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Global Challenges and GM Crops

FSA Board Meeting

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The Problem

Population growth and alleviating poverty

- World: 6 to 9 billion by 2050, African population from ~1 to 2 billion by 2050 (UN)
- Developing countries. Households with incomes > £8,000 per year will rise from: 352 million in 2000 to 2.1 billion by 2030 (World Bank)

Predictions

- Energy demand projected to increase by over 50% by 2030 (*International Energy Agency - IEA*)
- Food Demand projected to increase by approx. 50% by 2030 (*International Food Policy Research Institute - IFPRI*)

Constraints

- Land use change should not compromise climate change agenda
- Climate change models predict rainfall reduction in key areas, particularly Africa
- Fertiliser, fuel and pesticide prices high

Overall requirements

- More agricultural production on less land, with less water and with prudent use of fertilizers and pesticides
- **What is the role of GM in meeting these requirements?**



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Biotechnology can help provide solutions

- GM may also provide future solutions, notably for improved drought and saline tolerance; and resistance to pests and disease
- Genomics to provide targeted and predictive non-GM plant breeding (e.g. for yield, sustainability, quality)
- Work on non-GM crop improvement e.g. increased disease resistance in oil seed, cassava (*BBSRC*), salt-resistant durum wheat (*CSIRO*)





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The future for GM and food generally?

Next Steps

- The **Royal Society** Report will look at GM as part of a set of possible technologies to enhance food production. It will provide an opportunity for informed debate. Cross-Government approach will be needed to follow up the report. FSA will be well placed to help.
- The future for food and farming is clearly uncertain. The **Food and Farming Foresight** Project will examine this issue, looking long-term into the future