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GMFuturos Policy Brief

A New Approach to Governing GM Crops?
Global lessons for the UK and EU

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Key recommendations for policy

Good governance of GM should:

- Take into account public values and concerns and not be viewed solely as an issue of risk and biosafety.
- Recognise that a plant and its genome cannot be separated from the agricultural practices of farming communities not least because food is central to people's identity and culture.
- Be tailored to specific social and cultural values and needs within individual countries.
- Appreciate and engage with the concerns of farmers, consumers and other stakeholders potentially impacted by GM technologies.

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Unless we examine why GM crops have not been universally accepted as a public good, we will fail to understand the conditions under which 'GM crops can help to feed the world'.

The rise of genetically modified (GM) crops has been dramatic, but their uptake has not been the smooth nor universal transition predicted by its advocates. Controversy is present even in countries, such as the US, where approvals have been impressively rapid. All too commonly the regulation of GM crops has been challenged as inadequate, even biased.

While public and regulatory debates about GM crops have been grid-locked in many parts of the world including the UK and EU, there are lessons to be learned from the global 'rising powers' who have experienced similar challenges in governing GM, within their own cultural contexts. This research, undertaken by Durham University, in partnership with local research teams in Mexico, Brazil and India, and funded by The John Templeton Foundation under the banner 'Can GM crops help to feed the world?', reveals a diverse variety of factors that influence decisions surrounding the adoption of GM technologies, many of them cross-cultural and of global significance.

Public concerns about GM technologies across Mexico, India and Brazil

- Lack of transparency and little to no public involvement in the processes of governance, agriculture and manufacture of GM foods.
- Lack of planning for conserving biodiversity when introducing GM crops into the ecosystem potentially threatens indigenous crops and therefore people's livelihoods, namely those of small farmers.
- GM crops have been introduced in a top-down manner without public consultation as to whether they were needed or desired. In this sense GM is seen to primarily benefit the producer, not the consumer.
- Regulatory science not attending to public concerns and values on food, agriculture and society.

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Current approaches to the regulation and governance of GM crops have been dominated by risk-based assessments on human health and the environment, which even if conducted properly, fail to address the deeper questions surrounding why GMOs have been rejected and criticised in many parts of the world. To understand why involves engaging with the issue within the terms of an inclusive public debate.

Key research findings

Across Brazil, India and Mexico, the technical regulatory bodies charged with approvals for the release of GM crops had not provided 'authoritative governance'. Across all three jurisdictions, decisions had been rejected by significant bodies of stakeholders, including scientists and farmers, as well as judges in court, as biased, unlawful, unconstitutional and lacking in transparency.

Factors for explaining why the controversy surrounding GM crops had taken different forms in different national settings included:

- The perceived authority and trustworthiness of the regulatory agencies.
- The cultural resonance of the crop in question.
- The level of intensity of protest movements.
- The extent to which the GM crop can become represented as a symbol of wider struggle.
- The degree of sustained effort by institutional actors to engage the public.

Why people reject GM

People in Brazil rejected GM soya because it became a symbol of a wider struggle against unequal land ownership, US hegemony and neoliberalism. GM cotton in India was rejected because cotton is a highly symbolic crop, signifying, following Gandhi, strength and self-sufficiency for the poor. Maize is highly culturally resonant in Mexico, and protests against GM maize came to signify the defence of Mexican culture and identity in the face of the unwanted form of imposed globalisation. Any introduction of GM maize would most likely be perceived as a threat to traditional, sustainable and inclusive practices, and to a national sense of identity.

There is a divide between those who represent GM crops as part of a gradual and continuous path of science working towards agricultural improve-

The role of social science in the GM debate

- The social sciences have a valuable contribution to make in understanding the social, cultural, political and economic contexts of GM technologies.
- Social science disciplines are important for mediating discussions about GM that involve a wide variety of different political, religious, scientific and gender-specific views.
- How people understand and perceive GM has not so much to do with how much knowledge they have on the subject, as much as their cultural worldview or outlook.
- Social scientists provide the methods for engaging with communities in a meaningful way, helping articulate the texture of public concerns and questions, this puts them in an ideal position to provide useful advice for policymakers in governing GM.
- The social sciences provide the kind of language through which public stakeholders in GM can engage with GM science.

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ment (mostly representatives from seed companies and some natural scientists), and those who see GM crops as a rupture or break with conventional breeding practices (mostly smallholder farmers, environmental and consumer NGOs, women's associations and indigenous groups). For the latter, GM crops tend to be perceived as engendering further dependency on global agrochemical and seed companies, as presenting novel and unknown risks and as disrupting or destroying traditional farming practices and lifestyles. There is near consensus from the latter constituency that decision-making thus far has lacked transparency and participation.

Lack of transparency

Our research shows that lay people are able and willing to engage in meaningful debate on issues surrounding GM crops. However, we found little public enthusiasm for GM crops and foods and a hardening of response as the discussions developed. People adopted negative views partly because they felt they had not been consulted, partly because GM foods were perceived to be unnecessary and potentially harmful, and partly because regulatory agencies and seed companies were not trusted. A significant factor in this mistrust, was the control over science which such actors were perceived to be imposing, thus threatening its independence while claiming to base their decisions on 'sound science'.

Further, the research culture in all three countries lacked 'reflexivity' and 'inclusiveness'. Research laboratories appeared to lack the capacity and motivation to understand why GM crops have become controversial in each country. Even though the labs operated with a strategic mission, what constituted the national or public interest tended to be taken as a given, with little deliberation with external actors.

Governance

Generally, the attempt to develop a new kind of conversation on GM crops and their governance was welcomed across Brazil, India and Mexico, with a surprising degree of consensus between stakeholders. In all three countries, stakeholders tended to prioritise the call for novel forms of public engagement, for the production of high quality and reliable information, for educational establishments to foster the development of critical citizens and for governments to govern in the public interest.

Key questions for governing GM:

- What kinds of science do we need to provide a genuine, informed democratic discussion about GM?
- What kinds of capacities and sensitivities do we need to deliberate properly about this issue when we consider how the public thinks about GMOs?
- What kinds of futures do farmers and consumers envisage with respect to food and agriculture for themselves and their families?
- How can public discussion about GM be better informed by 'independent' scientific evidence when both sides of the debate appeal to science to justify their views?

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In light of these findings, forms of engaging the public in the governance of GM technologies in the UK and EU are not only desirable **but necessary for creating a democratic governance framework for adequately addressing regulation and research on GM crops in society**. Opinions about GM crops will vary cross-culturally, but this means they should be included rather than ignored within the GM debate. There are a wide variety of interrelated issues that underlie GM, such as how people value the production and consumption of food, and the appropriate role of science.

Not all of the ideas expressed by participants about GM were negative, but participants were critical of the fact they had no say in governing technologies that could affect not only their own future but that of future generations. In all three countries the great majority of participants agreed on the need to re-open a public debate on GM crops and foods: on its regulation and oversight, on the need for assessment of social, economic and food security implications and not only risk-biosafety aspects, on the need for concerted action to communicate reliable information, and for proper channels of citizen participation in strategic decisions.

Reopening the GM debate

While these views need to be understood within their individual cultural contexts, there is little question that a similar model could and should be developed in the UK and EU for reopening the debate on GM technologies. As in the case of upstream forms of engagement and responsible innovation, other scientific innovations such as synthetic biology, geoengineering and nanotechnology have already benefited from responsible innovation frameworks that seek to recognise, engage with and anticipate the complexities and uncertainties of science; that open up such visions, impacts and questioning to broader deliberation; that encourage reflection on the purposes of, motivations for and different framings of the issue; and that are able to respond to new knowledge as it emerges to influence the direction and trajectory of the research and innovation process itself.

Field research methods

Fieldwork was undertaken in three of the global 'rising powers':
Mexico, Brazil and India. The research included:

- A review of the debate over GM crops in each country.
- A nine week ethnography with farmers and other actors in a rural setting.
- A set of interviews and a questionnaire with stakeholders.
- A series of focus groups with mostly urban consumers.
- A participant observation study in a public research laboratory.

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