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FOOD ETHICS
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THE INDEPENDENT COUNCIL FOR ETHICAL
STANDARDS IN FOOD AND AGRICULTURE

GM crops for global justice?

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Summary and recommendations

This report challenges the dominant view of the scientific establishment that the future of agriculture lies with genetic modification technologies. Europeans who reject genetically modified (GM) crops are being told that their worries are irrational and that they are denying the potential benefits of these crops to hungry people in poor countries. Whilst sweeping claims that GM crops will 'feed the world' are now made less frequently than they were in the 1990s, an influential set of scientists and development professionals maintains that specific GM crops could contribute to food security. Indeed, they argue that there is a moral case for greater public sector investment in GM research because, without it, there would be little incentive for scientists to develop 'pro-poor' GM technology. They criticise blanket policy responses to GM crops, such as the moratorium that the European Union (EU) put in place in 1999, arguing that the pros and cons of GM crops must be judged case by case.

We believe that, although there are some substantial differences between GM crops, a general moratorium on their use in the EU is not only prudent but an ethical requirement. Governments of wealthy countries certainly have a duty to invest more in building international food security and food justice, but research funding should not be earmarked for GM

crop development. Instead, it should be directed at projects that involve small-scale farmers and other stakeholders, from the planning phase right through to implementation. We also identify reasons why technological 'solutions' to food insecurity are often favoured in science and policy at the expense of alternatives that are potentially both more effective and more just. Our report is not a field study intended to determine, once and for all, whether GM crops are good or bad for food security. It aims to be a constructive critique of assumptions taken for granted by many scientists, policy-makers and business people.

We begin with a brief overview of current arguments promoting GM crops for food security, in which we identify commonly held, but questionable, assumptions about: (1) the evaluation of new technologies by regulators; (2) the research process; and (3) the ownership of research and technology. The three main sections of the report analyse each of these areas in turn, drawing on the example of 'Golden Rice', a strain genetically altered to contain extra β -carotene.

Regulation

Proponents of GM crops argue that EU regulations should be eased in the interests of food security in poor countries. They claim that the EU rules are

based on a triple abuse of the precautionary principle that: requires the proponents of GM technology to prove ‘zero risk’, which is technically impossible; ignores the different risks and potential benefits of specific GM crops, by imposing a temporary ban on all GM crop approvals; and underplays the risks of not using GM crops. The proponents insist that GM crops should be assessed case by case.

In contrast, we argue that there are compelling practical reasons for a robust interpretation of the precautionary principle, which would justify a moratorium under specific circumstances. The precautionary principle deliberately shifts the burden of proof onto the proponents of a potentially harmful course of action. The standard of evidence that they must provide in order to prove safety depends on the social acceptability of the risks involved. If the acceptability of a risk common to different GM crops was low, yet the relevant field of risk assessment was characterised by high levels of uncertainty, then a moratorium would be the logical regulatory outcome.

We believe that a moratorium on GM crop approvals in the EU is an ethical requirement, though not simply for the reason just described. Risk acceptability is as important in precautionary regulation as the level of risk, yet the prevailing ‘risk management’ approach to regulation takes the acceptability of some potential harms for granted. For instance, regulation is currently not equipped to evaluate social or economic harms that might arise from a GM crop. Until publicly trusted mechanisms are put in place to make explicit these inevitable judgements about risk acceptability, it is essential to maintain a moratorium on approvals of GM crops because of the evident disagreement over the acceptability of their associated risks.

We recommend that:

- **The UK government and the European Commission research and develop mechanisms for evaluating the social acceptability of risks, that are widely trusted by members of the public including scientists.**
- **The UK government and the European Commission press for the concept of risk acceptability to be pivotal in international agreements that have a precautionary element.**
- **Until trusted mechanisms for evaluating risk acceptability are in place, governments place moratoria on highly controversial technologies such as GM crops.**

Research

The proponents of GM crops for food security are not just against a moratorium – they also recommend governments to invest greater resources in GM-related research. They argue that the potential benefits of GM crops will otherwise pass by the poorest people in society, unfairly benefiting the rich.

We agree that governments should invest more in projects to promote food security. However, in earmarking these additional resources for GM-related research, the proponents endorse a model of food insecurity that favours technological solutions and denies the people affected by new technology a genuine choice over its direction and use.

The criteria against which potential solutions to food insecurity are evaluated affect how the problem is understood. By taking cost-effectiveness for granted as the primary measure for comparing food security strategies, the GM proponents, and some of their critics, define food security in terms of a narrow range of quantifiable variables. Technologies designed to meet the specified criteria may therefore perform well on paper even though in practice, because food insecurity is highly complex, they may be less effective than multidimensional strategies based on already-available knowledge and tools.

Whilst proponents argue that farmers and consumers should be allowed to choose whether or not to use GM crops, and accept that end-users should participate in research, the limits that they place on stakeholder involvement deny these groups a genuine say. Early-stage research investment decisions taken in private, which depend on judgements about the interests and needs of different stakeholders, can lock subsequent decision-makers into the chosen course of action. If research sponsors are to meet their self-avowed responsibilities to enhance choice for end-users, it is crucial that the concerns of those stakeholders are built into research at the earliest possible stage.

We recommend that:

- **Policy approaches to alleviating hidden hunger and food insecurity involve the communities affected in defining the problem and in evaluating potential solutions.**
- **Food security strategies be assessed for their beneficial effect on the whole diet, taking into account the social dimensions of food insecurity.**
- **Food justice and food security at all levels be valued in policy as goals in themselves.**

- **The UK government and the European Commission invest greater resources in food security research that is driven by the demands of communities affected by food insecurity.**
- **Research be funded into effective means of incorporating non-specialists and stakeholders into high-level strategic science planning, ensuring that these means are also acceptable to the scientific community.**
- **A greater proportion of research funding is invested in cross-disciplinary programmes, in order to encourage broader approaches to addressing food security problems.**

Ownership

Private firms dominate agricultural research, particularly in biotechnology, where the private sector accounts for around 80% of spending world-wide. This skewed public-private ratio has affected the direction of research, and the kinds of technology made available. Even many proponents of GM technology are concerned by this private sector dominance, arguing that the result will be GM crops produced for the benefit of rich farmers and consumers who can afford to pay a premium, rather than for the poor and indebted people who are commonly food insecure.

In particular, these GM proponents are concerned that privately-owned patents on basic GM-related research tools will put GM crops beyond the means of poor farmers or even gridlock the research process entirely. Several high-profile initiatives are now under way that attempt to redress this situation by brokering partnerships between public sector researchers and private patent holders.

Patenting is a means of privatising knowledge that would otherwise be publicly available, on the assumption that this process will stimulate innovation and benefit the public in the long run. Over the past 20 years, patenting has been encouraged in the public sector to generate research revenue in an economic climate of retrenchment. We argue that the deal between inventors and society has been overdrawn in agriculture, and it should be renegotiated. Agricultural research should be exempt from patenting and similar forms of 'intellectual property' (IP) protection, nationally and internationally, wherever

it is shown to limit the provision of public goods. The public sector should not be required to buy back from private owners a monopoly privilege granted in the public interest.

Effective food security promotion relies on genuine public goods that can be shared and copied freely. If GM crops cannot be developed without patenting or public-private partnerships (PPPs), then that is less a reason to endorse such institutions as an indictment of the pro-poor potential of GM technology.

We recommend that:

- **IP protection applied to plants or animals should not allow the holder to prevent users from re-using or developing their product.**
- **Non-exclusionary incentives for agricultural innovation, such as cash rewards or prizes, are introduced instead of IP.**
- **International IP rules be balanced by introducing comparable anti-trust and liability rules, and by enforcing other agreements on plant biodiversity and genetic resources.**
- **The rights of farmers to save, share and adapt seed, and to have affordable access to technology that promotes food security, overrule the privileges granted to inventors in national and international law.**
- **Because 'intellectual property rights' are actually intellectually-based monopoly privileges, they should be named and treated accordingly.**
- **Co-operation and community involvement should come before competitiveness as the catch-phrases for public sector research in the EU.**
- **The European Commission dedicate a portion of its research budget to fund Public Good Projects, which require that research is non-commercial and spins-off into non-profit entities rather than firms.**
- **PPPs are only pursued in exceptional circumstances, and are not viewed as necessary to food security.**
- **There is wider reform of the public sector research system, including additional state funding, to ensure that the provision of genuine public goods is its primary mission.**