

A faint, light-colored world map is visible in the background of the slide, showing the outlines of continents and countries.

GM Food Safety: Policy and Perceptions

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Delhi, October 14, 2015

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Information and Context

Detective Gregory: "Is there any other point to which you would wish to draw my attention?"

Sherlock Holmes: "To the curious incident of the dog in the night-time."

Detective Gregory: "The dog did nothing in the night-time."

Sherlock Holmes: "That was the curious incident."

Information

This is what was known:

The dog did nothing

Context

This is what is usual:

*Dogs rarely do nothing in the night:
they bark, growl, whine*

Solving the problem

*The dog did nothing because it
recognized the intruder – his owner*

GMOs why all the fuss?

- Europe's food culture: reluctance to change
- Purchasing power of its citizens
- Numerous food & feed safety crises in the 1990s (BSE) during the arrival of GMOs
- NGOs exploited food safety concerns
- Missteps on biotech communications
- Sensationalist media fueled the debate
- Legislation delay & politicians ran for cover

Prince's attack leaves Blair facing a credibility crisis

Health & Fitness

What you must know about GM

THE SEEDS OF DECEIT

Sean Poulter
Senior Affairs Correspondent

For over four weeks the

THE PRIME MONSTER



Fury as Blair says: I eat Frankenstein food and it's safe

'Blair is wrong on GM food'

Is your restaurant serving GM food?



Where the fast food chains stand

MUTANT CROPS COULD KILL YOU

USIVE: Secret warning by Blair scientists exposes deadly risk

CHARLES: MY FEARS OVER THE SAFETY OF GM FOODS



Government stifled report on GM risk
GENE LAB TOOK FOOD GIANT'S CASH GIFT
GM food row splits Labour



As demands for clear labelling are ignored, we answer the most crucial GM questions
by Alice Hart-Davis

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GM FOOD

GM FOOD

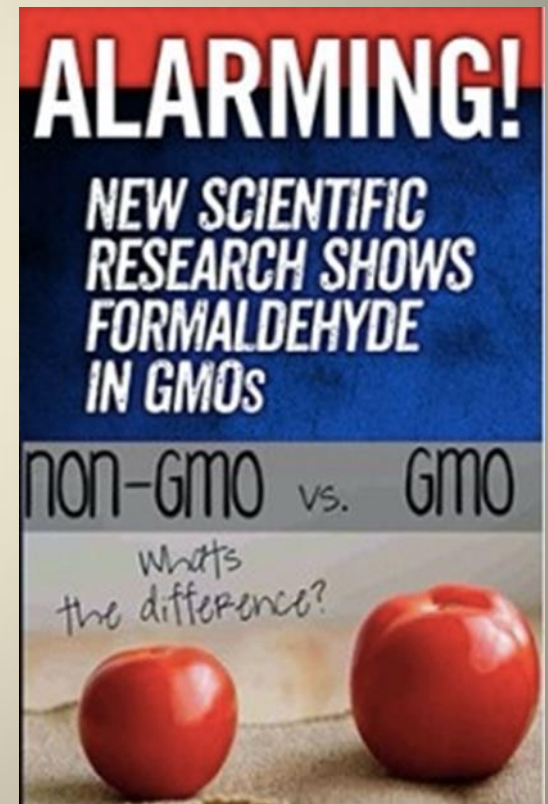
GM FOOD

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GM FOOD

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Members of the Greens and European Free Alliance group of the European Parliament protest against GM crops at the European Parliament



Greenpeace activists distribute samples of transgenic rice as part of a protest against the authorization to grow transgenic rice during a meeting of the National Biosecurity Technical Commission (CYNBIO) at the Science and Technology Ministry in Brasilia.



Thirty-five tons of corn put by Greenpeace activists at Mexico City's Zocalo Square as a protest against the sowing of transgenic corn, form a map of Mexico

Istanbul airport 2011



Welcome signs in English and Turkish greet passengers at Istanbul airport

NGO Funding

- Funding from subscriptions; collections and private foundations
 - ✓ Smaller NGOs funded by larger, well-funded groups e.g. Greenpeace
- Research projects
- Public funding

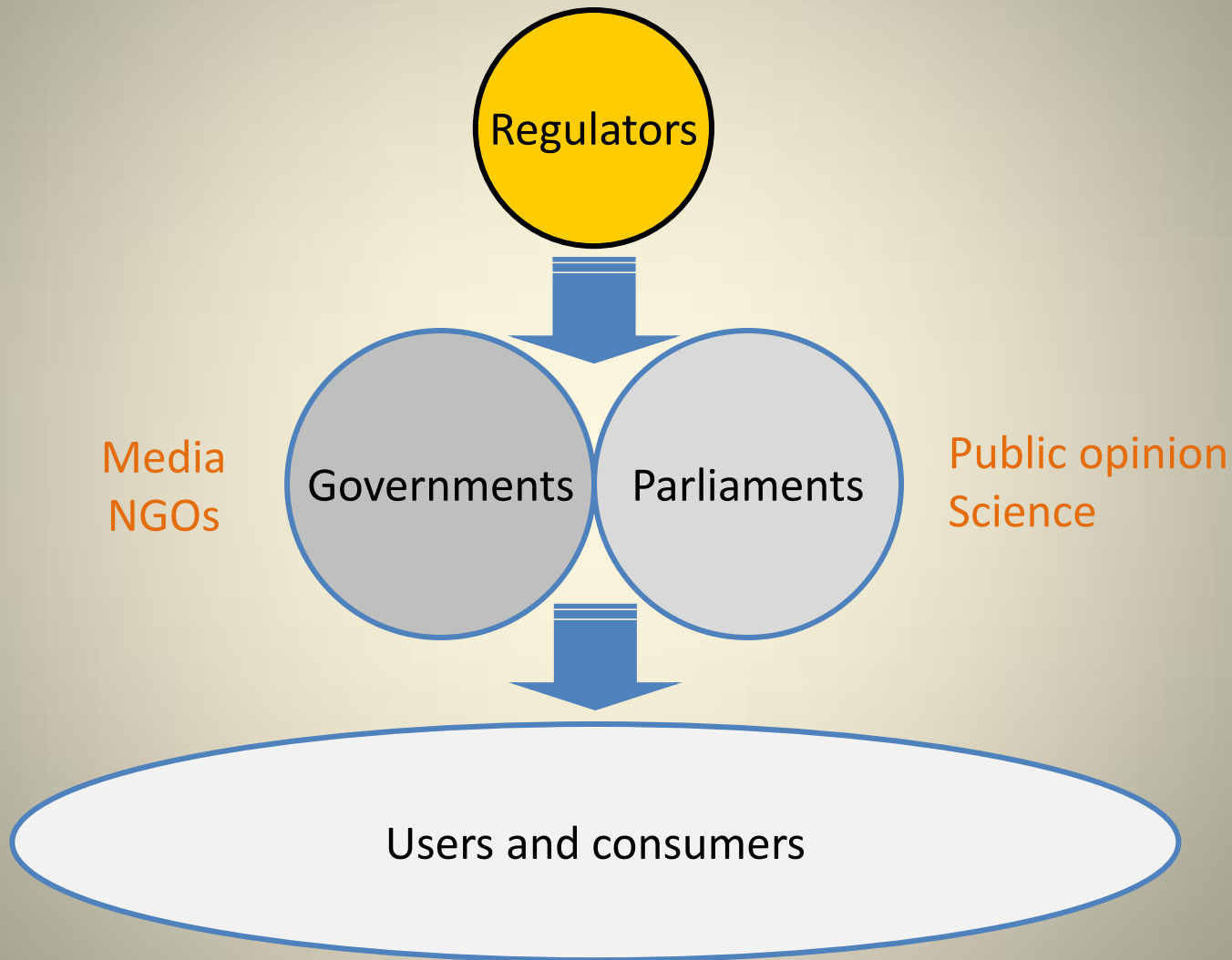


Greenpeace International
annual budget
is \$350 million +

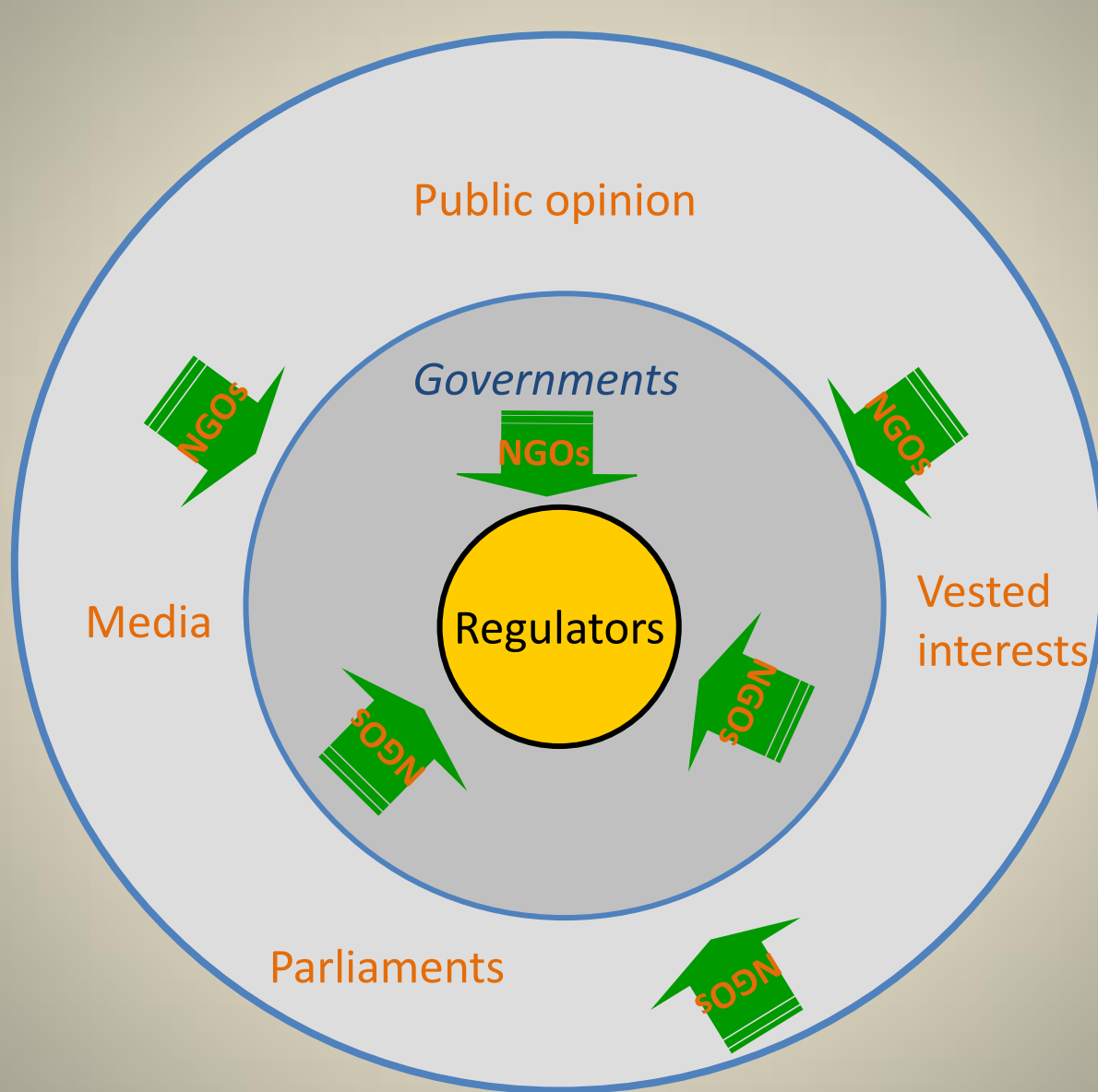


NGO Operational Grants 2014:
The Commission has selected 28 NGOs
for €9 million funding

How the world perceives regulators



How NGOs perceive regulators



How NGOs work the regulatory process

- Block & delay – precautionary system is ideal NGO environment
 - NGOs know the process, timelines, key people
 - Focus on political ‘masters’ of regulators
 - Often seek direct negotiations with regulators
 - Play regulatory systems off against each other
 - Also target national regulators and market ‘gatekeepers’
 - Glossy pseudo-scientific reports – questionable peer-reviews, but impresses politicians and impedes process
 - ‘Throw sand in the machine’ - constant queries, objections, ‘new’ data’
- And if all else fails then



Greenpeace invades European Food Safety Authority (EFSA) Parma, Italy: March 2014

“EFSA and the EU Commission act much more like agents of biotech companies than like the institutions they are supposed to be....”

Luca Tomatore, activist Global Project



“Rather than defending EFSA the EU authorities forced it to allow a range of non-scientist stakeholders acceptable to the anti-GM lobbyists to be involved in its work”.

John Davison, Research Director of INRA Versailles from 1992 to 2009 & Marcel Kuntz is Research Director at the French Centre National de la Recherche Scientifique (CNRS) in the Laboratoire de Physiologie Cellulaire Végétale .

The global dimension

- Countries often look to the EU for guidance or information on GM legislation
- NGOs exploit campaigns are targeted at regional concerns / opportunities
- 18 million farmers adopt the technology because it works
- Regulators are often working against a negative background – media, consumers



- Continued strong government support
- Huge importer of GM soy and recently U.S. corn
- Many trials on GM crops and large-scale trials of GM rice
- Approval system is slow and unpredictable



- Many field trials esp. corn
- Procedures still ill-defined, duplicative
- Increasing interest from farmers & scientists in outreach programs
- Potential for trade disruption with no GM procedures in place



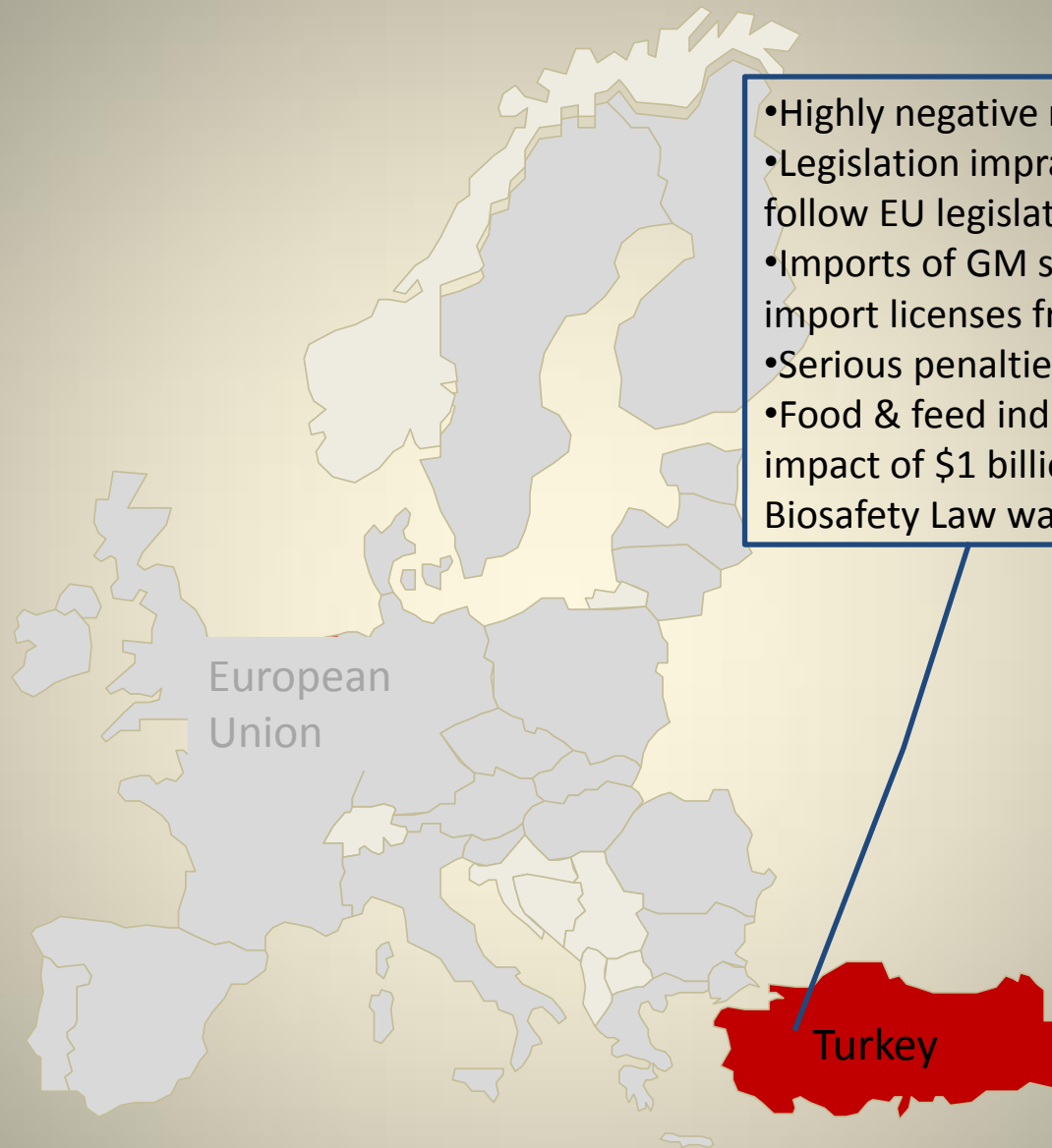
- Over-cautions & onerous
- System often unwieldy with too many agencies
- Imports significant GM
- Labeling initiatives



- Strong science based system
- Soundly regulated
- Imports GM soy
- Sells GM papaya
- Less opposition



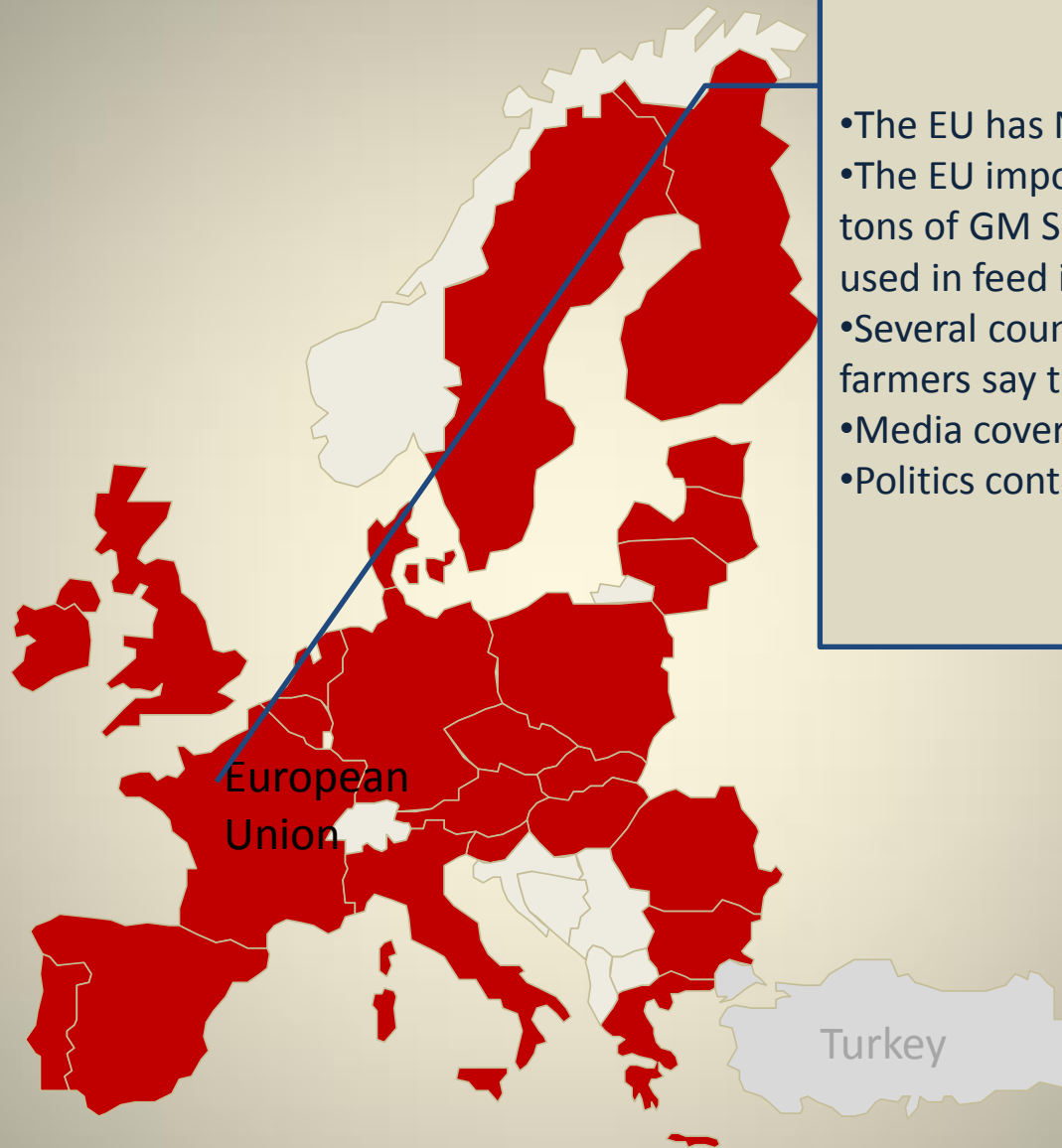
- Only country in the world to use mutual recognition of approvals
- Strong govnt. support
- Farmer enthusiastic



- Highly negative media and NGO attack
- Legislation impractical and failed to follow EU legislation sufficiently
- Imports of GM soy followed request for import licenses from feed industry
- Serious penalties for non-compliance
- Food & feed industry suffered negative impact of \$1 billion 18 months after the Biosafety Law was implemented

European
Union

Turkey



- The EU has NOT banned GMOs
- The EU imports at least 30 million tons of GM Soy every year & it is used in feed in every EU country
- Several countries grow Bt corn but farmers say they are losing out
- Media coverage more balanced
- Politics continues to effect the issue

The scientific consensus on GM



“The main conclusion to be drawn from the efforts of more than 130 research projects, covering a period of more than 25 years of research and involving more than 500 independent research groups, is that biotechnology, and in particular GMOs, are not per se more risky than e.g. conventional plant breeding technologies.”

Some voices

“Scientific opinions have confirmed time and again to the Commission that the cultivation of approved GM products is of no scientific concern.”

German Chancellor Angela Merkel

“I think it is time to look again at the whole issue for GM food. We need to be open to arguments from science.”

UK Prime Minister David Cameron

“Biotechnology, in the form of GM crops, must be part of the solution.”

Former Spanish Agriculture Minister Miguel Arias Cañete

Britons must swallow fear of GM crops to feed world

Drought-resistant varieties will support glo population as climate warms, says report

By Louise Gray
Environment Correspondent

THE British public must overcome its fear of "Frankenstein foods" and eat GM crops, scientists say, to ensure enough food to feed the world's growing population, a government report will say today.

Despite widespread popular concern about the health and environmental impact of GM products, scientists increasingly contend that they are essential to global food supply for the future.

2 trillion

People containing GM ingredients that have been eaten worldwide in the last 12 years

and farming report was commissioned by the Department of Business to assess the ways in which the world can feed its growing population.

It is feared that the growth of the world population to 9 billion by 2050 will mean that people, coupled with climate change, will face food shortages and shortages.

Sir John Beddington, the Government's chief scientific adviser, said in his report that GM will have to be used to feed the population.

Previous examples of genetic modification include crops that grow in water or drought conditions.

"There will be no silver bullet, but

Britons must learn to swallow GM foods for sake of hungry world

By Louise Gray
Environment Correspondent

THE country must move on from labelling genetically modified crops as "Frankenstein foods" and accept that they are necessary to feed the world's growing population, a report will suggest today.

Sir John Beddington, the Government's chief scientific adviser, said it would be difficult to justify not using GM technology to ease shortages

GM crops may save world, says study

By Louise Gray, Environment Editor

FOOD prices could double unless farmers make greater use of genetically modified

climate change and environmental degradation. The authors of the report say that, for the first time in 100 years, food prices are

falling, was commissioned by the Government to assess the impact of food prices on the world as prices rise.

Sir John Beddington, the Government's chief scientific adviser, said the report's findings show that GM crops, chosen to improve yields, are worth the genetic engineering and the risk and maintenance costs. "I excluded a priori on grounds, though there is

a need to respect the views of 'puffing'.

But Kirsten Chatwin, a spokeswoman for the Earth's Food Campaign, says that the report's findings are not a silver bullet. "The report's hope on GM technology and science has moved on," she says. "The report's findings have delivered a message that GM crops are not just a disaster for the world and farmers. Feeding the world without trashing it seems a small feat to me. I would love to see GM crops used to feed the world and not to feed the world's poor."



2.4 billion extra people, no more land: how will we feed the world in 2050?

'Need' for GM crops

Genetically modified and organic crops are both needed, the report says - the challenge of global food security is so vast that GM and even cloned food must not be ruled out on ethical grounds. "Any claims that a single new technology is a panacea are foolish."

New technologies, such as drought- or salt-tolerant crops, could be valuable for the poorest, but farmers must be involved in decisions and protected from commercial monopolies.

Using local, renewable resources means elements of organic agriculture could benefit production, the report says. But costs are higher and yields lower, meaning organic farming cannot be the main approach to tackling the food crisis. **Damian Carrington**

AS SCIENCE BOSS BACKS FRANKENSTEIN FOODS

World can't afford to ban GM crops

THEY are branded "Frankenstein foods" by their opponents.

But the Government's chief scientific adviser, Sir John Beddington, says that GM crops are not just a disaster for the world and farmers. Feeding the world without trashing it seems a small feat to me. I would love to see GM crops used to feed the world and not to feed the world's poor.

Here the Sun's gardening guru argues why GM is good.

● **PEOPLE in Australia** have spent every winter of rain of wheat and sugar crops. In Pakistan, there's also been devastation by locusts.

In Russia, drought has caused its famine via cereal exports. And parts of India are suffering from drought and famine.

It's global warming predictions are to be believed, all this will only get worse. So we have to get better crops from a faster pace of food and grain plants to grow what is food.

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By PETER SEABROOK
Gardening Editor

and less ready of farmers. ● **Three billion** people are to cope with extreme weather. ● **Food** is scarce and prices are rising. ● **The need for crops** is growing. ● **The need for crops** is growing. ● **The need for crops** is growing.

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GM crops key to human survival, says top scientist

Government expert warns of 'perfect storm' of crises leading to world shortages and riots

by Robin McKie
Science Editor

Moving to block cultivation of genetically modified crops in the developing world can no longer be tolerated on ethical or moral grounds, the government's chief scientist, Sir John Beddington, has warned. He said the world faced "a perfect storm" of crises leading to world shortages and riots.

was starting to have serious environmental impacts on the planet, flooding coastal plains, spreading deserts and rising temperatures. "We could cut down tropical rain forests and plant crops on the savannah to grow from food, but that would leave us even more vulnerable to the impact of global warming and climate change. We needed these regions to help absorb carbon dioxide



A fruit stall in Tegucigalpa, Honduras, where the government is trying to impose a price

Food prices set to double 'if we don't use GM crops'

By John Ingham
Government Editor

reports suggest that GM crops in the world's poorest countries could be a disaster for the world's poor.

British scientists rejected GM crops in the 1980s, but now scientists are taking them off the shelves, and the world's poorest countries are taking them off the shelves.

The Food and Agriculture Organization (FAO) report said that by 2050 the world's population will be 9 billion, and the world's poorest countries will be 4 billion.

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FOOD PRICES SET TO DOUBLE 'IF WE DON'T USE GM CROPS'



January 25, 2011
By John Ingham

FOOD prices could soar by 50 per cent within 40 years if we do not use genetically modified crops, a Government report warned yesterday.

British consumers rejected GM foods in the 1990s, forcing supermarkets to take them off the shelves, amid fears about their impact on health and the environment. But Government chief scientist, Professor Sir John Beddington, said biotechnology – such as GM crops – is “extremely important” and that no option should be closed off

MUTANT CROPS COULD KILL YOU

EXCLUSIVE: Secret warning by Blair's own scientists exposes deadly risks

February 18, 1999

Conclusions

- Sound science must be the guiding principle for decisions on GM approvals of crops for food and feed
- Ensure policies and positions are coherent and sustainable
- Consumers want to know their food is safe: their concerns are important but are rarely based on science
- No recorded evidence of any harm to human health from GM crops in nearly twenty years of use
- Food security needs many solutions: Genetically modified crops is just one solution
- Consider information and context together and communicate in a “language” that can be understood

A warning from Norman Borlaug

“If the naysayers do manage to stop agricultural biotechnology, they might actually precipitate the famines and the crisis of global biodiversity they have been predicting for nearly 40 years.”



Norman Borlaug, father of the Green Revolution & Nobel Peace Prize recipient

A light beige world map is centered on the slide, showing the outlines of continents and countries. A semi-transparent rectangular box is overlaid on the map, centered horizontally and vertically, containing the text "THANK YOU".

THANK YOU