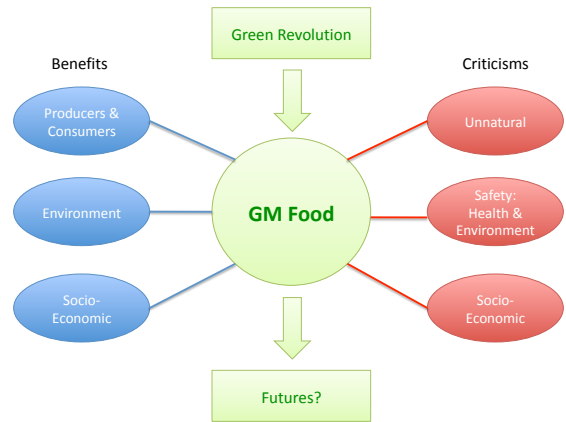


# GM Foods: Crisis

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## GM Crisis

- 2008 – Food Riots
  - Increases food prices: Wheat up 77%, Rice up 141%, etc.
  - Changes in demand, not supply: increased demand from China and India eating more grain and meat due to increase wealth
  - Prices affect least well off the most: \$1 a day.

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## What are the short-term and long-term effects?

- Malnutrition and health crises?
- Further increase socio-economic divides?
- Increase supply to meet demand?
- Reduce resistance to GM crops?
- Move local farming toward industrialization?

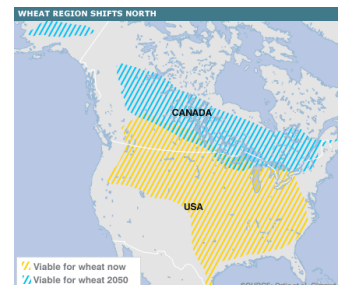
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## GM Futures 1

- 2020 After the introduction of GM crops specialized for growth in local conditions almost all Asian, African and European countries have adopted some form of GM agriculture.
- 2030 Increases in profit give rise to large agribusiness farms at the expense of almost all local farmers
- 2020 After major crop pests develop complete resistance to Bt toxin and roundup, a second generation of GM crop technology is introduced.
- 2040 Resistance again develops, but no new solutions are found.
- 2045 U.S. consumers are unwilling to accept crops treated with chemical pesticides. Crop yields decline 35% over pre-GM averages.

## GM Futures 2

- Global warming shifts the range of major crop plants around the world.
- GM rice and sorghum save many farmers in Africa and parts of Asia, but no solution is found for corn or wheat.
- Wheat is now grown in most of Canada and Siberia.



[http://news.bbc.co.uk/2/hi/uk\\_news/england/devon/5118860.stm](http://news.bbc.co.uk/2/hi/uk_news/england/devon/5118860.stm)  
<http://news.bbc.co.uk/2/hi/science/nature/6200114.stm>

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## GM Futures

- How likely do you think these events are?
- Do the benefits outweigh the risks?

## GM Futures 3

- 2020 Oral versions of the cholera vaccine are produced in peanuts
- 2025 Anti-nematode drugs are made in sorghum.
- 2035 Cleanup after the accidental release of an experimental anti-cancer vaccine into wild plants costs 100 billion dollars and requires killing all of the plants in a 50 mi<sup>2</sup> in Georgia.

## GM Futures

- How likely do you think these events are?
- Do the benefits outweigh the risks?
- If you had \$1000 to invest in a company producing GM or to donate to an anti-GM organization, which would you do?

## Endangered Species

- 2070 Woolly mammoths and saber-tooth tigers have been re-created from whole genome sequences extracted from bones.
- They join tigers, lions, polar bears, rhinos, and gorillas as animals found only in zoos.