A world map is visible in the background, rendered in a light, semi-transparent style. The map shows the outlines of continents and countries. The title text is overlaid on a semi-transparent rectangular box in the upper center of the map.

GM Food Safety: Policy and Perceptions

David Green

Greenhouse Communications, LLC

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

PICK A PRIZE
HAVE YOU WON TODAY?
PAGE 40

Prince's attack leaves Blair facing a credibility crisis

Health & Fitness

What you must know about GM

THE SEEDS OF DECEIT

Sean Poulter
Senior Main 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'

GM FOOD: THE SHORTS GROW

Is your restaurant serving GM food?



Where the fast food chains stand

CHARLES: MY FEARS OVER THE SAFETY OF GM FOODS



MUTANT CROPS COULD KILL YOU

Government stifled report on GM risk

GM food row splits Labour

GENE LAB TOOK FOOD GIANT'S CASH GIFT

USIVE: Secret warning by Blair scientists exposes deadly risk



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

ING

GM FOOD



**SAY NO TO
GENETICALLY
ENGINEERED
FOODS!
CHOOSE ORGANIC**




ALARMING!

**NEW SCIENTIFIC
RESEARCH SHOWS
FORMALDEHYDE
IN GMOs**

non-GMO vs. GMO

What's
the difference?






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

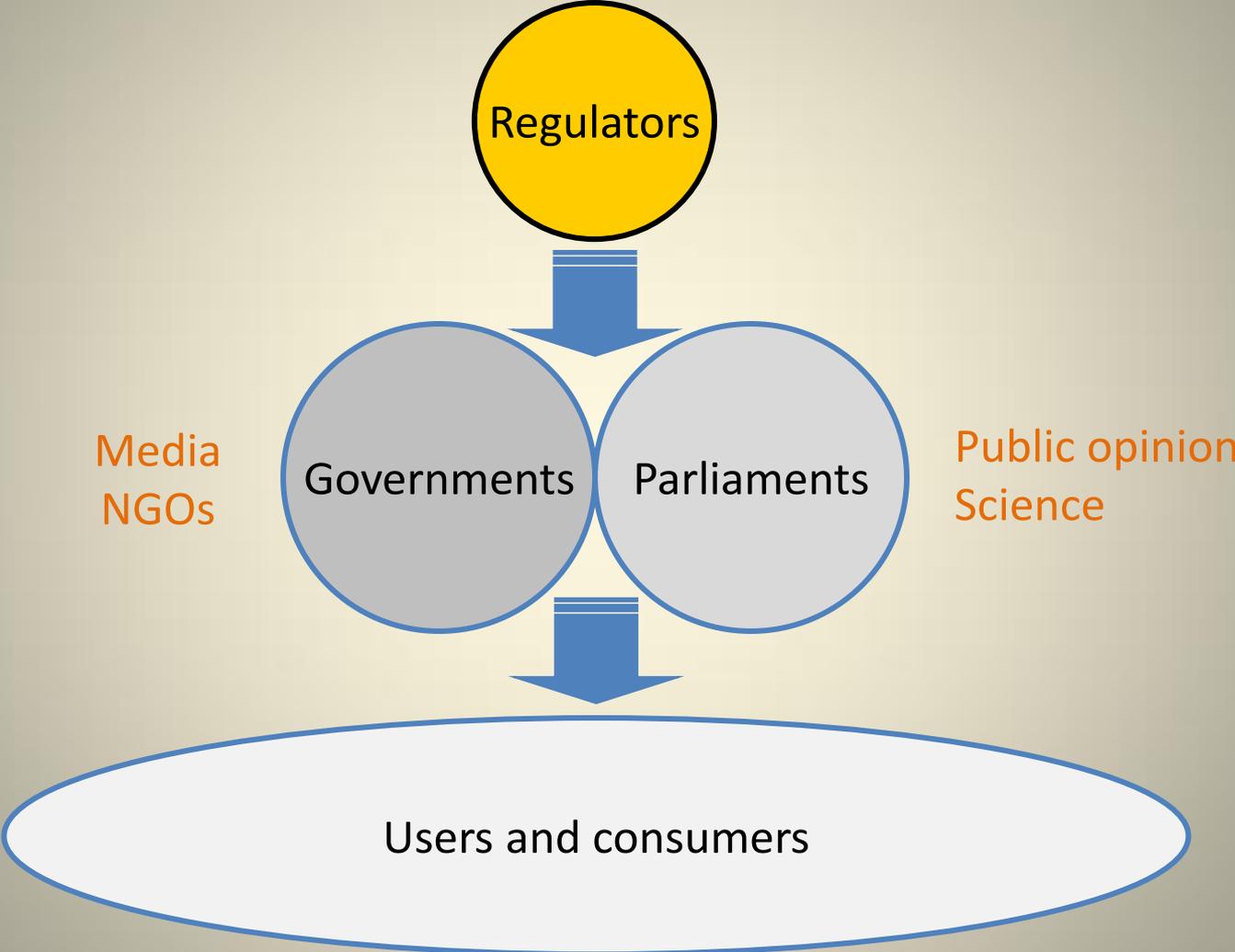


Greenpeace International
annual budget
is \$350 million +

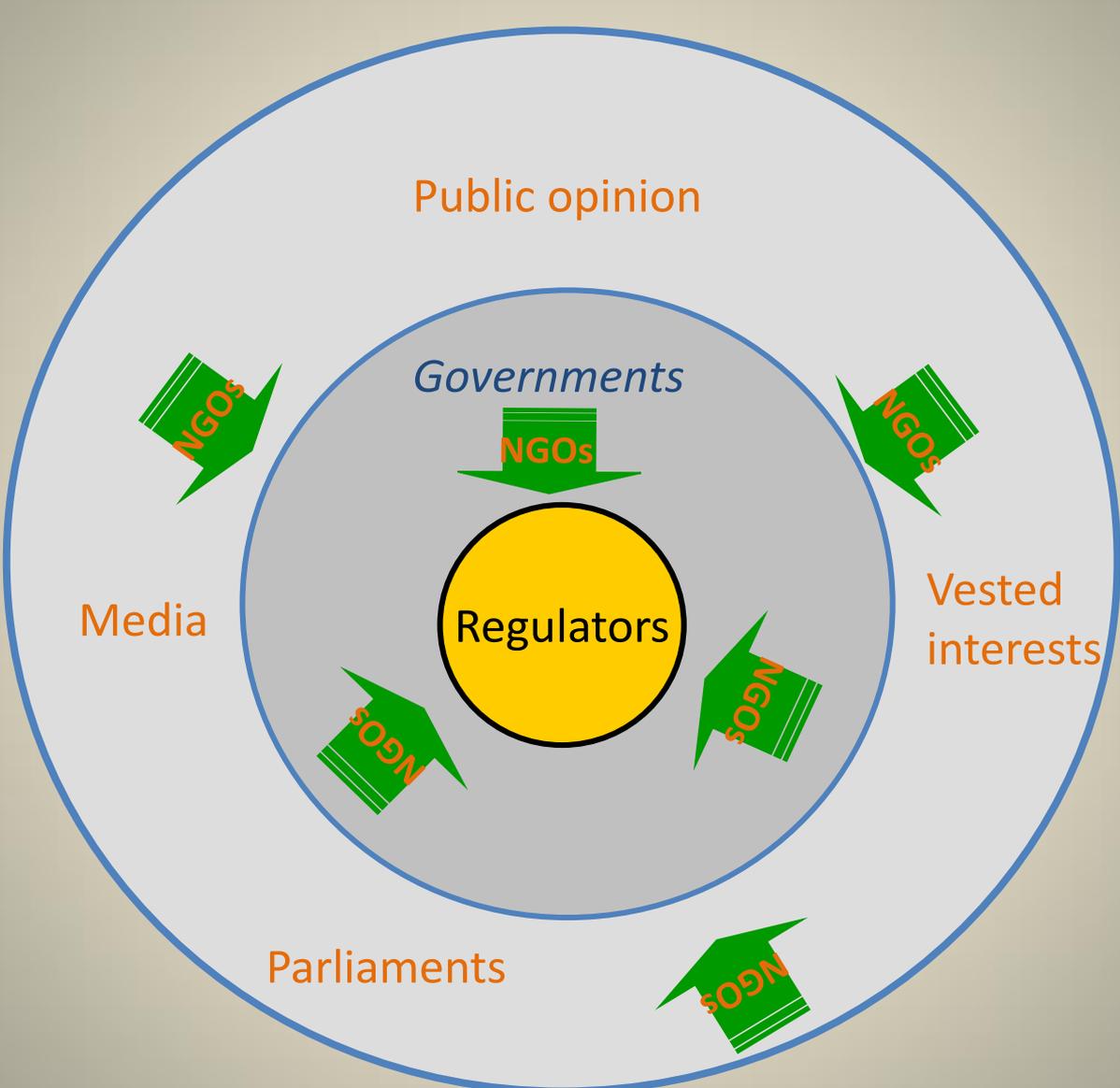


NGO Operational Grants 2014:
The Commission has selected 28 NGOs
for €9 million funding

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



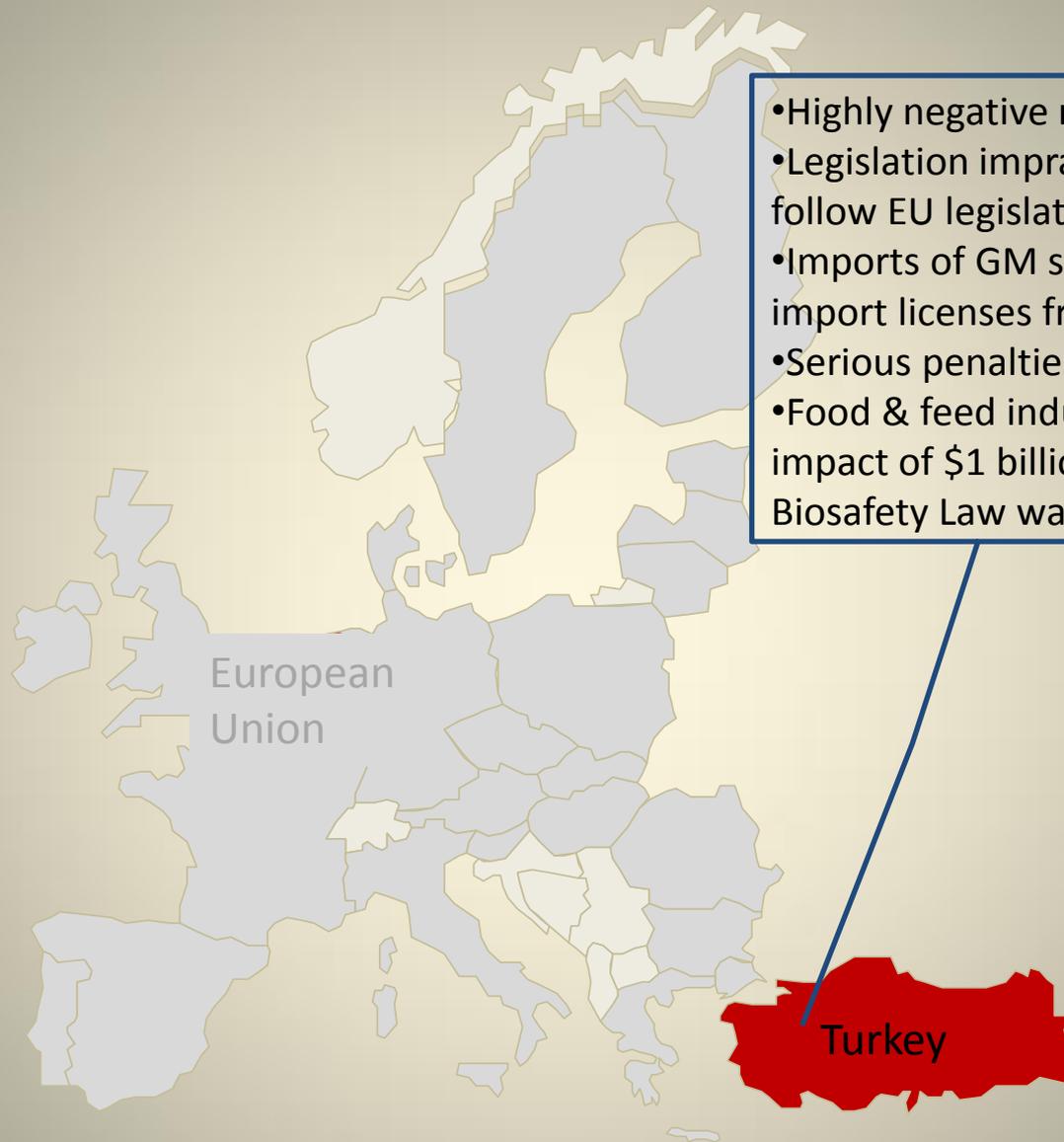
- Over-cautions & onerous
- System often unwieldy with too many agencies
- Imports significant GM
- Labeling initiatives



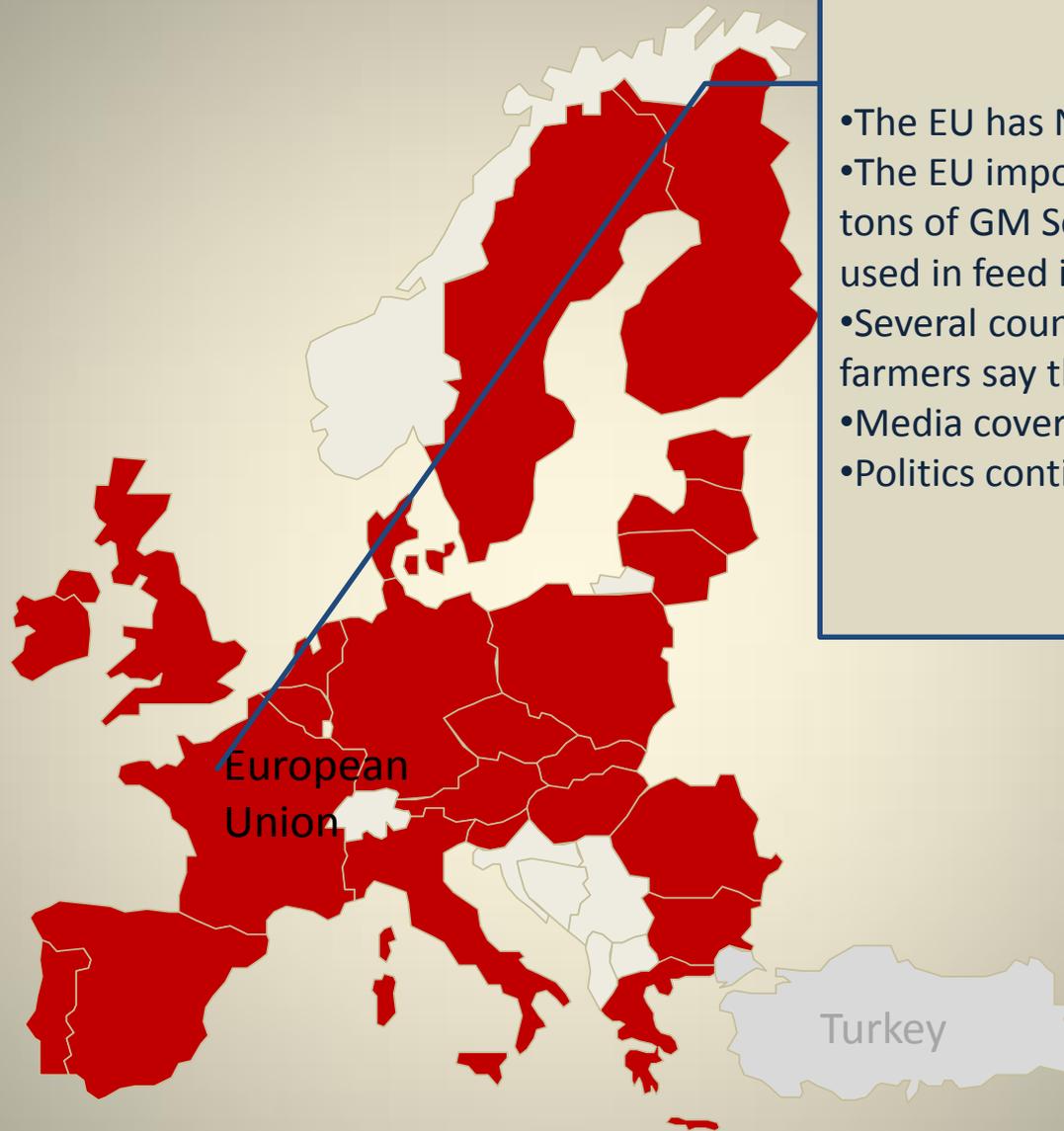
- Strong science based system
- Soundly regulated
- Imports GM soy
- Sells GM papaya
- Less opposition



- 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



- 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 global population as climate warms, says report

By Louise Gray
Environment Correspondent

THE British public must overcome fear of "Frankenstein foods" and eat food genetically modified crops are necessary to feed the world's growing population, a government report will say today.

People widespread popular concern about the health and environmental impact of GM products, scientists increasingly convinced that they are essential to global food security.

2 trillion

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

and farming report now estimates by the Department of Business in the ways in which the world can feed a world of 2 billion people.

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 price rises.

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

Specific examples of genetic modification include crops that can grow in a water or drought conditions.

"There will be an silver bullet, but it will be a Frankenstein food."

GM crops may save world, says study

By Louise Gray, Environment Editor

FOOD prices could double unless farmers make greater use of genetically modified crops, says a report.

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

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

rising, was counteracted by the Government's recent ban on food crops around the world as prices rise.

Sir John Beddington, the Government's chief scientific adviser, said the report says that the world's population will reach 9 billion by 2050, and that the world's land area will be 1.5 billion hectares less than it is today. The report says that the world's food production will have to increase by 70 per cent to feed the world's population. It says that the world's food production will have to increase by 70 per cent to feed the world's population. It says that the world's food production will have to increase by 70 per cent to feed the world's population.

a need to respect the views of people, take a contrary view, the report's specific

But Kirsten Charlton-Kachigian, the author of the report, says that the report's specific view is that the world's food production will have to increase by 70 per cent to feed the world's population. It says that the world's food production will have to increase by 70 per cent to feed the world's population. It says that the world's food production will have to increase by 70 per cent to feed the world's population.



of remotely using new GM. Just to the world and saline supplies, show

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

'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 today said genetically modified crops are vital to feed the world's booming population and avert hunger.

By PETER SEABROOK
Government Editor

and less sound of farmers. Three British, thicker states to cope with extreme weather. British farmers and people will be the need for crops. The need to keep food prices low will be a major issue. It's not just about the price of food, it's about the price of food. It's not just about the price of food, it's about the price of food. It's not just about the price of food, it's about the price of food.

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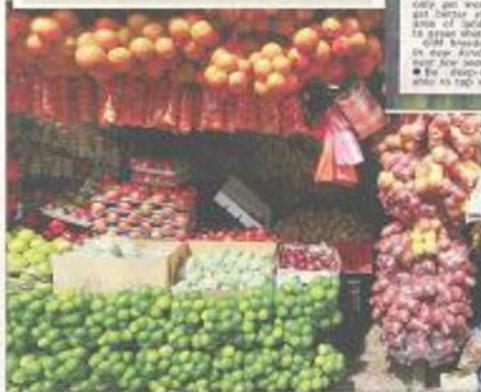
GM crops key to human survival, says top scientist

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

by Robin McKie
Science Editor

Moves 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 food "perfect

was starting to have serious environmental impacts as the planet, flooding coastal plains, spreading deserts and raising temperatures. "We could cut down tropical rain forest and plant crops on the savannah to grow more food, but that would leave us even more vulnerable to the impact of global warming and climate change. We need 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'



Shoppers face health problems

Food prices could rise to 50 per cent within 10 years if we do not use genetically modified crops, a Government report warned yesterday. It said the world's population will reach 9 billion by 2050, and that the world's land area will be 1.5 billion hectares less than it is today. The report says that the world's food production will have to increase by 70 per cent to feed the world's population. It says that the world's food production will have to increase by 70 per cent to feed the world's population.

By John Hughes
Government Editor

reports suggest that GM crops in the world's poorest countries. British scientists rejected GM crops in the 1980s, but now agree to take them off the shelves, says Sir John Beddington, the Government's chief scientist. Professor Sir John Beddington, the Government's chief scientist, said the world's food production will have to increase by 70 per cent to feed the world's population. It says that the world's food production will have to increase by 70 per cent to feed the world's population.

of a significant increase in food prices in the next 10 to 20 years. This risk is made it demands urgent action on all components of the food system - crops, transport and making the food system work more efficiently. He said the current food system is unsustainable, with rising land and food prices while falling to feed the world. But he accepted that there is "no silver bullet". He said "We have got to improve the way we grow food. We need to get a lot of different views. Collaborative action to speed the development of GM crops which are designed to make grain more

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 world map is shown in a light, semi-transparent style against a dark background. The map covers the entire globe, with continents and country borders visible. A semi-transparent horizontal bar is overlaid across the center of the map, containing the text 'THANK YOU'.

THANK YOU