would be damaged, with serious negative economic impacts for farmers and the UK as a whole.

Listening to the public: the need to secure GM-free animal feed supplies

33. The Agri-Tech Strategy claims it will deliver for the consumer:
 - More choice for healthy, nutritious food

- More affordable, sustainable products that have less adverse impact on the environment
 - Greater understanding of how food is produced and where it comes from.
 - Yet there was no consumer involvement in developing the Strategy, nor is any planned in its delivery.
34. Consumer preferences in food consumption translate into choices based on income or wealth that create demand. Traceability and labelling of products plays an important role in facilitating choice to which the market can respond. Regulation (EC) 1829/2003 lays out the mandatory labelling requirements for GM food and feed in the EU. However, there is a major gap in the mandatory labelling requirements in that meat and dairy products from animals fed on GM feed are currently not labelled.
35. Whilst GM food products are rarely stocked by retailers in the UK or EU (with the exception of a small quantity of cooking oil, labelled as GM), large quantities of GM crops are imported as animal feed. The EU feed industry imports about 70% of its animal feed requirements,⁴⁰ which raises issues of food security. The long-term solution to this problem is to reduce consumption of grain-fed meat and return to more pasture-fed meat (which is also healthier) and increase UK sustainable production of animal feed protein sources.^{41,42,43} However, there is also an immediate need to tackle monopoly control over animal feed imports, to diversify supplies, and to restore and maintain consumer choice by securing certified (identity-protected) non-GM soya imports.
36. UK animal feed includes maize, oil seed rape and large quantities of soya⁴⁴ which may all contain GM if sourced from North or South America. The GM crop with the largest market share is Monsanto's RoundUp Ready GM soya, which is tolerant to its own-brand herbicide RoundUp. Brazil, Argentina, Paraguay and the USA are major producers of GM soya beans and soya bean meal, but Brazil is also a major supplier of non-GM soya. India, China, Ukraine⁴⁵ and the Danube region⁴⁶ also produce non-GM soya and other countries could expand production in the future.
37. Until recently, many UK retailers had some non-organic meat and dairy product lines which did not use GM feed. However, in 2012, Morrisons changed its policy to allow GM feed (mainly Monsanto's RoundUp Ready GM soya) for poultry,⁴⁷ as Asda had done in 2010. In April 2013, Tesco, the Co-Op and Marks and Spencer announced they will no longer require poultry to be fed on GM-free feed.⁴⁸ Only Waitrose continues to require non-GM feed for poultry, eggs and lamb and Sainsbury is keeping its Taste the Difference product line fed on non-GM soya. Organic and pasture-fed meat and dairy products remain GM-free fed. Thus, choice has been severely restricted for those consumers who cannot afford organic and there is a danger that suppliers will no longer segregate GM and non-GM soya in shipments to Britain and easily available sources of non-GM meat and dairy products will be lost. The Brazilian Association of Non-GM Grain Producers (Abrange) said that it was "puzzled" by the supermarkets' decision and suggested it was based on incorrect information, since Brazil has enjoyed a record non-GM soybean harvest, more than enough to supply the EU's entire demand.^{49,50}
38. Thus, the supermarkets' policy changes appear to relate to a problem sourcing non-GM feed supplies in the UK, but not to a shortage of GM-free feed supplies on the global market. Since consumer demand for non-GM feed clearly exists, and farmers in Brazil and elsewhere are willing to supply it, the failure to supply what consumers demand is due to market failure. The Ecologist recently cited a supermarket source claiming: *"It's a nightmare trying to source non GM feed. The reality is that trying to*

source it on the scale needed [by large retailers] is very difficult. The feed companies own the boats, the mills, they control the supply chain."⁵¹ Cargill owns the soybean crush and refinery in Seaforth Liverpool and also owns and operates the imported feed ingredient terminal at Seaforth dock.⁵² Concerns about the continued availability of identity preserved non-GM soya have been voiced for more than a decade, for example by the NFU in a submission to the Cabinet Office in 2002/3 which notes that:

*"In 1999 Monsanto bought Cargill's non-US seed business and started a joint venture with Cargill to develop genetically modified (GM) seeds for animal feed. ADM has similar strategic alliances with Novartis/AstraZeneca and Dupont/Pioneer. Grain traders "push" the products of their strategic partners. As a result, GM soya not only co-exists with non-GM soya but is consistently increasing its share of the market (up to 75% and 95% in the case of US and Argentine production, respectively), raising doubts as to where the EU can source its 16 million tonnes of soya from GM-free sources".*⁵³

39. Nevertheless a demand-led (rather than supply-led) market seems to be working well for other EU countries, where access to GM-free feed does not appear to have been restricted. In the EU, Sweden^{54,55} and Austria do not use GM feed at all and other countries, such as France, Germany and Luxembourg, have voluntary labelling schemes which allow consumers to buy GM-Free-Fed meat and dairy products. Some Italian regional labels include non-GM requirements and the biggest German dairy does not use GM feed.⁵⁶ Norway and Switzerland have not approved any GM products for use in food or feed. In 2012, Turkey announced that GM-fed meat, milk and dairy products would be labelled.⁵⁷ China also imports large quantities of non GM soya. In May 2013, major European retailers from five countries, including Germany's REWE Group, EDEKA and LIDL, released the Brussels Soy Declaration in which they have pledged support for the non-GMO soy production system of Brazil.⁵⁸ However, UK retailers (including LIDL, which sources non-GM soy in Germany) appear to be reluctant to sign long-term contracts to secure non-GM supplies in the UK, and importers appear reluctant to deliver identity-preserved GM-free soya to the UK market. Restricted availability of non-GM feed supplies suits US Government interests in the context of the Trans Atlantic Trade and Investment Partnership (TTIP) negotiations because a very high percentage of US soya is GM.⁵⁹
40. Non-GM soya imports to the UK have recently started to be sourced from India by smaller suppliers.⁶⁰ However, the lack of consumer choice and access to non-GM-fed meat and dairy products remains, due to last year's change in supermarket policies and the lack of either mandatory labelling requirements for GM-fed products or a voluntary labelling scheme for GM-free-fed.
41. The benefits and risks of GM crops are highly contested, as noted above. Labelling is essential to maintain consumer choice and allow product recalls if anything goes wrong. Consumers may wish to make decisions on environmental grounds (for example, avoiding RoundUp Ready soya due to the impacts of blanket spraying on Monarch butterflies) or due to opposition to monopoly control through patents, as well as on health-related grounds. The idea that consumers should have the right to choose non-GM food (including non-GM-fed meat and dairy products) is widely supported by people on all sides of the debate.⁶¹
42. UK Government policy in theory also supportive of consumer choice about GM, stating: *"The Government will ensure consumers are able to exercise choice through clear GM labelling rules and the provision of suitable information, and will listen to public views about the development and use of the technology"*.⁶² The Conservative Party Manifesto 2010 stated that to support sustainable farming they would "ensure

*that consumers have the right to choose non-GM foods through clear labelling” and “develop a legally-binding protocol covering the separation of GM and non-GM material, including clear industry liability”.*⁶³

43. There is clear public demand from the public for products to be labelled so that they can see which foods have used GM crops in the production process and which have not. In June 2010 a GfK/NOP poll commissioned by GM Freeze and Friends of the Earth showed 89% of shoppers want a label on GM-fed animal products.⁶⁴ FSA-funded research published in January 2013⁶⁵ also shows that the public want labels to enable them to make informed choices about GM.⁶⁶ It states (page 13): *“Two-thirds of respondents considered it very or quite important that it is written on a label if the food itself or ingredients in the food are from a genetically modified plant or the food product is from animals that have been fed genetically modified plants”* [Emphasis added]. The FSA’s research also found that 69% thought it important that if a product was labelled “GM Free” or “Free from GM” one criteria should be that *“For items like meat, milk, or eggs, the food is from animals that have not been fed GM plants”* (page 14).
44. GM-free labelling schemes already exist in many countries, as described in the EC’s 2010 evaluation of GM food and feed legislation⁶⁷, pages 129-141. The label “GM-free” is currently being used in hundreds of product lines across the EU as detailed in EC (2010) Table 7.9 (more lines have since been added).⁶⁸ “GM free” labels currently in use in the EU are large front-of-pack labels to reflect consumer demand for clear display of this type of information. The German government has made “Ohne Gentechnik” (“GM-free”) labels available free of charge to retailers wishing to label products GM-free (see picture on the Ministry website⁶⁹). Major French retailer Carrefour introduced large front-of-pack “Free from GM feed” (“Nourri sans OGM”) labels in October 2010.⁷⁰
45. In January 2013, the Food Standards Agency (FSA) held a consultation on harmonisation of ‘GM-free’ labelling to feed into a formal review by the EU.^{71,72} Consumers, as well as the food manufacturing and retail industries, would benefit if GM-free labelling is consistent across the EU to ensure consistent standards. Full traceability of ingredients is already required under Regulation (EC) 1830/2003, so allowing additional voluntary labelling of what is used (or not used) in production will not add any additional costs, beyond the costs of adding the labels to the products.
46. An alternative or complementary (longer-term) approach is to revise Regulation (EC) 1829/2003 to require mandatory labelling of GM-fed meat and dairy products. The new German Grand Coalition supports this legislative change.⁷³
47. In summary, the UK Government should be supporting consumer choice and enhancing food security by diversifying feed supplies and resisting monopoly pressure to become increasingly dependent on imports of Monsanto’s RoundUp Ready GM soya. It could do so by implementing its own policy on consumer choice, supporting voluntary GM-free-fed labelling, and encouraging retailers to secure non-GM feed supplies. In the longer term, the UK should also support proposals for mandatory labelling of GM-fed meat and dairy products and take active steps to reduce reliance on imported animal feed by encouraging pasture-fed meat production and increased supply of sustainable UK-grown feed.

Developing countries

48. Changing agricultural practices and land use can have significant impacts on the social and economic circumstances of farmers and consumers, particularly in

developing countries.⁷⁴ The Royal Society's promotion of the concept of "sustainable intensification"⁷⁵ glosses over many of these issues by taking a utilitarian approach in which scientific institutions (such as the Royal Society itself) are capable of weighing up and making decisions about what is best for farmers and consumers then somehow promoting these solutions worldwide. This contrasts with a rights-based approach to considering the ethical implications of sustainable intensification, and with 'bottom-up' approaches to decision-making, which may lead to very different decisions.^{76, 77, 78} This is one of the weaknesses of the Foresight report on Food and Farming Futures⁷⁹, which makes a blanket global statement about restricting the expansion of agriculture onto new land, without considering highly variable local circumstances and the politics and economics of how decisions will be made about land use in practice on the ground.

49. The use of GM crops risks undermining food security in developing countries. A major concern is that smallholder farmers could be at risk of being locked into a 'poverty trap' by GM seed price hikes and the need for increasing amounts of herbicides and pesticides to tackle weed and pest resistance and shifts in pest populations.⁸⁰ Researchers refer to this as a 'transgenic treadmill'.⁸¹ The next generation of GM crops – which are tolerant to more toxic weedkillers - will exacerbate, not mitigate, these problems.⁸²
50. The Government should sustain and promote export markets, and support agriculture in other countries by:
- Keeping the UK GM-free to maintain access to GM-free export markets;
 - Adopting a more bottom-up approach to DFID funding priorities in the area of food and agriculture, consistent with the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD).

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Website: www.genewatch.org

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