

AGRICULTURE AND ENVIRONMENT BIOTECHNOLOGY COMMISSION WORK PLAN June 2004¹

Background

1. The Agriculture and Environment Biotechnology Commission (AEBC) was set up in June 2000 with a remit to provide the UK Government and Devolved Administrations with independent, strategic advice on developments in biotechnology and their implications for agriculture and the environment. It is charged with looking at the broad picture, taking ethical and social issues into account as well as the science. Our full terms of reference and a list of current membership are attached at Annexes A and B respectively.
2. The AEBC's first work plan was published in January 2001 following a public consultation. After publication of the Commission's first two reports, *Crops on Trial* and *Animals and Biotechnology*, and the completion of a Horizon-scanning study (see <http://www2.aebc.gov.uk/aebc/reports/reports.shtml>) a second work plan was published in September 2002.
3. Between this time and the end of 2003, two main activities occupied the AEBC. The first was the GM Nation? public debate on genetic modification, which arose from a recommendation in *Crops on Trial*, and with which the Commission was closely involved, with AEBC members making up eight of the eleven public debate steering board members. The public debate formed one strand of the GM Dialogue, which also included a science review and a costs and benefits study. Members of the AEBC also contributed to these strands. The second activity concerned the issue of whether and how genetically modified, conventional and organic crops could be grown in the same area if the commercial cultivation of GM crops in the UK were to go ahead, and who would be responsible if things went wrong. The two AEBC subgroups dealing with these questions (Consumer Choice & Coexistence and Liability) were merged and a single report – *GM Crops? Coexistence and Liability* – was published in November 2003.
4. In March of this year, the Government and Devolved Administrations set out an overall policy confirming the continuing assessment of GM crops on a case-by-case basis and announcing a public consultation on coexistence measures in response to the AEBC's recommendations. The Government said it would allow the cultivation of a particular variety of GM maize, under certain restrictions. However, the variety was subsequently withdrawn from the market by its manufacturer and it now seems that GM crops will probably not be grown commercially in the UK until 2007 at the earliest.
5. AEBC members feel that a number of questions remain unanswered from the GM Dialogue process. Loose ends, such as embedding the lessons learned from the public debate and pursuing the research needs identified by the GM Science Review, must not be abandoned now that the Government has announced its overall policy. The Commission is continuing to do work that highlights these issues.

¹ Note: this document is intended for publication on the AEBC website www.aebc.gov.uk.

6. Turning to new work, members have expressed a wish to move away from the focus of the debate over GM crops to a broader consideration of biotechnology issues that affect agriculture and the environment. It is in this overall climate that the AEBC has drawn up its new work plan. The chosen workstreams draw from topics identified by the Commission in earlier work plans, and issues raised in the horizon scanning exercise and past reports. But, as discussed below, they also reflect current circumstances, both internally and externally to the Commission.
7. This new work plan is now being submitted to the Government ministers to whom we report:
 - Margaret Beckett MP, Secretary of State for Environment, Food and Rural Affairs
 - Patricia Hewitt MP, Secretary of State for Trade and Industry
 - Allan Wilson MSP, Scottish Executive Deputy Minister for Environment and Rural Development;
 - Carwyn Jones AM, Welsh Assembly Government Minister for Environment, Planning and Countryside;
 - Angela Smith MP, Parliamentary Under Secretary at the Northern Ireland Office with responsibility for the Departments of the Environment; Health, Social Services and Public Safety; and Culture, Arts and Leisure.
8. We would be pleased to receive further comments on our work plan, or to answer any questions on the Commission and its work. These may be sent via the secretariat at the following address:

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Telephone enquiries: 020 7215 6508
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Selection of New Work Topics

9. Discussion on a new work plan began in Belfast in December 2003, at the Commission's first meeting following publication of the AEBC's report on coexistence and liability. The Commission then held a private "brainstorming" meeting in London in January 2004 to consolidate ideas.
10. Following on from this, four broad work topics were agreed:
 - i) an investigation of the key drivers behind **research agendas in biotechnology**, and whether they adequately reflect the public interest;
 - ii) a study of the role of biotechnology in **non-food agriculture**;
 - iii) a study of **global influences** on the UK food chain and consumer choice in light of changes to international regulations and the trend of increasing trade liberalisation, primarily through case studies on the sourcing of non-GM soya for animal feed, and sourcing non-GM seeds;

- iv) an exercise in **taking stock** of what the AEBC has achieved since its inception in 2000, including a comparison with similar bodies in other countries and a consideration of future role and remit.
11. Detailed scoping documents on each of these topics were drafted, posing pertinent questions that the Commission wished to resolve, and a stakeholder consultation meeting was held in February 2004 in London. 35 stakeholders attended (see Annex C) and offered useful advice to refine the scope of the four topics. A number of further meetings and discussions on individual work topics have subsequently been held with individual and smaller groups of stakeholders, including with Government officials working in relevant areas. We are grateful for the input from all those who have commented on our plans.
12. After consulting stakeholders, the Commission took the following prioritisation decisions on the four topics:
- The **research agendas** and **non-food agriculture** topics will be pursued as principal workstreams. These are described in more detail in the two sections below.
 - Because of limited Commission time and resources, the **global influences** topic will not be a main workstream. Nevertheless, the global trade issues encompassed by this topic are very important for consumer choice and the Commission will continue to look into what work it might be able to undertake with moderate use of resources.
 - As the AEBC is currently undergoing a routine and “light touch” advisory Non-Departmental Public Body review, work on **taking stock** will be pursued as a overall Commission input to the review, drawing on members’ own unique experience. In addition, the Commission has produced a public-friendly summary guide to its past work to improve its communication to the public of its role and input to Government decision-making².

What Shapes the Research Agenda?

13. Since the AEBC’s inception, the direction and balance of agricultural biotechnology research has been a recurring theme. The Commission will address these issues, looking at the way in which research agendas in agricultural biotechnology are set by asking the following key questions:
- i) What are the key drivers behind agricultural biotechnology research agendas and how are they balanced?
 - ii) What mechanisms exist to ensure public attitudes and aspirations and Government policy priorities are taken into account when research agendas are set?
 - iii) How well do these mechanisms work?
 - iv) What have been the implications of the above for research and development?

² AEBC. *Biotechnology and Farming: What have the Government’s Advisers been saying?* (June 2004). Available on the AEBC website www.aebc.gov.uk.

14. The wider science agenda, its relationship with society and its influence on policy-making and economic prosperity, is currently a “hot issue”, as demonstrated by the Government’s recent ten-year investment framework for science and innovation³. Our work will look at the wider drivers that affect agricultural biotechnology research agendas, such as commercial exploitation and the new mood for public engagement, in addition to the agriculture-specific issues. It will also ask if research is properly geared towards the relevant policy agendas including the drive for sustainability in agriculture.
15. In addressing these questions, and developing recommendations where it sees potential improvements in current systems, the AEBC can add value through the wide range of experience of its members. The combination of science, social science and other expertise puts the AEBC in a unique position to weigh up the different pressures and influences on research priorities in a balanced way. Rather than focusing on one particular research funder, as other studies often do, we can take an overarching look at agricultural biotech research.
16. As part of this work, we plan to undertake a public engagement exercise, employing professional social researchers to engage a small “reference group” of members of the public in a two-way deliberative process with the Commission. In addition to our normal stakeholder consultation channels, we also plan a second, professionally facilitated engagement exercise to reach certain “hard to reach” stakeholder groups such as a younger generation of researchers.
17. We have already begun gathering information on different research funders, and held fruitful evidence sessions in May and July with guests including the Defra Chief Scientific Advisor, Professor Howard Dalton, and the Director of the Macaulay Institute in Aberdeen, Professor Maggie Gill. We plan to use a case study methodology to answer questions about the effect that the current agenda-setting process has had on specific areas of research and development. Case studies being considered include plant breeding, and research for developing countries.
18. The Commission’s work will concentrate primarily on publicly funded research, but will not neglect private research, particularly the influences that public research and its drivers have on the private sector. Similarly, while the focus will be on UK-funded research, the Commission recognises that science is an international activity and aims to address the international dimension, particular European funding.

Biotechnology and Non-Food Agriculture

19. Non-food crops are often cited as a key part of the future of agriculture, and an essential part of achieving sustainability, through sustainable resource provision and combating climate change by providing a renewable energy source. The AEBC feels it can add value in this area by looking at the implications of the application of biotechnology to non-food agriculture. Biotechnology could play a significant role here, by speeding the development of new plant varieties for non-

³ HM Treasury. *Science & innovation investment framework 2004 – 2014* (July 2004).

food use and developing materials which could not be produced by conventional means.

20. A key part of this workstream will involve assessing the degree to which the current regulatory framework is fit for this new purpose: are there systems in place to properly weigh the benefits against the risks of growing new biotechnology-derived varieties of crops, animals and micro-organisms, in comparison with conventionally-bred products? The regulatory issue was highlighted in a recent report for the Government Industry Forum on Non-Food Uses of Crops⁴. The Commission plans to use a series of case studies to analyse the regulations that pertain to them, producing a gap and redundancy analysis, in order to make recommendations on informed and appropriate new regulation and the elimination of bad or irrelevant regulation. Provisionally, these case studies will address three different applications of non-food agriculture: (i) agro-forestry for energy production (ii) packaging and (iii) pharmaceuticals. We are currently consulting experts to define the case studies more closely.
21. At a later stage in the workstream, the AEBC also aims to explore public attitudes towards biotechnology in the non-food sector, where some believe that the benefits are more obvious to people and the risks are less personal. We plan to use the results of the case studies, along with other collated information to inform and challenge the public about the issues raised by the use of biotechnology in the development of non-food agriculture. We hope further to explore public attitudes in conjunction with an interactive TV programme looking at the future of non-food crops in farming and the role biotechnology might play (though the TV programme idea is conceived to complement the core project and is not a necessary part of the workstream; it would be funded externally and not through the AEBC budget).

Working Methods and Timetable

22. In developing its new work plan, the AEBC has used accumulated experience from its previous reports to consider how new working methods could help it achieve its aims. We have produced the framework document at Annex D, which sets out some guidelines on how our workstreams should be run (note that this document was produced before the Commission decided to focus on two main workstreams, but the principles still apply).
23. The most important new methodology that we have adopted is a modular approach for the workstreams. Both workstreams will be tackled in several stages, each of which will result in a stand-alone output. This allows a greater regularity of output, as well as the chance to review next steps at the end of each stage. We envisage that each workstream will still culminate in a final report that brings together all outputs and draws overall conclusions.
24. Rather than having a set sub-group membership as before, we are using a more flexible approach of “core groups” of three AEBC members (see Annex B) to drive

⁴ Andrew McMeekin et al. *Prospecting Bioscience for the Future of Non-Food Uses of Crops*. Institute of Innovation Research Report for the Government Industry Forum on the Non Food Uses of Crops. (2004).

forward and oversee each workstream, with other members' involvement on a more *ad hoc* basis. Others can join with the workstream at any time, but in keeping with the modular approach, they can restrict their involvement to their areas of interest or expertise if they wish.

25. The AEBC is keenly aware that with both these workstreams it has chosen areas that are also of considerable interest to other organisations. As described above, the Commission has consulted stakeholders on its plans, and will continue to do so. This is partly in order to identify other work in the areas that it is interested, and therefore to ensure that our work is targeted to specific aspects where we can add value and avoid overlap, as set out above.
26. The routine review of the Commission is due to conclude in late 2004. Throughout our project planning, we have taken account of the fact the review may result in changed circumstances for the AEBC. The Research Agendas workstream is timetabled to conclude in early 2005 and, while the Non-Food Agriculture work will come to an overall conclusion in Autumn 2005, the final case study/ regulatory analysis modules are also scheduled to finish early next year. Hence, whatever the consequences of the review, the Commission will be in a position to produce a constructive output from both workstreams.
27. More detailed information on the proposed methodology and timing of the workstreams has been already shared with key stakeholders and will be published on the AEBC's website shortly.

Annex A

Agriculture and Environment Biotechnology Commission Terms of Reference

In 1999 the Government⁵ reviewed its advisory and regulatory framework on biotechnology. It concluded that a broader approach was needed for strategic issues. The Agriculture and Environment Biotechnology Commission (AEBC) forms part of the new strategic framework. The Commission will:

- offer strategic advice to Government on biotechnology issues which impact on agriculture and the environment.
- liaise closely with but not duplicate the work of the other two bodies which together with the AEBC form a new strategic advisory framework i.e.:
 - the Human Genetics Commission (HGC) which will advise on genetic technologies and their impact on humans; and
 - the Food Standards Agency (FSA) which will include within its responsibilities all aspects of the safety and use of genetically modified food and animal feed;
- keep under review current and possible future developments in biotechnology with actual or potential implications for agriculture and the environment;
- advise Government on the ethical and social implications arising from these developments and their public acceptability; and
- consider and advise on any specific issues relating to relevant aspects of biotechnology as requested by the Government.

As part of this process the Commission is expected to:

- identify any gaps in the regulatory and advisory framework;
- consider the wider implications of the lessons to be learned from individual cases requiring regulatory decision;
- advise on any changes which should be made to Government guidelines which regulatory bodies are required to follow;
- make recommendations as to changes in the current structure of regulatory and advisory bodies;
- co-ordinate and exchange information with the relevant regulatory and advisory bodies;
- seek to involve and consult stakeholders and the public on a regular basis on the issues which it is considering; and
- operate in accordance with best practice for public bodies with regard to openness, transparency, accessibility, timeliness and exchange of information.

The Commission will:

- in carrying out its work take into account European and global developments;
- nationally, adopt a UK perspective taking appropriate account of legal and other differences between England, Scotland, Wales and Northern Ireland; and
- draw up a work programme.

The Government may also ask the Commission for advice on a particular issue and, if necessary, direct it not to become involved in an area if this could be better handled elsewhere.

⁵ In the context of the work of the Commission 'Government' comprises the UK Government and the devolved administrations.

Annex B

Agriculture and Environment Biotechnology Commission Membership

CHAIR

Professor Malcolm Grant CBE

Provost and President University College London

DEPUTY CHAIR

Ms Julie Hill MBE

Programme Adviser and former Director of Green Alliance

MEMBERS

Ms Anna Bradley

Consumer Affairs Director for the Financial Services Authority

Ms Helen Browning OBE

Tenant Farmer, Eastbrook Farm; Founder and Director of Eastbrook Farm Organic Meats Ltd

Dr David Buckeridge

Business Director of Advanta Seeds, responsible for European and North American operations

Dr David Carmichael

Arable farmer with an interest in non food crops

Professor Philip Dale

Leader of the Genetic Modification and Biosafety Research Group at the John Innes Centre, Norwich

Dr Ed Dart CBE

Chairman of Plant Bioscience Ltd

Dr Matthew Freeman

Senior Researcher at the Medical Research Council Laboratory of Molecular Biology

Mr John Gilliland OBE

President of the Ulster Farmers Union and arable farmer with a particular interest in sustainable production systems and the pioneering of non food crops.

Professor Robin Grove-White

Professor of Environment & Society in the Institute for Environment, Philosophy and Public Policy at Lancaster University

Dr Rosemary Hails MBE

Ecologist, and Principal Scientific Officer, Centre for Ecology and Hydrology Oxford and lecturer at St Anne's College Oxford

Ms Judith Hann

A Freelance broadcaster and writer who presented Tomorrow's World for 20 years

Ms ChiChi Iweajunwa

Member of executive evaluation group for NHS Direct, and member of Partners Council for NICE (National Institute for Clinical Excellence)

Dr Derek Langslow CBE

Scientist specialising in nature conservation/biodiversity and former Chief Executive of English Nature

Professor Keekok Lee

Visiting Chair in Philosophy, Institute for Environment, Philosophy and Public Policy, Lancaster University

Professor Jeff Maxwell OBE

Former Director, Macaulay Land Use Research Institute

Dr Sue Mayer

Executive Director of Genewatch UK

Dr Paul Rylott

Former Chairman of the Agricultural Biotechnology Council (ABC) and former Head of BioScience UK at Bayer CropScience

Ms Justine Thornton

Barrister specialising in environmental law at Allen and Overy Solicitors

Annex C

List of stakeholders who attended the AEBC's meeting on 26 February 2004, in London:

1. Ade Adeoye, Food Standards Agency
2. Richard Ali, British Retail Consortium
3. Graham Brookes, PG Economics Ltd
4. Professor Neil Bruce, Centre for Novel Agricultural Products
5. Dr Sean Butler, St Edmund's College Cambridge
6. Alissa Cook, Soil Association
7. Natalia Davie, DTI, Bioscience Unit
8. Sue Davies, Consumers Association
9. Dr Simon Edwards, The Royal Society
10. Dr David Gillham, European Genomics, Syngenta
11. Anna Hope, English Nature
12. Dr Pamela Kempton, Natural Environment Research Council
13. Ged Kerins, GM Enforcement Team, Central Science Laboratory
14. Pamela Kirby-Johnson, Grain and Feed Trades Association
15. Julian Little, Bayer CropScience Ltd
16. Dr Julian Ma, Mucosal Biology & Disease Res. Group, Kings College London
17. Dr Tom MacMillan, Food Ethics Council
18. Dr Colin Merritt, Monsanto UK Ltd & SCIMAC
19. Alison Mohr, University of Westminster
20. Dr Darren Moorcroft, Royal Society for the Protection of Birds
21. Professor Vivian Moses, CropGen
22. Richard Nicholls, British Sugar
23. Clare Oxborrow, Friends Of the Earth
24. Richard Pitts, Office of Science and Technology
25. Ruth Rawling, Cargill PLC and Banks Cargill
26. Sarah Resouly, Sustainable Farming and Food Research Priorities Group
27. Harald Schmidt, The Nuffield Council on Bioethics
28. Julie Simpson, Scottish Executive Environment and Rural Affairs Department
29. Maggie Smallwood, National Non-Food Crops Centre
30. Dr Bron Szerszynski, Lancaster University
31. Professor Joyce Tait, Innogen, The University of Edinburgh
32. Emily Thompson, Sustainable Farming and Food Implementation Group
33. Matt Ware, National Farmers Union
34. Dr Jonny Wentworth, Royal Commission on Environmental Pollution
35. Linda West, Health and Safety Executive

Annex D

AEBC – A Forward Strategy

Priorities and Context for Future work of the AEBC

The AEBC was set up to offer strategic advice to Government on biotechnology issues which impact on agriculture and the environment. The remit has a specific focus on

- keeping under review future possible developments in biotechnology.
- social and ethical implications
- regulatory issues

Priorities are derived from:

- AEBC's horizon-scanning report drafted in 2002:
- Better understanding of key public concerns from population surveys and importantly from the GM Nation? debate in 2003
- New UK agriculture policy agendas e.g the Sustainable Food and Farming Strategy for England; Strategies for Agriculture – Scotland, NI, Wales
- New environmental policy drivers such as biodiversity strategy, Energy White Paper
- Changes at EU level resulting in new GM regulations and CAP reform
- The drive from the WTO towards greater trade liberalisation continues

Taking into account both the issues identified by the Commission in 2002 and the changes in context since then, three key areas for study have been identified:

- **A study of whether *public and private research agendas* in the UK are properly geared to address the new policy directions for agriculture and the environment.**
- **A study of the regulatory context for *non-food crops*, stemming from changing policy e.g. land-use priorities, free trade and energy security & climate concerns.**
- **A study of *global influences* on the UK food chain and consumer choice in light of changes to international regulations and the trend of increasing trade liberalisation.**

An overarching framework

A framework has been developed (**see figure below**) to facilitate the Commission in supplying quality advice to Government through providing:

- Coherence, consistency and a comprehensive approach across work streams;
- Integration of the scheduling of inputs and outputs for each work stream;
- Integration of effort and resources across common themes: some potential examples are:
 - contribution to reducing impacts on the environment, the climate change agenda, improving efficiency in the food chain, protecting consumer choice;
 - common methodological aspects necessary to undertake that work (e.g. retrospective look at past research agendas);
 - ensuring that stakeholders who may wish to contribute to two work streams are consulted only once.

- Ensuring that the Commission in its work is mindful of the overarching principles of sustainability and of the role of biotechnology has in the development of society

Working Guidelines

- Take account of what we know about public attitudes and concerns from work we and others have already done (e.g. foundation workshops and narrow-but-deep workshops in GM Nation?, regional focus groups and continuous involvement of public reference group for the Animals Report, stakeholder evidence taking sessions for the Coexistence Report etc)
- Include clear plans for public and stakeholder engagement. Such proposals need to be fit for each purpose, but they should include some ongoing or continuous involvement.
- Break down major projects into discrete sub-projects, with research reports, case study material released as they are produced, thereby allowing continuous output and regular review of next steps.
- Consider whether others have conducted similar work to ensure the proposed research will add value.
- Use a variety of tools - seminars and workshops, speakers, research, case study, review etc.
- Focus on getting others to inform and help us in our work as much as possible.

Conclusions and Recommendations

Conclusions and recommendations made by the Commission should take into account:

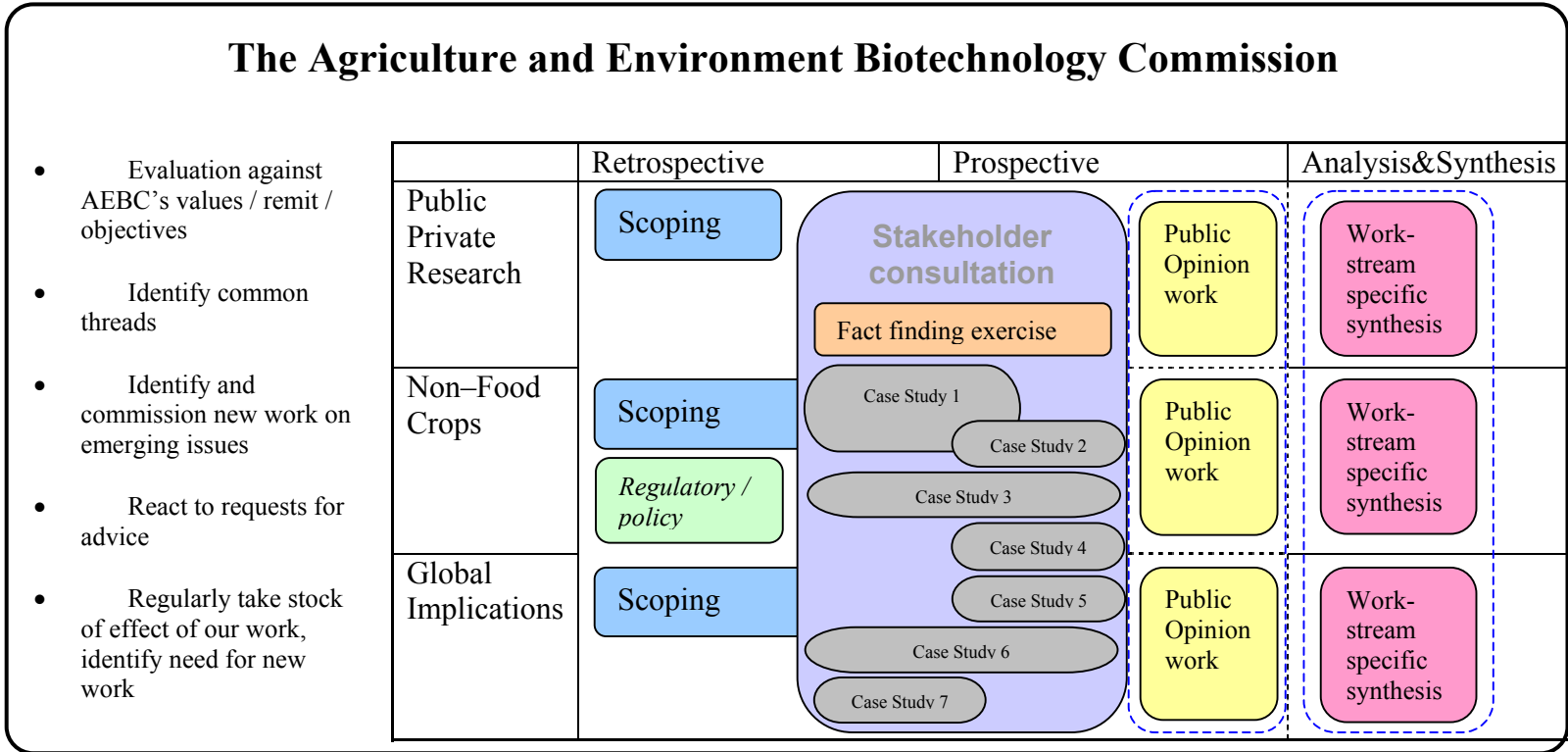
- the broad context and public perception of the issues being considered;
- outputs from stakeholder and public involvement;
- the policy agendas across government;
- the boundaries of our remit, and be clear about when we are crossing them and why.

Importantly, the Commission should consider and be explicit about the **values** and **weightings** it uses when scoping projects, analysing information and forming its conclusions. In particular it should ensure that it considers fully the trade-offs between the economic, social, ethical and environmental dimensions of its conclusions and when necessary set out the range of views across the Commission and the consensus where achieved.

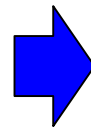
- Public opinion (e.g. GM Nation? Results)
- UK Government policy (Stated policy and direction)
- EU Developments (Stated policy and direction)
- International developments (WTO etc.)



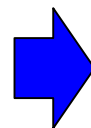
Inputs and drivers



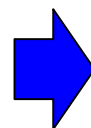
Major outputs



Public Private Research Report



Non-Food Crops Report



Global Implications Report



Regular outputs



- Reports of events, discussions, consultations
- "Short reports": one-off findings, pure factual information relevant to ongoing debate
- Progress reports from case studies etc.

Some over-all themes or finds may come out of workstreams collectively.