

The GM Science Review

GM Debate
Natural History Museum, London
28th October 2003



*Professor Howard Dalton FRS
Chief Scientific Adviser to Defra*

Background and aims of the Review

- Commissioned by Margaret Beckett on 21 May 2002
- Influenced by Corr-Willbourn Report and addresses science and public concerns
- Not exhaustive survey of science but covers areas of public concern
- Specifically looks at potential use of GM crops in the UK

Membership of the Panel

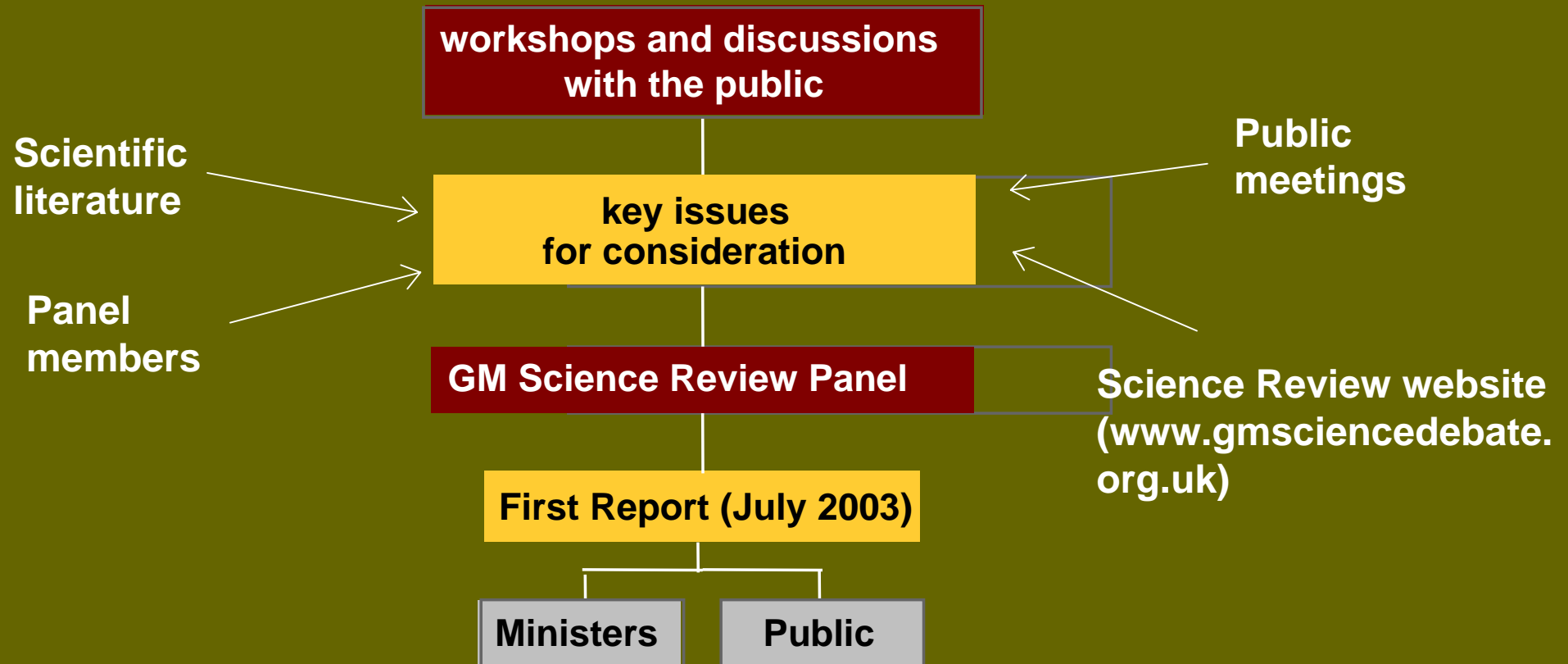
- Prof Sir David King (Chair)
- Prof Howard Dalton (Deputy Chair)
- Prof Peter Young, York University
- Prof Pat Heslop-Harrison, Leicester University
- Prof Dianna Bowles, CNAP
- Prof Michael Wilson, HRI
- Prof Chris Leaver, University of Oxford
- Prof Mike Gale, John Innes Centre
- Prof Philip Dale, John Innes Centre
- Prof Mick Crawley, Imperial College
- Prof Mike Gasson, Food Research Institute
- Dr. Mark Avery, RSPB
- Dr Bruce Pearce, Elm Farm Research Centre
- Prof William Sutherland, University of East Anglia
- Dr Andrew Cockburn, Monsanto
- Dr Simon Bright, Syngenta
- Dr. Andrew Stirling, Sussex University
- Prof Jules Pretty, Sussex University
- Revd Prof Michael Reiss, University of London
- Ms Julie Hill, AEBC
- Prof Alan Gray, NERC
- Prof Janet Bainbridge, Teesside University
- Prof B Rima, Queen's University, Belfast
- Dr Chitra Bharucha, Committee on Animal Feedingstuffs
- Dr Brian Johnson, English Nature
- Dr Michael Antoniou, King's College

Membership of the panel

- Specialist and non-specialist scientists
- Social scientists and ethicists
- Industry
- Non-governmental organisations

Where did the evidence come from?

First Phase



Open meetings

- **GM food safety** – Science Museum, London (Jan 2003)
- **Gene flow** – Royal Society, Edinburgh (Jan 2003)
- **GM crops, modern agriculture and the environment** – Royal Society, London (Feb 2003)
- **GM animal feed: safety implications for the food chain** – Agriculture and Food Science Centre, Belfast (Mar 2003)
- **GM crops: gene flow and fitness in natural and agricultural systems** – IGER, Aberystwyth (Mar 2003)

What was done with the information?

Three main topics:

- GM food and feed safety issues
- Environmental impact of GM crops
- Gene flow, detection and impact

What was done with the information?

Review Framework

- What are the range of views and quality of scientific evidence?
- Is there general scientific agreement?
- Is the issue unique to GM?
- Are the gaps in our knowledge or scientific uncertainties and are these important?
- What are the likely future developments?
- Where there is recognised scientific uncertainty, what is the potential way forward?

Main conclusions from the first report: GM food and feed safety issues

- No verifiable ill effects reported from the extensive consumption of products from GM crops by humans and animals over seven years
 - No compelling evidence for gene transfer to gut bacteria
 - No transgenic DNA in milk, meat or eggs

Main conclusions from the first report: GM food and feed safety issues

- Risks to human health from GM crops currently on the market are very low

But

- GM may present greater risk management challenges in future
- GM regulation remains important and needs to keep pace with change

Main conclusions from the first report: Gene flow/environmental impact

- GM crops very unlikely to invade the countryside or be toxic to wildlife

But

- Possibility of gene transfer to microbes other than soil bacteria (e.g. fungi) may need further research

Main conclusions from the first report: Gene flow/environmental impact

- Insufficient information to predict what long-term impact herbicide-tolerant crops will have on weeds and the wildlife that depends on them

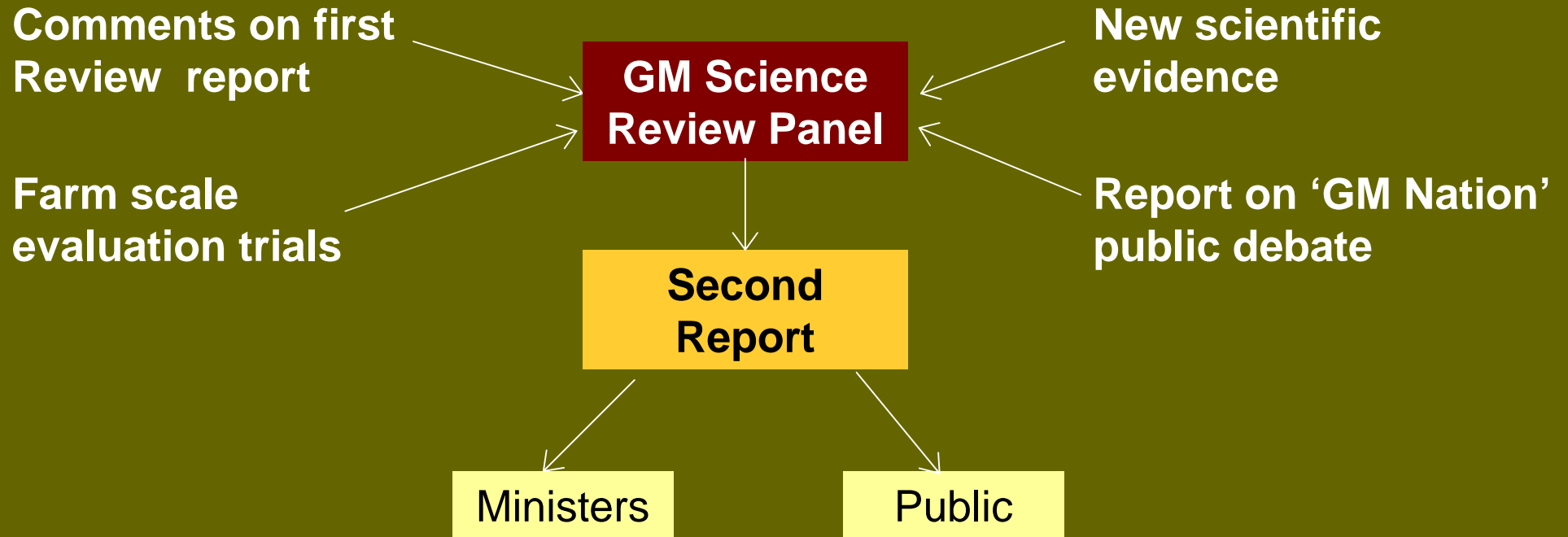
But

- Results of farm-scale evaluation trials are being examined at present

Overall conclusion from first report

- At present, no scientific case for ruling out all GM crops and their products
 - Need to look at benefits (e.g. vitamin and vaccines) as well as risks
 - Case-by-case approach is the best way forward
 - Non-GM breeding becoming more sophisticated

Second Phase of the Review



Further details



- Copies of the first report and further information available from:
 - www.gmsciencedebate.org.uk
 - Dr Adrian Butt, Secretary GM Science Review, Office of Science and Technology, 1 Victoria Street, London SW1H 0ET.
 - adrian.butt@dti.gsi.gov.uk