DOES THE BBC HELP CULTIVATE A PRO-GMO AGENDA IN THE UK?

Results of an open survey, June 8-13, 2015

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www.beyond-gm.org

EXECUTIVE SUMMARY

A recent BBC *Panorama* programme, entitled *GM Food – Cultivating Fear,* suggested that opposition to GMOs is "morally unacceptable" and that those who oppose GMOs are prone to "making things up" instead of relying on facts and sound science.

In the days following the programme there was considerable criticism about its narrative and the way that it framed the issues in support of a particular and partial point of view.

It was in this context that Beyond GM endeavoured to provide a space, however limited, for broader public comment by undertaking a survey and gathering comments which explores the views of an informed public.

At the heart of this enquiry were some very basic questions: Does the BBC help cultivate a pro-GM agenda in the UK? and How adequately and respectfully are public concerns about genetic modification in food and farming represented by the BBC?

The survey was conducted online between 8th and 13th June 2015. There were 1000 respondents; 49.3% men and 50.6% women, and with an age spread typical of that of the UK as a whole.

Respondents were made up of individuals from both sides of the GMO debate and represented a spectrum from those who believe that GMOs are necessary and beneficial to those who believe that GMOs are unnecessary and risky. Within this spectrum there was also a 'middle ground'; those who felt GMOs were either 'potentially beneficial' or 'potentially harmful'. This group represented around 20% of respondents.

Looking at the survey answers from the perspective of these different spectrums turned up some interesting answers. In brief the findings of the survey were that:

- 65% of respondents feel there is a general pro-GM bias in the British media; 58.6% of those in the 'middle ground' agreed.
- The BBC in general, and *Panorama* in particular, is seen as the most biased pro-GM media outlet by far.
- 72% of all respondents feel the BBC represents a pro-GM stance. 65% of respondents who occupied the 'middle ground' believe the BBC has a pro-GM stance.
- 66% of all respondents and 57% in the 'middle ground' subgroup did not trust experts featured on BBC programmes.
- 87% of all respondents feel that people the BBC interview as "independent experts in science and technology" should reveal their sources of funding, corporate affiliations and if they hold patents; 88% of those in the 'middle ground' expressed this opinion.
- 70% of all respondents and 64% of the 'middle ground' do not believe that the BBC adequately or respectfully reflects the public's concerns about GMOs.

Open surveys like this one can bring together the views of a knowledgeable group of people who are able to articulate their views more fully. It is a matter of judgement as to how far these views resonate amongst the wider public.

We are, however, confident that the results are not out of line with previously published open and random survey results (see *Some Context – Previous Public Surveys*, page 18) and may even be a significant addition to the literature on public views on GMOs.

BACKGROUND TO THE SURVEY

How adequately and respectfully are public concerns about genetic modification in food and farming represented by the BBC?

A recent BBC *Panorama* programme, entitled *GM Food – Cultivating Fear,* suggested that opposition to GMOs is "morally unacceptable" and that those who oppose GMOs are prone to "making things up" instead of relying on facts and sound science.

It further suggested that the concerns and values of those who oppose agricultural GMOs are so fluid and insubstantial that they would abandon them if GM food could be priced cheaply enough.

In the days following the programme there was considerable criticism about its narrative and the way that it framed the issues in support of a particular and partial point of view.

The public can, of course, complain to the BBC about programmes which it finds offensive or unbalanced, but such complaints can be – and many argue, often are - easily ignored. Indeed, the pro-forma reply sent to those who have complained about the programme failed to address often very specific concerns raised by viewers.

One of the goals of Beyond GM is to help raise awareness that genetic modification (GM) in food and farming is not simply a science issue. In our view much of the polarisation in the GMO debate is due to this kind of reductionist framing. We also want to bring the wider public back into the GMO debate and seek to ensure that people who have concerns or questions on the subject of genetic engineering in food and farming are given ample space to express them and that those views are respected.

For these reasons, in the wake of the *Panorama* programme we have endeavoured to provide a space, however limited, for broader public comment by undertaking a survey and gathering comments which explore the views of an informed public about the way its views, and the issues around GMOs, were represented by this programme and by the BBC in general.

This report is structured in the following sections:

- The survey findings
- Previous public surveys
- A concluding discussion of the BBC's 'balance' on the GM issue
- Appendices including a review of respondents' comments

DATA COLLECTION AND FINDINGS

Data collection was via a Survey Monkey survey and took place between Monday the 8th of June (after the *Panorama* programme had been broadcast) and Saturday the 13th of June, when a predetermined limit of 1000 respondents was reached.

The survey was open to all and was publicised through social media and an initial alert in Beyond GM's supporter newsletter. It was also publicised through organisations and individuals involved in

the GM debate. These included pro-GMO protagonists such as Mark Lynas, who also used social media to encourage their supporters to take part.

Respondents, thus, were, self-selected, interested and/or knowledgeable about GMOs and motivated to respond.

Self-selection is a widely used polling technique. Like all polling methods it has advantages and disadvantages. In its favour is that it can bring together the views of a knowledgeable group of people who are able to articulate their views more fully. Against it is the fact that it may or may not reflect the views of a wider public, which may or may not be so well informed.

We are however confident that the results are not out of line with previously published random and self-selected survey results (see *Some Context – Previous Public Surveys*, page 18).

FINDINGS

The survey yielded both quantitative and qualitative data. With 9 questions (two of which asked for extended comments) and taking anywhere from 2-10 minutes to complete it was a relatively lengthy survey. Nevertheless 100% of people who logged onto the survey completed it.

In addition to multiple choice answers, questions 2 and 6 allowed room for survey respondents to leave comments on pro-GMO bias in media outlets in general and to offer their views on what questions the BBC should be asking about the GMO issue.

In spite of the relative length of the survey a little over half (506) of the survey respondents left comments on either Q2 or Q6. In total 755 comments were made – 330 for Q2 and 425 for Q6.

Nearly half (49%, or 240 people) of those who left comments did so in both sections. These comments are dealt with in *Appendix 1* of this report.

Throughout this report, unless otherwise indicated, we will refer broadly to those who believe that GMOs are necessary and beneficial/potentially beneficial as being 'supportive' (27% of respondents) and those who believe that GMOs are unnecessary and risky/potentially harmful as being 'not supportive' of GMOs (73% of respondents).

For some questions we also looked separately at those who indicated they thought GMOs were 'potentially beneficial' and 'potentially harmful' as a group in its own right which represented a kind of 'middle ground' view on the issue. This group accounted for approximately 20% of the survey respondents.

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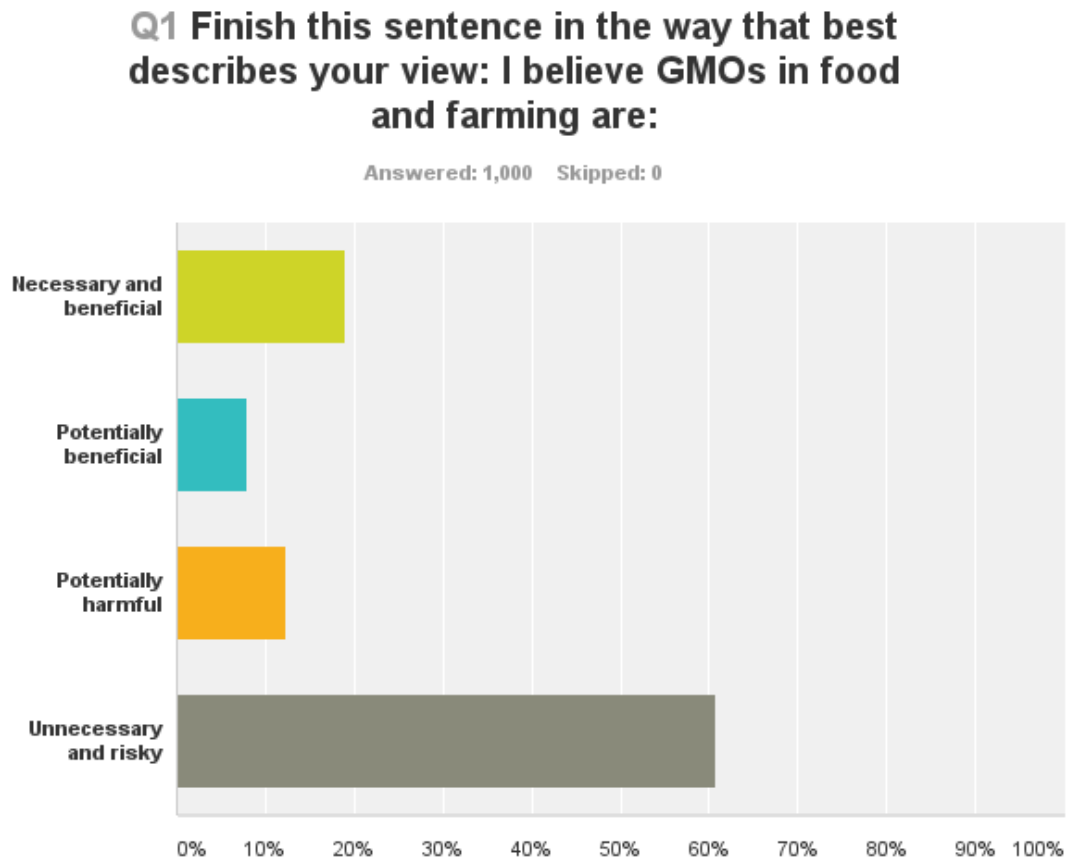
QUESTION 1



Respondents' answers broke down in the following way:

	Responses	%
Necessary and beneficial	190	19
Potentially beneficial	79	7.9
Potentially harmful	124	12.4
Unnecessary and risky	607	60.7

This question helped establish a baseline for the survey, giving an indication of the respondent's core beliefs coming into the survey.

Those who were supportive of GMOs comprised 27%, and those who were not supportive comprised 73% of the sample.

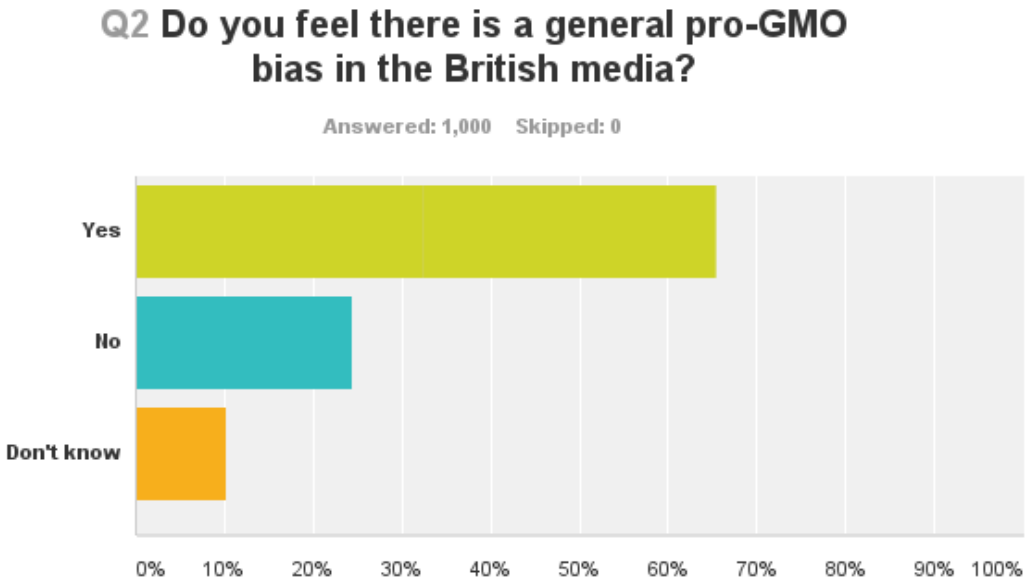
While it would be tempting to say that the large majority not supportive of GMOs is evidence of bias in this particular survey, these numbers are very much in line with other public surveys of the UK population.

For example in 2012 the BBC's *Countryfile Magazine* launched an open poll which posed the question Should GM crop trials be allowed to go ahead? The online surrey returned 7824 responses, 79% (6144) of whom said no and 21% (1680) sad yes.

An open poll in the *Guardian* newspaper online reported in 2013 that 72% of readers said they do not believe GM food is either safe or beneficial. Six months later the *Guardian* ran another online open poll – should restrictions on GM crops be relaxed? – 71% said no.

For more on the larger context of GMO polls in the UK and Europe see *Some Context – Previous Public Surveys*, page 18.

QUESTION 2



Respondents' answers broke down in the following way:

	Responses	%
Yes	653	65.3
No	244	24.4
Don't know	330	10.3

Question 2 asked if there was a general feeling that the UK media was biased in favour of GMOs. This question also allowed room for respondents to provide examples of media outlets they felt exhibited pro-GMO bias.

Among the 269 respondents who were supportive of GMOs only 7% (19) felt the UK media has a general pro-GMO bias. Only 6 respondents from this group offered further comment on GMO bias in the media. Most of these simply listed the name of media sources where they perceived bias.

Amongst the 731 respondents who are not supportive of GMOs, 86.7% held the opinion that the UK media was generally biased in favour of GMOs and 324 (44%) offered extended comments.

Amongst those who occupied the 'middle ground' 58.6% felt there was a general pro-GMO bias in the British media.

The BBC, and in particular the *Panorama* programme, was the media source most frequently cited as being biased in favour of GMOs. As the survey closely followed the *Panorama* programme it is possible that these views may be somewhat overstated.

Media outlet	# mentions
BBC	226
Panorama	88
Telegraph	31
Times	26
Guardian/observer	26
Independent	16
Mail	16
Countryfile	14
Farming today	4
Farmer's Weekly	3

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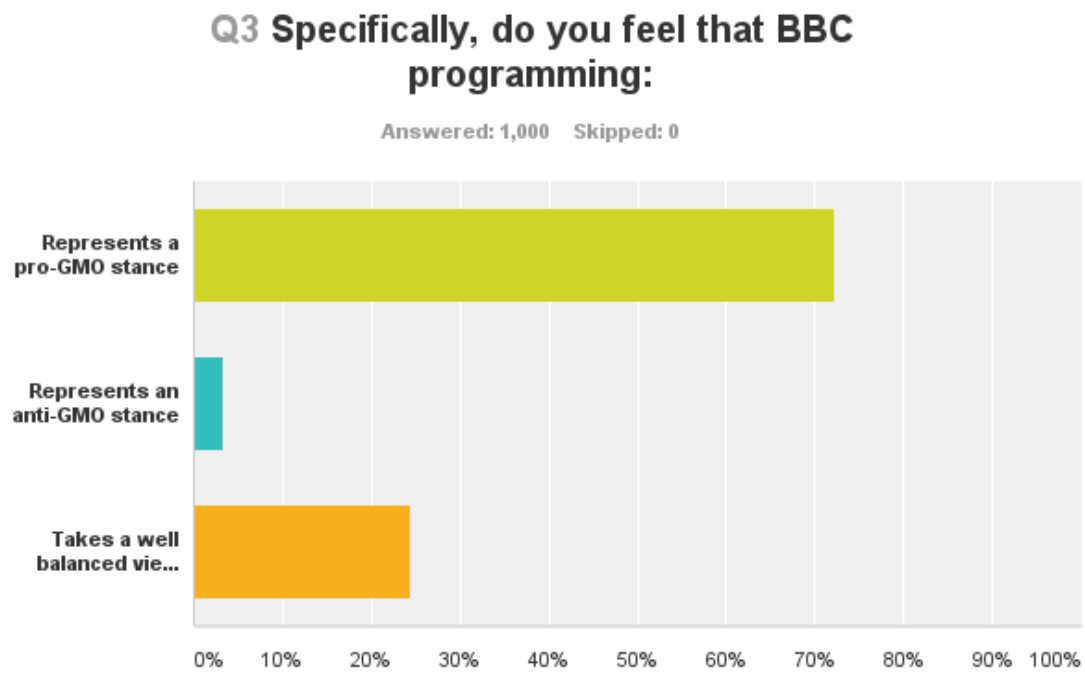
QUESTION 3



Respondents' answers broke down in the following way:

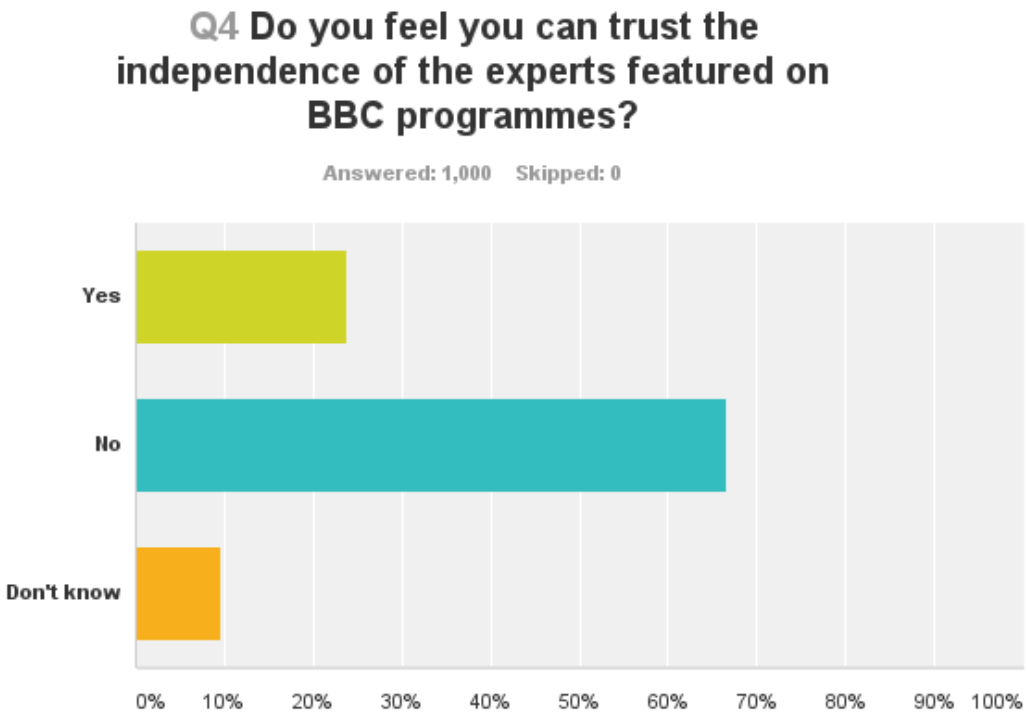
	Responses	%
Represents a pro-GMO stance	722	72.20
Represents an anti-GMO stance	33	3.30
Takes a well balanced view	245	24.50

Not all of those who are supportive of GMOs felt that the BBC took a well balanced view of the GMO issue. Within this group 83.6% took this view, while 8.9% and 7.4% respectively felt the BBC took a pro and anti-GMO stance.

The picture was very different for those who are not supportive of GMOs and the trend was more definite. Only 1.7% felt the BBC took a well-balanced view of the GMOs issues while 95.4% and 2.7% respectively felt the BBC took a pro and anti-GMO stance.

Among those who held a more 'middle ground' view there was still a strong feeling that BBC programming is biased in favour of GMOs; 65% of this group held this view, while 31% felt that BBC coverage was well-balanced and 3.9% felt it was anti-GMO.

QUESTION 4



Respondents' answers broke down in the following way:

	Responses	%
Yes	238	23.80
No	667	66.70
Don't know	95	9.5

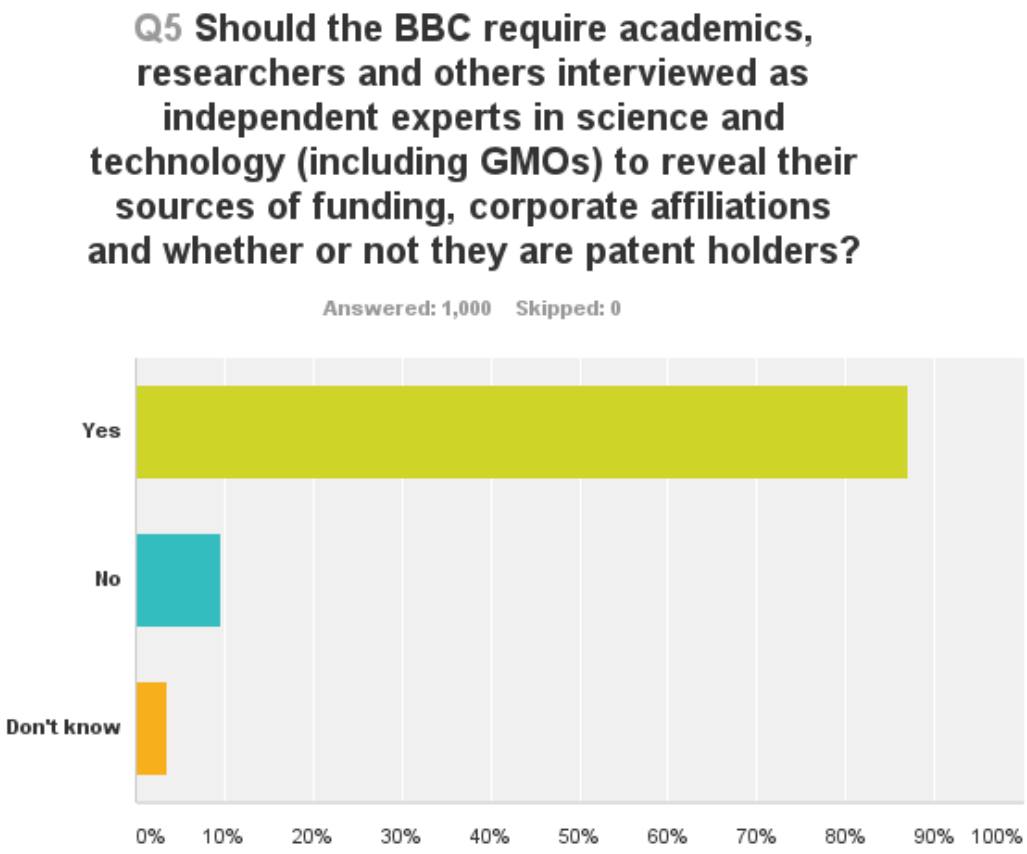
There were clear divisions between those who are supportive of GMOs and those who are not supportive. The answers of these groups were essentially mirrors of each other, thus:

- 88.9% of those not supportive of GMOs felt they could not trust BBC experts,
- 83.6% of those who are supportive of GMOs said they felt they could in both groups
- Around 10% in each group said they did not know.

Such mirroring is to be expected in groups with such polarised views and was even more marked when comparing the extreme ends of the spectrum. Amongst those who believe GMOs are necessary and beneficial 90.1% said yes compared to those who believe they are unnecessary and harmful where 90.5% said no.

However, looking at the subgroups whose stance on GMOs occupied the 'middle ground', there is a clear trend toward not trusting the experts on BBC programmes: 57.1% of those who fell into these two categories felt such experts were untrustworthy, compared to 28% and 14.7% respectively who felt they could be trusted or who did not know.

QUESTION 5



Respondents' answers broke down in the following way:

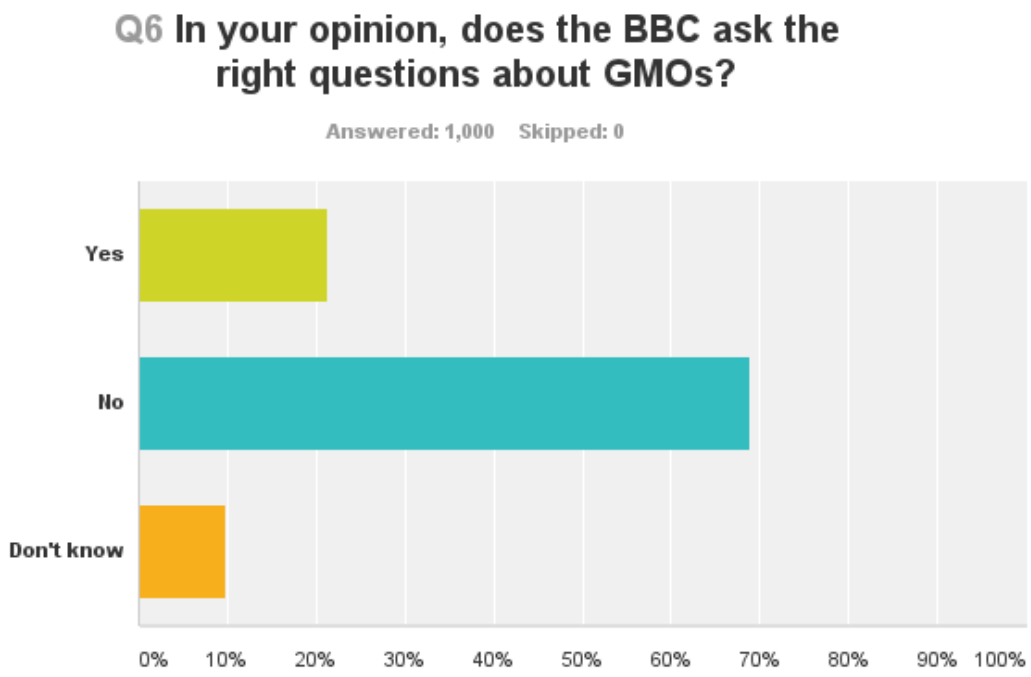
	Responses	%
Yes	870	87
No	95	9.50
Don't know	35	3.50

Those who were supportive of GMOs were less inclined to demand clarity on the potential vested interests of those who are held up as experts on BBC programmes.

Only 54.2% of those who were supportive of GMOs believed that the BBC should require independent experts to provide evidence of their independence or otherwise, compared to 99% of those who were not supportive of GMOs.

Amongst those whose stance on GMOs is more in the 'middle ground' there remained a clear desire for the BBC to ensure the independence of its experts: 88.1% of this group felt the BBC should ensure the independence of its experts, compared to 8.3%% and 3.4% respectively who did not feel the BBC should take this action or who did not know.

QUESTION 6



Respondents' answers broke down in the following way:

	Responses	%
Yes	213	21.30
No	689	68.90
Don't know	98	9.80

Among those who were supportive of GMOs 12% (33) offered suggestions on the kinds of questions the BBC should ask.

In comparison, amongst those who were not supportive of GMOs, 54% (392) offered suggestions on what the BBC should be asking.

A significant number of the total comments (27%) from those who are supportive of GMOs focused more on attacking the credibility of those who are unsupportive of GMOs rather than on the subject of genetically modified farming and food itself. For example:

"They should be asking why anybody cares what these know-nothing GM campaigners think"

"Should ask opponents what their sources of funding are."

"Why is the anti-GMO disinformation brigade more concerned about targeted genetic manipulation than it is about the random genetic change that happens all the time, including in organic farming? Why are new organic products not subjected to the same testing and safety as products from targeted transgenic manipulation?"

"They should be asking about the ulterior motives of anti-GM campaigners and why they rely on unfounded propaganda to spread fear. They should ask why science is regulated so much but NGOs are allowed to spout any old rhetoric without backing up their claims with fact."

Some thoughtful comments, in the spirit of genuine enquiry, did arise in this group, however:

"Is GM being misused for commercial gain at the expense of sustainability and a healthy environment?"

"What implications does each modification have... i.e. not just talking about 'GM' as a whole all the time."

"Affiliations and funding sources of pro- and anti-GM speakers, better explanation of conventional breeding as well as GM."

"What more research and regulation will be needed to ensure we understand the social and environmental implications of such a powerful new technology?"

"Why the public are anti GM? What are the fears? Interrogate the environmental and health risks more intelligently. The programme was quite one sided for the BBC, it came across like a pro GM film. Put the positives but balance up with the genuine concerns out there. Why not have a pro GM turned anti GM person to put the opposing view?"

"What organic alternatives are available? How much is spent on GM research compared to organic research? Could more research in organic bring better results?

Those who are not supportive of GMOs offered a voluminous number of comments and demonstrated a real breadth of knowledge of how complex and nuanced the GMO issue is and how many areas of our lives it intersects with. For example:

"Is it necessary - can we achieve desired ends by other means? Has it been proved safe in laboratory tests over multiple generations? What influence is the biotech industry exerting behind the scenes? Why is public money being spent on this corporate profit driven industry and not on more benign methods of enhancing food production?"

"Perhaps it should be asking why there is still such a polarised debate. It should give more focus to the long term health and environmental concerns that may be irreversible - being mindful of the precautionary principle."

"Who funds the scientists you interview/research you cite? Why are you not challenging the idea that we need to produce MORE food when so much goes to waste? Why isn't a wider spectrum of scientists interviewed? Why aren't alternative farming methods explored?"

"Questions around biodiversity are so rarely asked - and biodiversity is also rarely acknowledged as a legitimate area of scientific concern. Questions around environmental impact, levels of pesticide/herbicide use, the fact that plants adapt to herbicides and animals adapt to pesticides in the same way bacteria are becoming immune to antibiotics. These are all scientific concerns.

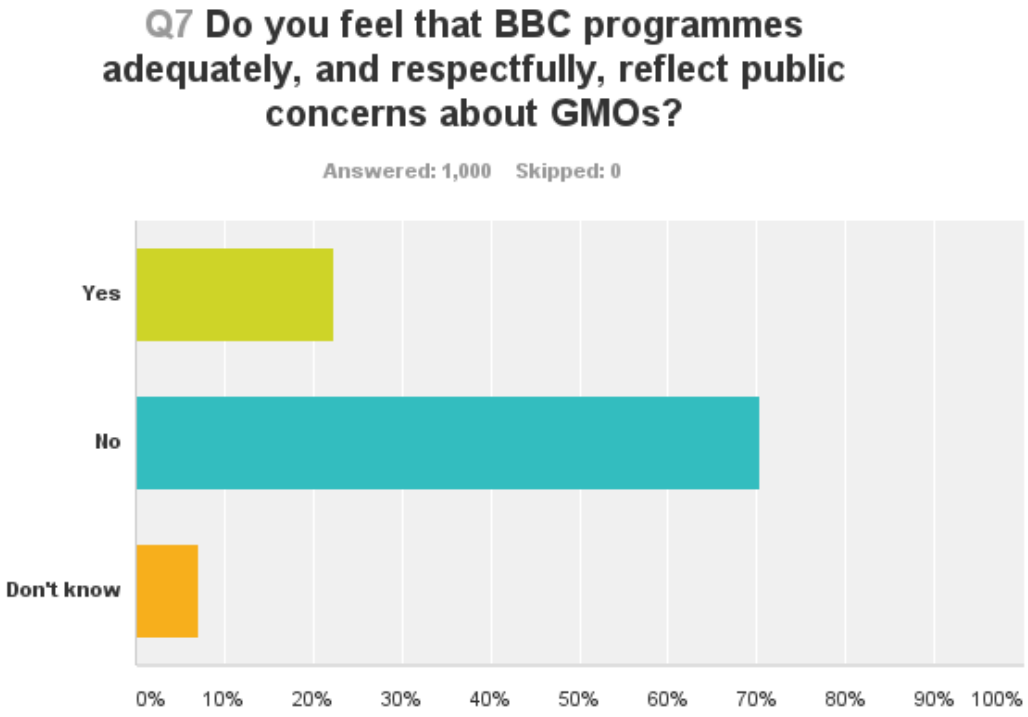
"How were GMOs illegally granted the status of substantial equivalence to non-GMO foods; why are independent scientists who find harm with GMOs blacked out in the media, and discredited by pro-GMO media and scientists?"

"The complexity both of genes in a genome & of species in the wider ecology are not at all understood. Those involved in genetic transference, do so for commercial & amoral interests. It is important for independent reporting to take a wider and a sceptical view."

"The GMO business model, the risks of globalising the food industry, contamination risks, & alternatives to GMO."

'A significant number of the total comments (27%) from those who are supportive of GMOs focused more on attacking the credibility of those who are unsupportive of GMOs rather than on the subject of genetically modified farming and food itself.'

QUESTION 7



Respondents' answers broke down in the following way:

	Responses	%
Yes	224	22.40
No	704	70.40
Don't know	72	7.20

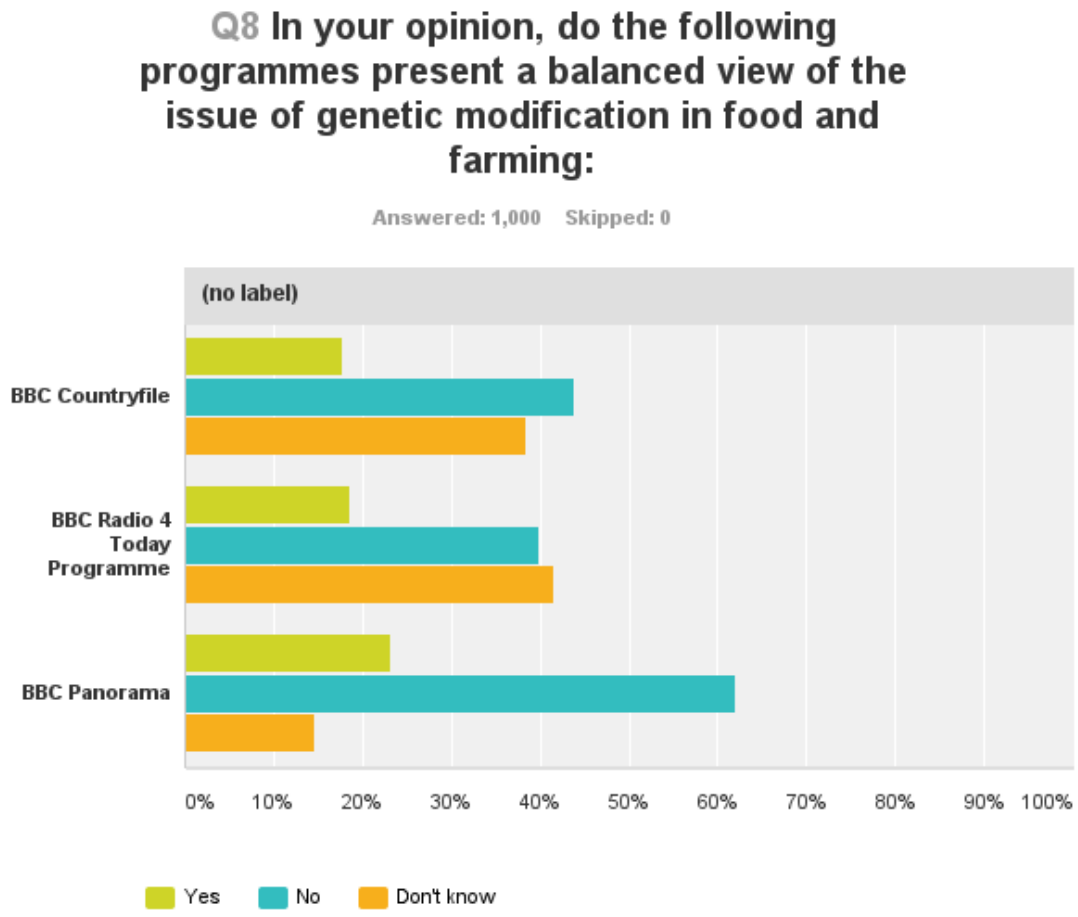
The framing of the GMO issue on the *Panorama* programme of June 8, suggested that:

- Opposition to GMOs is "morally unacceptable";
- Those who oppose GMOs are prone to "making things up", instead of relying on facts and sound science; and
- The concerns and values of those who oppose agricultural GMOs are so fluid and insubstantial that they would abandon them if GM food could be priced cheaply enough

So it is perhaps not surprising to find such clear response that BBC programming neither respects nor reflects the majority in the UK who question the need for GMOs.

Even those who held 'middle ground' views about GMOs believe the BBC is getting it wrong; 64.5% of this group felt that BBC programming did not adequately, and respectfully, reflect public concerns about GMOs.

QUESTION 8



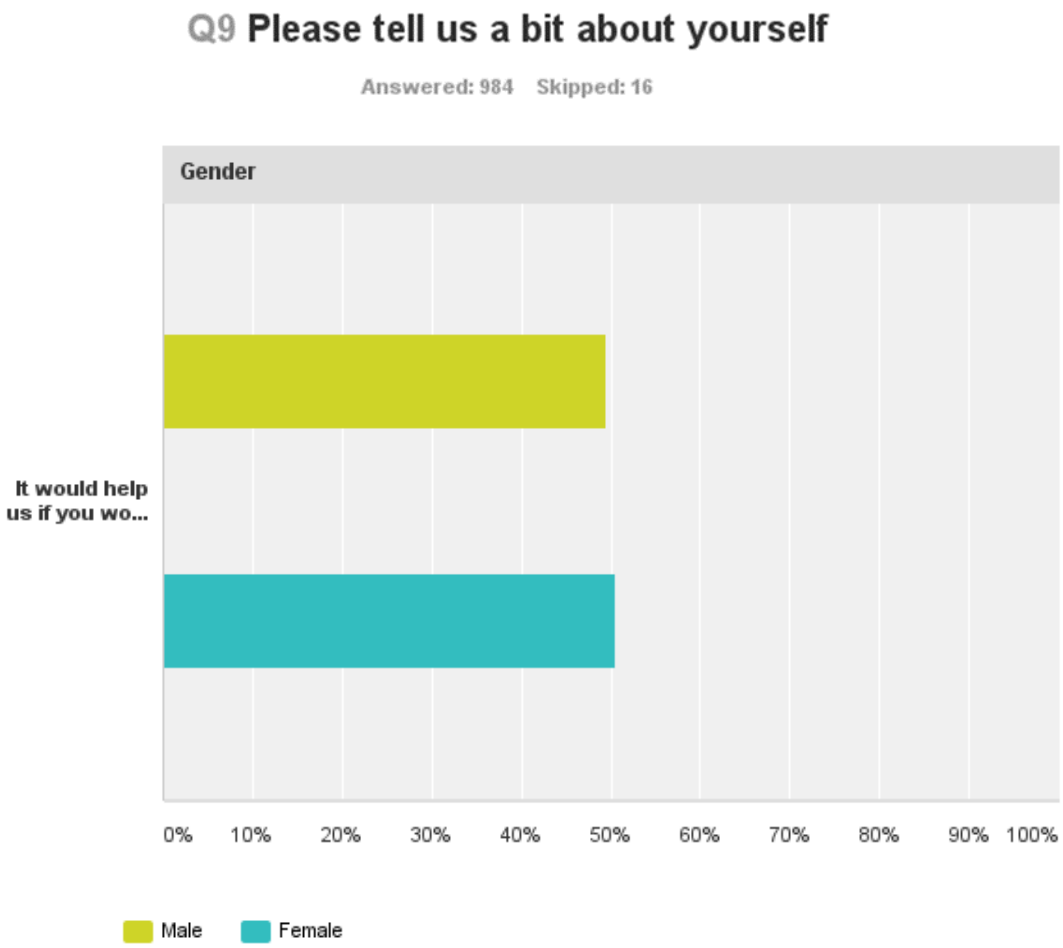
Respondents' answers broke down in the following way:

	Yes	No	Don't know
BBC Countryfile	175 (17.82%)	430 (43.79%)	377 (38.39%)
R4 Today Programme	181 (18.55%)	389 (39.86%)	406 (41.60%)
BBC Panorama	229 (23.20%)	613 (62.11%)	145 (14.69%)

None of the BBC's flagship current affairs programmes fared particularly well here. Even amongst the 'middle ground' group more than half (57.7%) felt that *Panorama*, for example, was biased towards GMOs.

It is difficult to interpret whether the relatively high number of 'don't knows' is because this sample was comprised of people who don't watch or listen to these programmes or whether respondents felt that their coverage of the GMO issues is more equivocal.

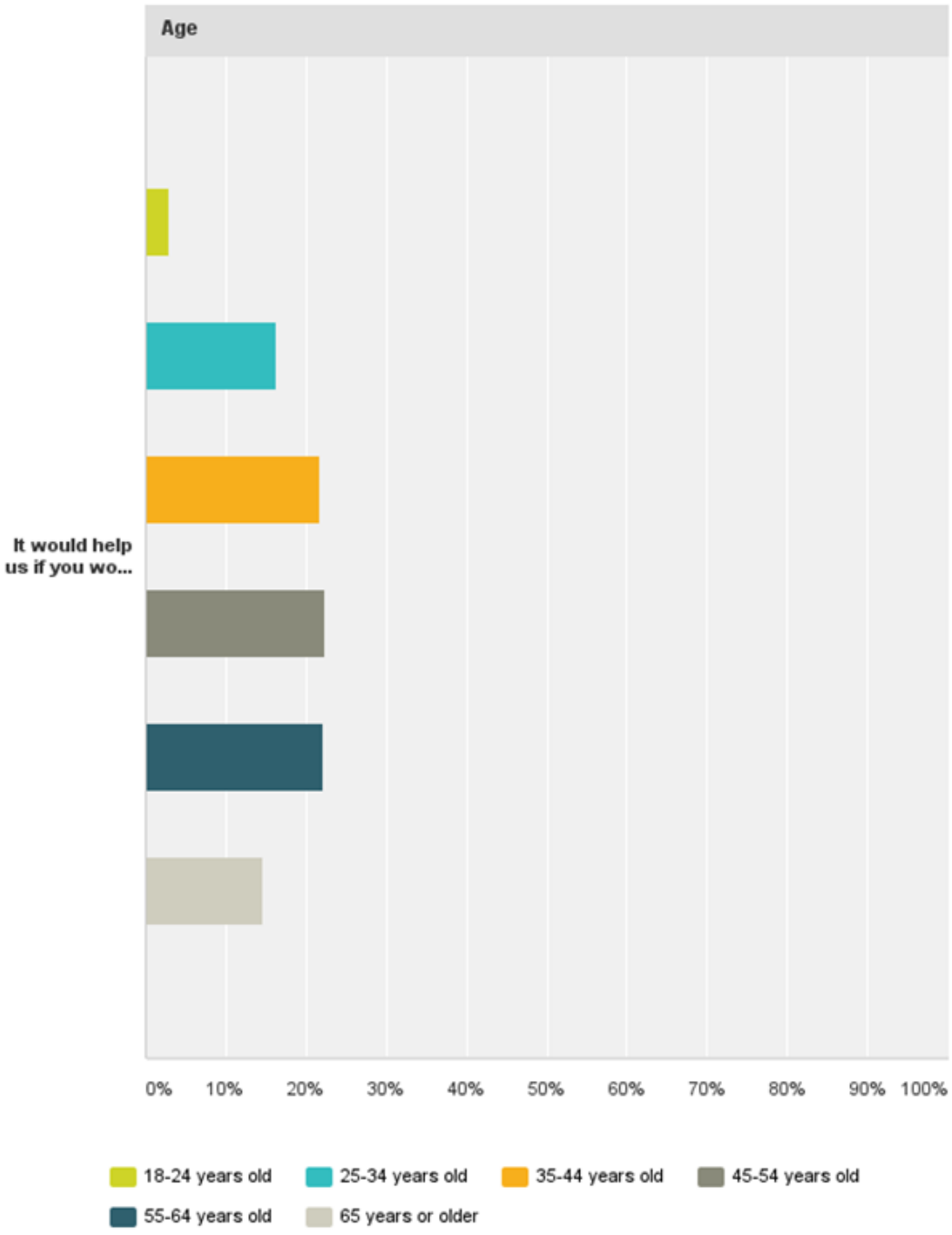
QUESTION 9



Respondents' answers regarding gender broke down in the following way:

	Male	Female
Gender	483 (49.39%)	495 (50.61%)

The above figures are in line with the demographics of the UK as a whole which are Male: 49.11% and Female 50.89%



Respondents' answers regarding age range broke down in the following way:

Age range	# (%)
18-24	29 (2.97%)
25-34	159 (16.29%)
35-44	211 (21.62%)
45-54	218 (22.34%)
55-64	216 (22.13%)
65 +	143 (14.65%)

Since our survey did not include people under the age of 18 is it hard to directly compare these figures to the UK age demographics. However the distribution of age ranges is broadly reflective of the UK as a whole.

When broken down between those who are supportive of GMOs and those who are not significant gender differences occurred.

- Of those who were supportive of GMOs most (52.9%) fell in the 25-44 years age groups; 73.7% were male
- Of those who were not supportive of GMOs most (47%) fell within the 45-64 years age group; 32.5% fell into the 25-44 years age group; 59.39% were female.

The gender difference was even greater in the 'middle ground' groups who felt that GMOs were potentially either harmful or beneficial.

- 67.4% of these who felt GMOs were potentially harmful were female, with the majority in the 35-44 and 55-64 years age groups
- 71.4% of those who felt GMOs were potentially beneficial were male – again the majority was in the 25-44 years age group.

In countries like the US women have become very vocal drivers of genuine grassroots opposition to GMOs. Their impact has been so wide that the biotech industry has hit back, courting and even employing 'Mommy bloggers' to write pro-GMO articles and blogs to counter this influence. Indeed the 'Mommy blogger' is a key part of biotech's 'astroturfing' PR strategy (see *Ignoring vested interests*, page 31).

SOME CONTEXT – PREVIOUS PUBLIC SURVEYS

The finding that around 73% of the survey respondents feel that GMOs are potentially harmful/ unnecessary and harmful is very much in line with previous open polls on this subject.

MEDIA POLLS

Open polls show a fairly consistent pattern, with the majority of respondents expressing a desire for the UK to remain GM free.

- BBC's *Countryfile Magazine* asked viewers in 2012 if GM trials should be allowed to go ahead in the UK; 79% said no.
- A 2012 MSN poll recorded that 67% said they did not want GM crops grown in this country.
- A survey by food industry magazine *Food Navigator* in 2012 found that 73% said they favoured a ban on GM food in the UK.
- The *Guardian* newspaper reported in 2013 that 72% of readers said they do not believe GM food is either safe or beneficial. Six months later the *Guardian* ran another poll – should restrictions on GM crops be relaxed? – 71% said no.

GOVERNMENT POLLS

While these show somewhat different figures they nevertheless show that the majority of people in the UK are not in favour of GMOs

- A 2014 YouGov poll found that 46% of adults had negative views about GM. In addition the number of adults who felt the UK government should not be promoting the adoption of GMOs was 40% – nearly double the 22% in favour of such promotion.
- In November 2014 the FSA published the latest figures for its bi-annual Public Attitudes Tracker Survey. Amongst spontaneously mentioned concerns GMOs came second (8%) after food hygiene when eating out (9%). This puts GMOs ahead of additives (7%), date of labels (6%), pesticides (5%) and hormones/antibiotics in food (5%). The figures for responses to prompted questions showed that 24% of people have concerns about GM which, while it is behind those other concerns is, according to FSA, the highest level of concern about GM since these tracking surveys started in 2010.

WHAT DO FARMERS THINK?

In 2013 Farmer's Weekly polled farmers on the topic of GMOs

- 61% of respondents said they "would like to grow GM crops". However 26% of respondents said they "would not cultivate [GM] under any circumstances",
- Even among those who said they would like to grow GM crops nearly a quarter (24%) said they see "no advantage in growing GM crops" – which begs the question of why they would want to grow them in the first place.
- In fact, only 15% of farmers said they would eat GM, and investment in GM was ranked last among farmers' priorities for Government attention.

WHAT ABOUT THE REST OF EUROPE?

The last major Europe-wide public opinion poll on GM crops was conducted in 2010 by Eurobarometer:

- It found that the majority of respondents were concerned over the safety of the crops.
- The researchers noted: "The wider picture is of declining support across many of the EU Member States – on average opponents outnumber supporters by three to one, and in no country is there a majority of supporters."
- In the UK less than 25% of people indicated any kind of support for GM

AND U.S. CONSUMERS?

There are several polls showing overwhelming support amongst US citizens for labelling of GMO ingredients in food. However a recent national survey, carried out by Consumer Reports in April 2014 found that:

- 72% of US consumers want to avoid genetically engineered food completely.

THE PEW POLL IN THE U.S.

A 2014 PEW Research Center survey, which compared the views of American Association for the Advancement of Science (AAAS) members with those of the general public on a variety of topics is often cited as an example of scientists' confidence in the safety of GMOs. The researchers reported:

- "The largest differences between the public and the AAAS scientists are found in beliefs about the safety of eating genetically modified (GM) foods. Nearly nine-in-ten (88%) scientists say it is generally safe to eat GM foods compared with 37% of the general public, a difference of 51 percentage points. One possible reason for the gap: when it comes to GM crops, two-thirds of the public (67%) say scientists do not have a clear understanding about the health effects."

A reality check about these findings is necessary.

Although this survey was represented in the media as a scientist versus public dynamic in fact the Pew researchers admit to using a "broad definition of the scientific community". This is because not all members of the AAAS are actually scientists. It is uncertain how many of them, if any, are geneticists.

The AAAS member participation was self-selected; members were sent a letter which "described the nature and purpose of the survey and included the URL and other access information to the online survey".

In contrast the public selection was done via random selection without prior knowledge of the nature of the survey.

It should also be noted that although *Panorama* used the Pew survey results to bolster its argument that there is scientific consensus that GMOs are safe, the mere fact that 12% of AAAS members felt that GMOs had not been proven safe supports the notion of no scientific "consensus" on GMOs.

GM AND BBC - NEW GUIDELINES, SAME PROBLEMS

Accusations of bias in the media are commonplace, and can come from both sides of any debate. Arguably, as our society faces ever more complex challenges, commenting on current affairs and reporting news in a relevant and factually correct way has become more difficult, but also more necessary.

Over the years the BBC has simultaneously been accused of liberal bias, conservative bias, left-wing bias and other biases as well. There is no question that reporting news in a world where information technology has blurred the lines between information and knowledge, and where this technology is itself the victim of corporate manipulation and scams, is difficult.

As a public institution funded by a license fee paid by all individuals who own a television – regardless of whether they ever watch its programming – the BBC is answerable to the public in a unique way.

The BBC's rules for reporting, and its views on fairness and balance, have changed in recent years. Those changes were brought about in part by an internal review which was initiated in 2010 which

focused on how well the BBC reported stories of a scientific nature. According to the BBC Trust website:

> "Given the importance of science in contemporary life, the sensitive ethical and social issues that it raises and the fact that the public looks primarily to the media for its science information, in 2010 the BBC Trust launched a review of the impartiality and accuracy of BBC science coverage. The review covered specialist and non-specialist science content on TV, radio and online. Steve Jones, Emeritus Professor of Genetics at University College London, was commissioned to write his own independent report as part of the review."

This review, in some form or other, was ongoing until 2014. Its headline findings suggested that the BBC gave too much time to climate change deniers and did not pay enough attention to the scientific evidence showing that climate change was real and that its impacts could be seen in the here and now.

However, alongside climate change, the review also pinpointed GMOs and MMR as examples of where a change in approach was needed and where those voices taking an opposing view to the 'weight' of science should be given reduced attention.

Giving equal air time to special interest groups and so-called 'experts', the review concluded, amounted to false balance.

As a result the BBC revised its editorial guidelines giving more prominence to 'expert', academic and scientific opinion and less to the views of activist organisations and NGOs.

Implementing the recommendations of the review also led to the notion that it is not necessary to give a numerical balance – i.e. equal contributions from each side of the argument – in order to achieve 'balance'; and that on contentious issues such as climate change, nuclear power and GM greater weight should be given to the 'expert' consensus than to opposing views of activists and NGOs.

It has also changed the way that the BBC deals with complaints about content. Viewers are far less likely to get a fair hearing. Indeed amongst the viewers who we know have complained to the BBC about the *Panorama* programme each has received the same pro-forma letter in response which defends the programme without addressing specific concerns (see example *Appendix 2*).

NO TRANSPARENCY

As a blanket policy this attempt at correcting bias has been disastrous.

In whatever field of endeavour, we should expect that those who are represented or who represent themselves as independent experts in the media should be truly transparent and independent.

This is something the revised BBC editorial guidelines aspire to as well (albeit in a way that gives the BBC as much leeway as possible for outside contributors).

Although there is no single section of the guidelines which deals specifically with vested interests and the independence of contributors, the issue of transparency is dealt with in several sections:

3.4.7: "We should make checks to establish the credentials of our contributors and to avoid being 'hoaxed'."

3.4.12: "We should normally identify on-air and online sources of information and significant contributors, and provide their credentials, so that our audiences can judge their status."

4.4.14: "We should not automatically assume that contributors from other organisations (such as academics, journalists, researchers and representatives of charities) are unbiased, and we may need to make it clear to the audience when contributors are associated with a particular viewpoint, if it is not apparent from their contribution or from the context in which their contribution is made."

These guidelines seem to be habitually ignored.

For example, the recent *Panorama* programme featured three 'experts' who have commercial associations with GM technology:

- Professor Jonathan Jones from the Sainsbury Laboratory owns several GM patents. He is the co-founder of several biotech companies and owns a company established to commercialise GM crops.
- Anne Glover co-founded a biotech company before promoting GM technology in her recent role as chief scientific advisor to the EU President.
- Mark Lynas is a pro-GM advocate employed as part of Cornell University's promotion of GMOs globally.

None of this was mentioned in the programme or in its listings.

FAILING TO FIND BALANCE

Allegations of bias and selective reporting at the BBC are becoming increasingly frequent. The *2014 Science and Technology Committee - Fifth Report, Advanced genetic techniques for crop improvement: regulation, risk and precaution*, notes:

> "**We have performed no detailed study of BBC coverage for this inquiry; however, we again emphasise the central role that the BBC plays in communicating science and remind it of its responsibility, as a public sector broadcaster, to promote learning and encourage conversation and debate about this important topic** [author's emphasis]. We encourage all of the media, particularly public broadcasters, to conduct a review of their own content on genetic modification, 'GM' and other related topics to ensure that it is fulfilling these public duties. **In particular, consideration should be given to how this topic is framed and whether it is being considered broadly enough in the context of other agricultural methods and wider issues of food production and food security** [our emphasis].

Indeed, in addition to 'experts' who are themselves free of bias and vested interests, framing is a crucial aspect of 'balance' in a topic that is both complex and nuanced.

IGNORING VESTED INTERESTS

The BBC's response to the review in many ways missed important aspects of the landscape of modern so-called special interest groups.

As a general rule, genuine special interest groups, by necessity, know more about the subject then generalists. They are therefore a rich source of background and context. With the changes at the BBC such groups may get less air-time but producers and journalists continue to turn to them as

sources of free information and for, what could be argued, is a rather cynical form of 'due diligence' given that their views are greatly diminished and in some cases absent from the finished programme.

For many years special interest groups arose as the result of genuine grassroots interest and concern. As the world is becoming increasingly more complex and the issues we face increasingly tied up with political and corporate agendas, a new type of quasi special interest group has arisen. Not so much 'grassroots' as 'astroturf' (indeed that is the PR industry term for it) such groups are an extension of corporate marketing and PR.

According to the group Sourcewatch:

> *"Campaigns & Elections* magazine defines astroturf as a "grassroots program that involves the instant manufacturing of public support for a point of view in which either uninformed activists are recruited or means of deception are used to recruit them." Journalist William Greider has coined his own term to describe corporate grassroots organizing. He calls it "democracy for hire.""

> "Unlike genuine grassroots activism which tends to be money-poor but people-rich, astroturf campaigns are typically people-poor but cash-rich. Funded heavily by corporate largesse, they use sophisticated computer databases, telephone banks and hired organizers to rope less-informed activists into sending letters to their elected officials or engaging in other actions that create the appearance of grassroots support for their client's cause."

The climate change deniers which triggered the BBC internal review were a good example of astroturfing. Had the BBC done its journalistic homework it would have found that many, if not all, had links to industry.

This context, however was missing from the review's conclusions and did not inform the changes in editorial policy which followed.

Implementing these recommendations gave carte blanche for input from the UK's Science Media Centre (SMC) and the cartel of the Royal Society and so-called science journalists. No-one appears to have questioned whether editorial input from these and similar sources is free from bias or corporate influence, nor whether a genuine scientific consensus exists (particularly with regard to GMOs), nor the validity of such consensus that is said to exist.

Indeed when Mark Lynas was represented on the *Panorama* programme by reporter Tom Heap as having become a GMO supporter because there was no "logic" in accepting the scientific consensus on climate change while dismissing it on GMOs, this representation missed a crucial point.

Climate change deniers – including scientists and academics – were funded by large multinational corporate interests, those who oppose GMOs are not. Instead, as a recent report *Spinning Food* details, those who promote GMOs – including scientists and academics – are also in the pay of large multinational corporate interests.

THE CULTURE OF 'EXPERTS'

For this reason, scepticism, with regard to such 'experts' is warranted.

The SMC is the acceptable face of the sceptic movement in the UK. It professes to make sense of the science – especially where complex issues like climate change and GMOs are concerned. Its briefings

and “expert reactions” have become a staple of British (and indeed international) mass media, and are featured regularly in places like the BBC and the *Guardian*.

The independence of the SMC, however, is questionable, and its influence is concerning.

Indeed in 2014 an international gathering of scientists in Brazil took a critical look at the SCM. One researcher, for example, found that between 2011-2012 in UK newspapers more than half the SMC’s expert reactions were covered in the press and, in 23% of cases only the SMC’s ‘experts’ were quoted – no other voice was present.

Worse, 60% of articles based on the SMC media briefings featured no non-SMC sourced material.

Another found that 20 of the SMC’s 100 most quoted experts were not scientists – defined as having a PhD and working at a research institution or a top learned society. Instead they were lobbyists for, and CEOs of, industry groups.

Perhaps not surprisingly he also found that the SMC’s opinions were skewed towards corporate science which represents the interests of its corporate donors.

A LONG HISTORY OF BIAS

There is no doubt that the BBC’s recent record, when it comes to reporting GMO issues, is poor.

It’s tempting to say that BBC programming has become more biased in favour of GMOs since the Steve Jones review in 2011. But in reality the BBC does not ever appeared to have seriously questioned the claims for the ‘benefits’ of agricultural biotechnology.

Is 2008, well before the BBC review, pig farmer Jimmy Doherty fronted a BBC *Horizon* programme *Jimmy’s GM Food Fight*. Indeed Doherty was probably one of the first ‘organic’ advocates to publicly proclaim his conversion to GMOs.

That programme was broadcast in the midst of the world food crisis of 2007-2008 which caused a substantial rise in the cost of food, especially staples such as rice, wheat, and corn. This rise in price had a devastating effect on hungry people in the developing world. Rioting was widespread and news programmes began to question whether there would be enough food for us all in the future.

Against this backdrop *Jimmy’s GM Food Fight* could, in a generous light, be seen as an early attempt by an overwhelmed media to provide ‘answers’ to the onslaught of bad news and the complex questions it was being forced to confront – although the food crisis was not, and is not, caused by lack of GM technology but rather by lack of political and economic foresight.

After many viewer complaints, the BBC did eventually investigate whether the programme was biased, though after a lengthy and contentious investigation the complaint was not upheld.

Since then the pace of pro-GM reporting has accelerated.

Days before the *Panorama* programme BBC Radio 4 broadcast a programme entitled *Is Opposition to GM Food Irrational?* The programme title may have included the question mark which the *Panorama* programme so obviously lacked, but the thrust of its argument was the same. It also quoted the controversial Pew study (see *Some Context – Previous Public Studies*, page 18) as evidence of the rationality of the ‘scientific mind’. Its conclusion – that fear of GMOs was not irrational because

human brains are imperfectly hardwired to be suspicious of new things – amounted to a kind of damnation by faint praise.

Earlier this year BBC radio debuted a news series *Why I Changed my Mind* with an interview with Mark Lynas explaining why he 'converted' from an anti-GMO to pro-GMO campaigner. To our knowledge no BBC programme has ever featured the story of a geneticist who was pro-GM but who changed his or her mind – though plenty exist.

Also this year, on the BBC programme *Hard Talk*, CEO of Syngenta Mike Mack made the case for GMOs, suggesting that labelling of these food products, was unnecessary because GMOs were safe and that such labelling would cause economic havoc. Presenter Steven Sackur did, at least, attempt to challenge Mack on some very tough issues including the imposition of American monocultures on African farmers.

However, we are unaware of any such programme that has given those who oppose GMOs the same airtime or chance to defend their views in the same kind of robust studio setting.

UNWILLINGNESS TO CHALLENGE

In addition, it is useful to compare this Sackur's challenges to the types of 'challenges' which presenter Tom Heap made during the *Panorama* programme, of which this interaction with Anne Glover, who accused anti-GM campaigners of making things up, is typical:

AG: The evidence is very straightforward on the safety of GM technology, so if you don't like the technology for ideological reasons then what you have to do is make stuff up.

TH: And you think that's happened?

AG: Yeah, I do think it's happening. I think there have been examples when they have used fear tactics. The NGOs have quite a privileged position in our society, because many of us, me included, would trust NGOs. They have to be squeaky clean when it comes to how they use evidence and they should never make things up in order to suit their argument.

[The programme then cuts to an open air food market scene]

There are many other examples.

As the website GM Education reported, in 2013 Brian Cox hosted a programme *Science Britannica* which aggressively promoted pro-GM agenda. A review in the London paper the *Metro* noted that when Cox "strayed into morally murky waters" of GM crops and animal testing he was "extraordinarily one-sided – and emotionally manipulative to boot."

A week later on Radio 4's *Farming Today* programme a Syngenta spokesperson was given free rein to conduct what amounted to an advertising slot for GM technology.

In 2011 Sir Paul Nurse, then new President of the Royal Society, devoted part of a *BBC Horizon* programme on the increasing lack of trust in science to puzzling why the British public fails to endorse the majority scientific view that genetic modification is beneficial, useful and necessary. His conclusion was that scientists operate in a world where "point of view rather than peer review holds sway" and that scientists need to go out and talk to the public to reassure them of the rationality of their point of view.

Perhaps unsurprisingly Brian Cox was appointed in 2015 as the Royal Society's Professor for Public Engagement in Science, with a remit to reach out and reassure the public on all things scientific.

SCIENCE AS A SUBSTITUTE FOR THINKING

The media's handling of the genetic modification issues over the years throws up a very serious question: Do we have a media that is capable of handling complex issues?

As journalists struggle to find perspective within the narrow framing of right and wrong they find themselves increasingly adrift and less, rather than more, confident of their abilities to make sense of a story.

We see examples of this struggle everywhere and where GMOs are concerned it is exemplified in the way that new 'breakthroughs' – such as the Bt brinjal featured in the *Panorama* programme – are presented, even misrepresented, devoid of any meaningful historical, social or even scientific context.

Instead of developing depth and perspective or relying upon their own hard won judgement, many journalists now rely on media-friendly science 'experts' to provide 'objectivity'.

But can science provide objectivity? Journalists get into murky waters, for instance when they misunderstand the fluid nature of 'scientific consensus' and conflate some presumed 'consensus' as shorthand for objectivity.

The over-weighting of the scientific perspective in complex issues brings with it several problems. Chief amongst these is the way that it encourages lazy thinking on the part of the media and brings with it a tendency to over-simplify complex issues.

The results of this is lack of balance rather than balance and the creation of an endless, circular, polarised argument between those who are 'for' and those who are 'against.

There are also real problems related to trying to frame complex issues – issues which are social, political, ethical or economic for example, through a purely scientific lens. Doing so is likely to lead to untenable conclusions and the call for solutions that never really look at the root of the problem.

Although science has helped move our society forward in many ways, and will no doubt continue to do so, the 'pro-science' mantra so liberally used to silence all other arguments, and to justify unbalanced journalism, also ignores some facts about science:

- **Science is not homogenous**. The phrases 'pro-science' and 'anti-science' are so often bandied about as if they have some real and obvious meaning. Instead they are good examples of the way that the media, and certain vested interests, simply pick a side and then try to make one-sidedness appear objective. But when people talk about being 'pro-science' or 'anti-science' what does that actually mean? Science can be corrupt, it makes huge mistakes, and it can sometimes provide signposts that take us down the wrong roads.
- **Science is not 'pure'**. We tend to think of science as free from ideology but this has never been the case. When science aims to heal the sick, to feed the hungry, even to improve on nature it is ideologically driven. Neither is science free from subjectivity. The choice of what to study and how to study it and how to report it are entirely subjective. Scientist report through a 'lens' in the same way that journalists do.

- **Science can be corrupted.** In a world where corporate science – science paid for and influenced by corporate money – is becoming the predominant reality, we must approach every scientific conclusion with caution and question who benefits most from the work.
- **Science is not the search for truth**. True science never stops asking questions and therefore never really reaches an ultimate 'truth'. Only those who misuse science for their own gains talk in terms of 'truth'.
- **Science can only tell us so much**. The science of genetics is a good example of, on the one hand, how far we have come but, on the other, how much we simply do not know. When interpreting scientific findings conclusions must be weighed against what it still unknown.

Programmes like *Panorama* get it so wrong because they cling to the notion of science as the best – or only – roadmap through complex issues. The fact is that none of the challenges we face in our society are just 'science issues' and the polarisation which we see in the agricultural GMO debate is a direct result of this kind of reductionist framing.

By allowing room for a broader debate – one that eschews scientific soundbites – the media could actually help move the issue forward. Instead its over-reliance on 'experts' whose credentials and independence are often questionable, narrows and eventually stalls any useful debate.

As the results of our survey showed, however, the bias, the blinders and the narrow thinking which leads to this polarisation is not only accurately perceived, it is actively and righty disdained by the viewing – and license fee paying – public.

> 'It pursued the line that opposition to GMOs is "morally unacceptable" and that those who oppose GMOs are prone to "making things up" instead of relying on facts and sound science. It further insinuated that the concerns and values of those who oppose agricultural GMOs are so fluid and insubstantial that they would abandon them if GM food could be priced cheaply enough.
>
> This programme might be an extreme example but it typifies a narrative that now runs through significant sectors of the UK media, research establishment, government and politicians.'

APPENDIX 1

The comments in depth

Increasingly the public's opposition to GM is being dismissed as: a) the outcome of the activities of a few "luddite" individuals and organisations; or b) due to ignorance, a lack of knowledge and education; or c) irrational fears; or d) a mixture of all these things.

The BBC *Panorama* programme screened on the 8th June 2015 played on all these themes. Its title was unequivocal; G*M Food – Cultivating Fear* leaves no room for doubt and at no point was the programme in danger of being nuanced, contextual or impartial. That says enough.

It pursued the line that opposition to GMOs is "morally unacceptable" and that those who oppose GMOs are prone to "making things up" instead of relying on facts and sound science. It further insinuated that the concerns and values of those who oppose agricultural GMOs are so fluid and insubstantial that they would abandon them if GM food could be priced cheaply enough.

This programme might be an extreme example but it typifies a narrative that now runs through significant sectors of the UK media, research establishment, government and politicians.

There is no doubt that, for the most part, public concerns about genetic modification in food and farming are not being adequately and respectfully represented by any of these bodies. In many cases they are being summarily dismissed.

But far from uninformed or fear driven the comments collected as part of our survey show that citizen opposition or questioning of GM is knowledgeable, intelligent and nuanced.

At a time when the lack of citizen engagement in public and political life is widely regarded to be at a worryingly low level, the ready dismissal of citizens' concerns about GM shames the BBC and UK media.

One of the purposes of this survey was to provide space where the public could comment on media coverage in general and BBC coverage in particular of the issue of genetic modification in food and farming and not feel dismissed.

The survey was not necessarily quick to complete but in spite of this fact a little over half (506) of the survey respondents left comments on either Q2 or Q6. In total 755 comments were made - 330 for Q2 and 425 for Q6.

Nearly half, of those who left comments did so in both sections. The examples below give a good flavour of those comments.

QUESTION 2

DO YOU FEEL THERE IS A GENERAL PRO-GMO BIAS IN THE BRITISH MEDIA?

Respondents left a voluminous number of considered responses:

"I think there are some outlets who are against it but there seems to have been a definite pro-GM swing in the last couple of years."

“BBC, clearly emphasising pro GMO points of view rather than discussing the cons and therefore giving us all the information necessary to make an informed decision. This is very irresponsible, given its huge potential as an informing force in people's lives.”

“Especially the BBC but also the Guardian. The Mail seems to be a lone voice for the "majority" against GM.”

“Stopped watching Countryfile in disgust at their pro agri-business agenda.”

Some comments went further and raised questions about a decline in journalistic standards

“The problem is the 'elephant in the room issue'. It is not what is in the program it is the lack of real investigative journalism.”

“I find most BBC programmes, including the news, very pro-GM.”
“BBC News reports are very superficial and don't even attempt to independently investigate the downsides of GM, such as: potential health issues, increased use of pesticides, contamination of conventional/organic crops, pesticide resistance, whether advertised yields are achieved.”

“There is no real reporting going on. It's more stenographic reporting than true journalism.”

There were plenty of comments specifically on the *Panorama* programme:

“I didn't think there was [media bias]. But having seen the recent Panorama about GMOs, I was shocked and angry at how biased they were.”

“The recent Panorama programme gave a surprisingly biased pro-GM viewpoint, without giving other 'side' of the argument a fair representation.”

“The Panorama program on June 8 2015 was especially egregious, though typical of the bias.”

“The BBC Panorama programme (08/06/15) was so biased, it might as well have shown Monsanto reps handing over brown envelopes of cash to the producers at the end.”

“Tonight's BBC Panorama was a prime example of misinformation, obfuscation and pro-GMO propaganda.”

“Panorama documentary seemed biased and portrayed anti GM parties as lunatic fringe.”

QUESTION 6

IN YOUR OPINION DOES THE BBC ASK THE RIGHT QUESTIONS ABOUT GMOS?

Those who felt that the BBC did not ask the right questions about GMOS were invited to suggest what questions should be asked.

A significant number of the total comments from those who were supportive of GMOs (27%) focused more on attacking the credibility of those who are unsupportive of GMOs rather than the subject of genetically modified farming and food itself:

"They should be asking why anybody cares what these know-nothing GM campaigners think"

"Should ask opponents what their sources of funding are."

"Why is the anti-GM lobby so influential in the debate, when the science is almost entirely against them?"
"Why anti GMO groups persist in misrepresentation of the scientific consensus on safety"

"Why is the anti-GMO disinformation brigade more concerned about targeted genetic manipulation than it is about the random genetic change that happens all the time, including in organic farming? Why are new organic products not subjected to the same testing and safety as products from targeted transgenic manipulation?"

"They should also ask if people have interests in organic farming, organic food sales, fundraising on fear, and book sales."

"They should be asking about the ulterior motives of anti-GM campaigners and why they rely on unfounded propaganda to spread fear. They should ask why science is regulated so much but NGOs are allowed to spout any old rhetoric without backing up their claims with fact."

This group also made broader and thoughtful comments in the spirit of genuine enquiry. They display a degree of thought and insight lacking from much media coverage of the issue and certainly not in evidence in the *Panorama* programme.

"The claims made by the pro-GM lobby are rarely scrutinised: e.g. yield increase, pesticide reduction, environmental impact. Can complex issues such as blindness, cancer, poverty, hunger be solved with solutions as simple as golden rice or purple tomatoes? What alternative biotechnologies are available to address the same issues?"

"Is GM being misused for commercial gain at the expense of sustainability and a healthy environment?"

"What implications does each modification have... i.e. not just talking about 'GM' as a whole all the time."

"Affiliations and funding sources of pro- and anti-GM speakers, better explanation of conventional breeding as well as GM."

"What more research and regulation will be needed to ensure we understand the social and environmental implications of such a powerful new technology?"

"Why the public are anti GM? What are the fears? Interrogate the environmental and health risks more intelligently. The programme was quite one sided for the BBC, it came across like a pro GM film. Put the positives but balance up with the genuine concerns out there. Why not have a pro GM turned anti GM person to put the opposing view?"

"Include more about political control of GMO technology and examine safety issues in more detail" "Is GM technology inseparable from corporate agribusiness? Is it difficult to publish data that contradicts the status quo in peer-reviewed science? Would it be possible for Greenpeace and FOTE to re-examine the literature and change their views? Is GM technology capable of delivering traits like heat, drought and salinity tolerance? Does the successful adoption of GM technology by smallholders properly reflect the technology (i.e. what are the unrelated environmental and socioeconomic causes that also play a role)? Is viewing the role of GM technology in agriculture as a devious dichotomy of 'Pro' and 'Anti' helpful?"

"Have commercial GM crops increased yield? Do commercial GM crops increase or decrease herbicide use? Why do family farmers and smallholders oppose GM crops?"

"What organic alternatives are available? How much is spent on GM research compared to organic research? Could more research in organic bring better results?

"Questions about safety and health in people and animals in countries where there is wide spread use of GM, particularly the use of glycophosphates, soil run off spread of superweeds that can only be controlled by more toxic chemicals etc."

Those who are not supportive of GMOs offered a voluminous number of comments demonstrating a real breadth of knowledge of how complex and nuanced the GMO issue is and how many areas of our lives it intersects with.

These responses underscore how erroneous is the picture painted in the BBC *Panorama* programme and the UK media in general of an uninformed and fear-driven group of individuals who do not understand the science or the larger cultural issues.

We have broken the comments down into broad headings:

GENERAL COMMENTS

"Is it necessary - can we achieve desired ends by other means? Has it been proved safe in laboratory tests over multiple generations? What influence is the biotech industry exerting behind the scenes? Why is public money being spent on this corporate profit driven industry and not on more benign methods of enhancing food production?"

"Perhaps it should be asking why there is still such a polarised debate. It should give more focus to the long term health and environmental concerns that may be irreversible - being mindful of the precautionary principle."

"Contextual questions, revealing the enabling socio-economic and socio-political environment it needs, questions should not be centered on technologies but on problem-solving and dealing with system questions re what kind of agriculture do we want in face of massive environmental degradation and resource depletion, how to we want to feed ourselves and treat our environment, what are the competing paradigms and narratives and what are their underlying world views and economic systems."
"For a justification of the wholly dubious claim that a starving world cannot survive without these mutant foods when, 1) By every sane measure, we have massive surpluses for which there is simply not the will to distribute 2) In the developed world we literally throw away more than half of what we produce 3) We squander resources over-producing meat which encourages not just wasteful but harmful over -"Look in depth at countries that have GMO crops, the effects on the communities."

"Look in depth at countries that have GMO crops, the effects on the communities."

"It should be addressing the social and economic side far more. The political, industry, media and mainstream science establishment seems to be having a big push to promote GM and win over the public on the science aspects of it, accusing those who are against GM of all sorts of things from being anti-science to wanting children to die. There is a loud (industry-led) voice shouting that GM could save all the starving people right now and that it's only the misguided anti-science middle class lefty greens in rich countries that are preventing GM saving children, saving the environment etc. But this voice completely ignores the huge numbers of smallholder farmers and consumers worldwide who don't want GM (and in many countries the smallholder farmers ARE the majority of consumers) - the food sovereignty movement/La Via Campesina in particular. Also it glosses over the issues of control and ownership of seeds and how this can push people into poverty, the effects of industrial monocultural production on people's diets and access to food and land...there is so much serious injustice on the social, political and economic side of the GM debate that is barely touched on by the BBC and rest of the media (and also often by campaigners - this is an angle where, even if the scientific argument looks to be winning over the public, serious concerns should be being voiced). GM hasn't been developed as a humanitarian gesture, it is intended to generate big profits."

"Who funds the scientists you interview/research you cite? Why are you not challenging the idea that we need to produce MORE food when so much goes to waste? Why isn't a wider spectrum of scientists interviewed? Why aren't alternative farming methods explored?"

"1) If it's so safe and good, why is there such concern? 2) Listen to an unfiltered and better represented opposing view 3) Notwithstanding safety, GM is fundamentally a violation/corruption of Nature that has sustained mankind since time began - not always perfect, or best managed - but undeniable!"

"1. Where are the long term safety studies? 2. Who stands to gain most from the introduction of GM crops? etc..."

HEALTH & SAFETY ISSUES

"They should really be focussing on, and questioning just how potentially damaging the GMOs and associated pesticides are gradually being proved to be to the health of consumers. They should be asking why this is necessary. They should be asking the farmers their opinions on GMOs and how detrimental this practise is proving to be to their lives and farms. They should be asking questions about the longevity of farming the GMOs and usage of harmful pesticides, and how these will impact our children and future generations. They should also be recognising that the initial idea that the huge Biotech companies put forward, of how GMOs will solve World hunger, is just a ridiculous notion. We already grow enough food for the population of the world, so they should be looking at how to solve the problem of distributing it around the world, to solve the issue."
"Look in depth at countries that have GMO crops, the effects on the communities."

"BBC never takes health concerns seriously or investigates them in any depth. Also the notion of GMOs feeding the world is a distraction from real issues about the failure of our food system."
"Look in depth at countries that have GMO crops, the effects on the communities."

"How GM, roundup, chemicals spraying etc. are effecting communities in countries like Argentina, the effect on cotton farmers in India (basically a more balanced view on the global effects), how Roundup affects human health, how GM has worked in the past (Golden Rice etc.) and exactly how much money GM science is costing compared to organic farming- a system that already works."

ALTERNATIVES TO GMOS

"Why is research in untoward side effects not followed up - starting with stomach linings of rats in Aberdeen on GMO potatoes already ?/ 20 years ago?"

"Look in depth at countries that have GMO crops, the effects on the communities."

"I want to hear more about traditional forms of land stewardship and farming. And more about how chemical corporations are influencing media, education, and policy. I want to hear a more balanced analysis on the pro and con of chemical use on the environment. I do not want to be told I am a 'flat earther-climate denier' because I question GMOs. I am a registered nurse who holds two degrees. I am not a climate denier. The BBC (and national geographic too!) need to be less biased towards GMOs and fairer to the audience that questions the rampant push for GMO foods."

"Look in depth at countries that have GMO crops, the effects on the communities."

"Is co-existence with Non GMO crops possible? Are ecosystems affected? Do they endanger the world's biodiversity and seed stock? Do we know how they will affect our health? Who funds and benefits from the sale and propagation of GM technology? What are the alternatives? What are the scientific objections to GMOs? How have GMOs impacted our health in the last 20 years? How they impacted the farm ecosystem where they have been planted? Have they had a negative impact on the soil? The list goes on..."

FARMING, FOOD SECURITY AND BIODIVERSITY

"The cost of removing invasive species currently in UK is millions what if GM needed Clearing up who pays??? A bond of Billions should be put down!"

"Look in depth at countries that have GMO crops, the effects on the communities."

"Exactly how rigorous is the evidence of environmental and human safety? Who (else) benefits from this proposal? How will this change food systems, their resilience, and farmers' ways of farming in the mid- to long-term?"

"Questions around biodiversity are so rarely asked - and biodiversity is also rarely acknowledged as a legitimate area of scientific concern. Questions around environmental impact, levels of pesticide/herbicide use, the fact that plants adapt to herbicides and animals adapt to pesticides in the same way bacteria are becoming immune to antibiotics. These are all scientific concerns.

"What has been the increase in herbicide use since the introduction of GMO crops? What has been the increase in insecticide use since the introduction of GMO crops, considering the use of neonicotinoid seeds coatings and Bt toxins which are incorporated into the plants and can't be washed off? How many people can be fed by the current level of production of food globally and what is the current population? What percentage of GMO crops is actually used in human food? What percentage of GMO crops is used for biofuel, industrial use and for animal feed? Have there been human health trials? Human trials for allergenicity? What are the USDA statistics on yields showing for GMO vs non GMO? What did the most recent geological survey find related to levels of glyphosate in air, rain, groundwater and soil? Does it make sense to risk human health and spray a probable human carcinogen on food? What are the industry independent study findings related to animal health trials on GMO foods and the environmental impacts? The main GM crops are corn, canola (rapeseed), sugar beet and soy. They are all designed to be pesticide tolerant. They all end up in highly processed nutrient-devoid food and animal feed (mostly factory farms) - is it progress to produce an abundance of cheap, food-like products or is it progress to produce quality, nutrient-dense whole foods?"

"How do GMO plants fare in regards to adapting to changing growing conditions as a result of climate change, compare with open pollinated varieties."

"Is GMO farming just a way of turning our head from the root of the food security problems such as no access to land for small commercial and subsistence farmers and bad farming such as seed and pesticide monopolies and soil, and crop and biodiversity eroding practise?"

SCIENCE & REGULATION

""How were GMOs illegally granted the status of substantial equivalence to non-GMO foods; why are independent scientists who find harm with GMOs blacked out in the media, and discredited by pro-GMO media and scientists?"

"The complexity both of genes in a genome & of species in the wider ecology are not at all understood. Those involved in genetic transference, do so for commercial & amoral interests. It is important for independent reporting to take a wider and a sceptical view."

"Is GM crop technology sound in the light of modern understanding of molecular genetics (gene organisation & control)? What are the real socioeconomic and political causes of world hunger? Are safety tests required by regulators adequate to ensure safe lifelong consumption?"

"What is the scientifically demonstrated evidence that GM crops are safe for food and for the environment? (Answer: the only such evidence comes from industry studies, which are designed and interpreted to find no fault. They are usually 'commercially confidential', not open to public scrutiny. But there is much evidence of harm, from studies by independent scientists and farmers. U.S. farmers can tell you about superweeds they cannot control, and insect resistance defeating insect-resistant crops."

"How does the current practice of creating genetically engineered plants address genetic science developed in the last decade? When GMOs were first developed, geneticists believed that the genome was "one gene, one protein" -- we now know that to be false. The last two decades of research in genetics has revealed extreme complexities -- how are the biotech companies ensuring those complexities are taken into account (or not)?"

ECONOMICS

"Should be questioning the economics - who gains financially from GMOs and patented breeding more widely, and what are the impacts for self-sufficiency of small farmers and growers."

"Ownership comes with technology and this creates power relations. How do the powerful impose their will? How do the powerless have their voices heard? Do GMOs meet the challenges raised by farmers or are farmers consumers of whatever agribusiness produces? What negative impacts will GM technology and related power relations have on resource poor African smallholders? Impact on poor subsistence farmers of not being allowed to save seed ; impact of reliance on glyphosate for GM crop to work; impact on wild parent plants of cross fertilisation with GM e.g. Mexico; impact on any farmers not wanting GM contamination of their crops and example of GM industry threatening farmers who saved their own crop seed which through no fault if their own had

been cross pollinated by a GM crop; what will be the impact on soil organisms; what will be impact on invertebrates of GM pollen; what epidemiology has been done to ensure no long term / cumulative impacts to humans or other wildlife in the food chain - I could go on! Why is the body of evidence against GM being totally ignored?"

"The GMO business model, the risks of globalising the food industry, contamination risks, & alternatives to GMO."

These comments testify to the fact that people who oppose or have questions about GM technology are not uneducated, uninformed or mindless. The dismissal of their views by publically funded organisations like the BBC, the research establishment and the government is unacceptable. These views might be inconvenient and challenging but they are valid and those expressing them have a right to be heard. To belittle, to patronise and deny them is poor journalism, poor communication, and poor politics and ultimately undermines the effective working of democratic society.

APPENDIX 2

How the BBC deals with complaints

The letter below was sent out, pro-forma, to those who complained about the BBC *Panorama* programme *GM Food – Cultivating Fear*, regardless of the content of their complaints.

From: "bbc_complaints_website@bbc.co.uk" <bbc_complaints_website@bbc.co.uk
Subject: BBC Complaints - Case Number CAS-[redacted]
Date: 24 June 2015 11:39:29 BST
To: [redacted]

Dear [redacted]

Thank you for your correspondence regarding the recent Panorama 'GM Food – Cultivating Fear'.

The aim of the programme, as framed by the title and the opening/closing commentary, was to report on a new generation of genetically modified crops being cultivated that is rekindling the debate around genetically modified organisms and will challenge consumers to think again about questions of trust and safety with GM food.

This new generation of crops is being developed to take chemicals out of agriculture, and one of the UK's leading plant scientists told us this would "work with the grain of nature". As the programme stated, this is a step change from the way in which GM technology was used two decades ago when it was first introduced. Tom Heap explored this when he explained that the majority of GM crops around the world have been developed to be resistant to glyphosate herbicides. The script explained that this "crop and weed killer combination" locked farmers into buying one with the other, and said US agribusiness giant Monsanto's involvement prompted accusations of "creating a chemical-based farming model that harmed wildlife". In addition, Helen Browning from the Soil Association explained that GM technology was being used in the "wrong way" and that current GM crops did not fit into a vision she or her organisation wanted for the countryside.

During the programme, Tom Heap challenged proponents of Bt brinjal and the Bangladeshi agriculture minister by asking if they were "in the pocket" of Monsanto, or were part of a charm offensive which would allow for a takeover of farming by GM companies.

The programme said an overwhelming majority of scientists now say that, when properly controlled, GM crops pose no more harm than crops which are grown using traditional methods. This has clearly convinced two people who previously publicly opposed GMOs to speak out and say that we should be growing GM crops. It also convinced a recent House of Commons Science and Technology Committee, comprised of MPs from three political parties, which conducted research into GMOs for a number of months in 2014 and 2015. The committee concluded that opposition to GM in Europe was driven by a value-based approach rather than scientific evidence.

The programme attempted to capture a snapshot of that debate and the new developments and arguments across the divide. While it cannot please everyone, we felt the two examples of new GM crops we showed raised legitimate questions about opposition to GM food.

Thanks again for contacting us.

Kind Regards

BBC Complaints
www.bbc.co.uk/complaints

Beyond false promises. Beyond failed technology.
Beyond a corporate-controlled food system.
Beyond environmental harm. Beyond gambling with our health.

Does the BBC help cultivate a pro-GMO agenda in the UK?
Results of an open survey June 8-13, 2015

Author: Pat Thomas
Additional information: Lawrence Woodward

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Find out more about Beyond GM and its campaigns at:
www.beyond-gm.org
www.gmfreeme.org
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