biotechnology commission

Agriculture and Environment
Biotechnology Commission

What shapes the research agenda?
in agricultural biotechnology

A report by the Agriculture and Environment Biotechnology Commission (AEBC)

A consultation with the general public and stakeholders

April 2005

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Produced by Opinion Leader Research on behalf of the Agriculture and Environment Biotechnology Commission (AEBC)

This paper is a short summary report of a public and stakeholder engagement exercise conducted by Opinion Leader Research for the AEBC. Detailed reports of each of the three stages of the exercise are also available, on the AEBC website at: www.aebc.gov.uk/aebc/subgroups/research_agendas_workshops.shtml.

The exercise is one of five modules that have contributed to the AEBC's report on research agendas in agricultural biotechnology (AEBC (2005) *What shapes the research agenda in agricultural biotechnology?* **URN: 05/1078**). For electronic copies of this final report and the five modules, go to www.aebc.gov.uk and click on "Reports". Hard copies are available by calling the DTI Publications Orderline on 0845 015 0010 and quoting the Unique Reference Number (URN) code for the paper wanted.

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1. Background

1.1 Aims and objectives

In its study of research agendas in agricultural biotechnology, how they are shaped and the extent to which the views of the public have or should have influence, the Agriculture and Environment Biotechnology Commission (AEBC) wanted to include the public and certain stakeholders who are not normally consulted. The AEBC wanted to hear and understand what the public and these stakeholders think about science and the drivers that determine the science agenda. The AEBC also wanted to seek their views on whether and how the public could be involved more productively in these decisions and to get feedback on its own thinking arising as a result of the other work it was conducting on research agendas.

To do this, Opinion Leader Research was contracted to conduct a public and stakeholder engagement exercise. In short, the approach was based on two parallel and interacting strands, one with the public and the other with stakeholders as outlined below. Whilst neither the public or stakeholder groups are statistically 'representative', they were recruited to give breadth in terms of age, social class and geographical location. The results therefore represent an in-depth snapshot of these people's views and how they are formed.

The consultation was conducted in three stages and included farmers, scientists, field advisers and the general public. Detailed reports on each of these stages are available on the AEBC website (www.aebc.gov.uk). This report summarises the overarching results of all three stages.

1.2 Methodology

Throughout the report, reference is made to views of 'scientists', 'farmers', 'field staff' and the 'public' to ensure that it is clear which group held specific views. It is not meant to imply that they are representative of the wider population as a whole. Whilst we recruited a broad spectrum of participants (to ensure a spread by key demographics and geographical location), the consultation is qualitative and is not, by definition, aiming to be statistically robust. If the audience raising an issue is not specified, this is because the issue was raised by both stakeholders and the public or because participants were working in mixed groups and it is impossible to tell whether views were put forward by stakeholders or the public.

Participants for stage three were drawn from the sample of participants who participated in stage two (and who had also participated in stage one). The reduction in numbers for stage three was to make the event more manageable but careful effort was made to ensure that the participants remained broadly reflective of the range of participants involved in previous stages. The initial recruitment techniques employed are outlined below.

Stage 1: Nine discussion groups

A series of nine group discussions (six with the public and three with stakeholders) was conducted between 5th and 12th October 2004.

The members of the public were recruited by Opinion Leader's network of recruiters using a combination of on-street and referred recruitment. Individuals were recruited to a detailed specification to ensure a mix by key demographic characteristics. This method of recruitment avoids self-selection and those individuals who are the 'usual suspects' i.e. those who tend to participate in public meetings. Individuals with a scientific background were specifically excluded, as

were those who are active in campaigns relating to animal rights, environmental issues and genetic modification (GM).

Members of the public were paid an incentive to attend and asked to sign up to participating in all three research stages. An average of eight participants attended each public group.

Three group discussions were also conducted with stakeholder audiences in Nottingham – 7 scientists, 4 field advisers and 6 farmers participated. These participants were approached directly and asked if they would be willing to take part. The discussions all had a focus on agricultural biotechnology, although they were not limited to this issue.

Participants were selected to ensure a diversity of experiences i.e. farmers with different types of farms and scientists with a variety of specialisms (including transgenics, genetics, animal biology, applied science). Scientists who currently have a voice in funding decisions were specifically excluded. The 'field advisers' group comprised representatives from private consultancies, local authorities, the Farm Animal Welfare Council and the sector skills organisation.

Stage 2: Three half day workshops

Three half-day workshops were conducted between 30th November and 7th December 2004.

- Workshop 1: Public (Bristol with representatives from Cardiff)
- Workshop 2: Public (Perth)
- Workshop 3: Stakeholders (Nottingham)

40 members of the public recruited for the first stage were asked to participate in stage two.

Group 1	Bristol	ABC1	Women	Workshop 1
Group 2	Bristol	ABC1	Men	
Group 3	Bristol	C2DE	Men	
Group 4	Cardiff	C2DE	Women	
Group 5	Perth	ABC1	Mixed	Workshop 2
Group 6	Perth	C2DE	Mixed	

Farming stakeholders came from Nottingham, Derbyshire and Lincolnshire and from the following types of farm:

- mixed farm (arable and cows);
- mixed farm (cattle and butchers);
- arable farm (wheat, sugar beet, potatoes etc);
- mixed (arable and beef);
- organic cattle and sheep;
- organic dairy and sheep (plus tourism).

Field advisers came from the following organisations:

- Agronomy Plus (a private company advising farmers);
- Countryside and Woodlands officer from a local county council;
- The Arable Group (field advisers who used to be a part of ADAS Sustainable Crops Group);
- Royal College of Veterinary Surgeons/Farm Animal Welfare Council;
- N.B. we invited more field advisers to increase the number of people in this category but two had to cancel at the last minute due to illness.

Scientists were from the Universities of Nottingham, Derby and Aberdeen. We also invited scientists working in the private sector but they were unable to attend. Their broad research interests were:

- transgenics;
- genes and evolution;
- genetics;
- animal biology - particularly animal welfare;
- applied science (agronomy to genetics).

In addition, a number of expert witnesses spoke at the workshops to discuss the benefits and problems associated with public engagement and to introduce ideas of ways in which the public could be involved.

Stage 3: One full day workshop

One full day workshop in London bringing together stakeholders and the general public was conducted on 2nd February 2005. This workshop brought together the following participants from previous stages (a couple of the Scottish participants and a scientist pulled out at the last minute when it was too late to replace them).

Public – Bristol (England)	12
Public – Perth (Scotland)	6
Public – Cardiff (Wales)	5
Stakeholder – Farmer (England)	4
Stakeholder – Field Adviser (England)	3
Stakeholder – Scientist (England and Scotland)	3

2. Summary of Findings

2.1 Initial impressions

In the first stage of the consultation, the public had very little sense of what is currently driving research agendas. This is reflective of the wider point that many of the public participants had very limited knowledge of science or research agendas before agreeing to take part in the consultation.

They felt that the public currently has little influence over the research agenda, although campaign groups may have an impact. Consequently there was significant scepticism about the motives behind research (particularly in terms of the politicisation of the agenda) and some concern that research may be able to develop too quickly without proper checks and balances.

Similarly, farmers in the first stage were unclear on how the agenda is set, although many were convinced that whoever does set the agenda does not have the needs of farmers at the top of their priority list, and certainly does not consult farmers on what research they need.

Field advisers started from a more informed position than farmers which reflects their role as intermediaries between the scientific world and farming. They echo the opinion that whatever is currently driving the agenda is not necessarily taking the needs of people at the grass-roots level into account.

Scientists were naturally the most informed audience in the first stage. They talk throughout the consultation about conflicting demands placed on scientists by funders. For example, some describe how the demands associated with the

Research Assessment Exercise (RAE) mean that research conducted does not always fit with the wider agenda or public priorities.

2.2 Underlying themes

There are several themes that recurred throughout the engagement process, which help explain more specific views on issues such as public engagement and the drivers behind the science.

Generally positive about science

Although there is some sense that science could 'go wrong' or is conducted in secret, all participants are generally positive about science and research. They see science and the acquisition of knowledge as important for society to progress, innovate and build businesses and recognise many ways in which science has brought tangible benefits in different fields. The public also note how important it is for policy making to be informed by research. Whilst sceptical about 'blue skies' research early in their deliberations, they became more positive about its importance through the process.

Public ambivalence about science is expressed in relation to the purposes it is being used for and motivations of those involved in promoting it. Controversial areas of science, such as embryo research and GM foods, which raised ethical or social dilemmas, obviously created unease and anxiety, but this uncertainty is more widely held as discussed below.

Trust and motivation

A striking feature shaping the public's views is the deeply embedded belief that everyone involved has an 'interest', including charities, industry, scientists and

Government. The consequence of this is that no one is seen as acting wholly in the public interest and cannot be trusted to do so. Throughout, the Government and politicians are seen in a particularly cynical light, and generally expected to use science to support their own political ends, which did not necessarily seem to be seen to coincide with the broader public interest. Stakeholders are also concerned about the way in which science agendas can be directed by what is considered to be politically expedient.

To a lesser degree than Government, scientists are also expected by the public to promote their own interests (or the interests of those funding the research that they are conducting), although they are seen by the public as having special and important knowledge and insight. Although it is felt that scientists could influence the research agenda (and that they had their own agendas in this respect), few questioned the way in which research is conducted. There is, however, a widespread lack of trust in how research results are represented and what is actually selected for reporting (which is largely felt to be outside of the scientists' control).

A lack of balanced information

The public are particularly uncertain about what information they can believe and point to several contributory factors. The key factors are listed below.

- Firstly, there is a prevalent view among all audiences that there is a fundamental lack of understanding among the public about science and how the current funding system works. They feel strongly that this needs to be addressed by increasing the relevance of science in schools to ensure people are more interested at an early age. By raising knowledge and awareness, they feel that not only will the public be able to contribute more to discussions, but also there will be more trust in the system because people will be able to

understand the processes that occur. Scientists also acknowledge that they have a role to play in communicating the issues to the public, although they feel that they have little expertise in this area and that the complexity of science is a real barrier to public engagement.

- Linked to this is the perceived lack of understanding about how to balance contradictory messages from different sources. Some feel that more education will help people understand what these mixed messages mean.
- Secondly, there is a perception among the public and some farmers that Government is often tempted to release only the data that substantiate their viewpoint. Many feel this is detrimental to the Government, as the media invariably uncovers contradictory evidence, and if Government were more open about this evidence to start with, the public would not be given the impression that Government is purposefully trying to hide information.
- Thirdly, all groups feel that current reporting of research is either so superficial that the public are unable to draw their own conclusions, or is so full of jargon that the public find it impenetrable. They feel that to increase trust reports must not only be made more accessible in a physical sense, but also more comprehensible to the layman.

The role of the media

The role of the media is raised in all three stages as contributing to low levels of trust. All participants recognise that the media is tempted to sensationalise stories in order to sell papers. Scientists feel helpless to stop inaccurate reporting of the facts and feel this is an issue that should be addressed, ideally by holding the press accountable for misleading the public, but in the shorter-term by providing scientists with media training so that they have the skills to impart the truth. They feel strongly that that misinformed media campaigns have led to hostile public opinion, which has resulted in some areas of science being 'off limits'.

An imperfect system

Many participants feel that the system is not working as effectively as might be the case. There is a prevalent view that the system does not meet the needs of key stakeholders (with farmers particularly sceptical about the current situation). Scientists and field staff also feel that the system is influenced by numerous external factors (whether political or economic), meaning that the aims and objectives of research are sometimes not in the wider public interest (or that this is not a driving factor). There is also concern that the system is not sufficiently 'joined up' – there is a lack of synergy between research projects and little congruence in the research objectives of different organisations.

There is an assumption by the public that the agenda is not set with the public interest in mind. There is a strong belief that the public currently has little influence over the research agenda. It is felt (by both the public and farmers) that there is some entrenched resistance to public involvement because it is a fairly new concept and also construed by some as a challenge to the prevailing culture. However, public participants feel that the public could bring an important dimension of 'common sense' to debates about science through grounding the discussions and relating them to real life experience.

Farmers feel their interests are not really considered in the science that has been conducted and that the science being conducted currently is not necessarily in the UK farming industry's or their own individual interest. Much of their focus is on the UK being self-sufficient and the lack of value placed on local or national food production. Organic farmers are particularly sceptical about the current research system.

Field staff feel strongly that they have a real contribution to make in the setting of research agendas because of expertise derived from their intermediary role and the fact that they act as a 'bridge' between the scientific and farming communities. They feel that this potential is not currently exploited and that the system is not, therefore, working as well as it could.

Positive response to the consultation experience

Overall, the participants, both public and stakeholders, were positive about the process and the experience. The public in particular were pleased (and in some cases surprised) that their views were being sought and taken seriously. They felt that the consultation provided a number of opportunities (both in terms of personal and wider societal benefit):

- a chance to influence the future;
- an opportunity to interact with other stakeholders and listen to other people's views;
- the scope to expand their own personal knowledge and experience.

The main problem experienced was associated with the limited time available in relation to the complexity of the issues being discussed.

3. The drivers of science

Over the space of the three stages the drivers of research are discussed, first unprompted, and then based on the four drivers identified by the AEBC:

- wealth creation and competitiveness;
- advancing knowledge;
- informing Government policy and legislation;
- science and society/what the public want.

A recurring theme throughout the discussions is an expectation that, in an ideal world, money should be spent with the aim of maximising the 'public good' derived from research. This is particularly clear in discussions about Government where decisions to spend money based on other factors are criticised.

3.1 Wealth creation and competitiveness

Participants have some difficulty understanding this driver, as they debate the scope of the definition of 'wealth creation'.

- Some use a narrow definition, equating wealth creation to private sector profit. In this case they struggle to see the benefits for the UK as a whole, except to the extent that the resultant profits are partially redistributed to Government in taxes. This initial inability to link wealth creation with a public good leads many (particularly public) to prioritise other drivers over this one.
- Others are open to a wider definition, where wealth creation is also linked to a number of benefits including an improved environment, increased employment and enhanced UK competitiveness (e.g. if public money is spent on developing crops which require fewer pesticides). They see benefits for Government and the UK as a whole that can be gained by the creation of strong, (mutually beneficial) partnerships between the public and private

sectors. Some connect this driver with research focused on increasing people's quality of life.

Farmers and field staff feel that producers may benefit, and the public as consumers feel that investing in UK farming is congruent with current trends to demand locally grown produce.

Furthermore, some scientists are keen for stronger recognition of the importance of wealth creation to spread into the academic world (for example, some feel the current structure for RAEs does not necessarily encourage this).

Following extended debate and discussions about the potential benefits, the majority are supportive of this driver (although some feel that it is inevitable that wealth creation will influence decisions so it is futile to insist that no funding is driven by it). The public, as taxpayers, appreciate the possibility of Government investing money, with the support of industry, to ensure that public funds go further.

However, the discussions also highlight a number of key concerns. In particular, participants need reassurance that research driven by wealth creation will be in the public interest rather than in the interest of the individual or company that instigates and champions the research. The debate also raises concerns about the accountability of private sector companies and also the possibility of the potentially damaging impact of private / public partnerships on the public sector. Participants also want reassurance that the research will benefit the UK rather than other countries, and that policy goals will include a drive for other aspects of 'public good' in addition to any financial benefit.

3.2 Advancing knowledge

This driver receives overwhelming support from stakeholders as they see it as the building block on which other research can build.

Initially, the public are fairly cynical about the value of the advancing knowledge driver (a scepticism which is partly fuelled by an apparent distrust of scientists who are perceived to be able to influence research according to their own agenda).

However, the case studies presented in the second stage ('Discovery of DNA' and 'Soil biodiversity' – see the detailed report of Stage 2) enabled participants to appreciate that 'blue skies' research can in fact lead to very tangible and valuable applications in the long term. Once this connection is made, most public participants are comfortable with funding being influenced by this driver. A minority of the public also acknowledge the intrinsic value of advancing knowledge.

Despite strong support for this driver in theory, some participants have difficulty deciding on its relative importance with respect to the other drivers.

- Some of the public question how, when budgets are limited, research into areas not directly associated with current need can be a priority.
- However, they also recognise that 'blue skies' research may lead to a 'happy accident' that in the long run may be far more useful/valuable than the results of more targeted research.
- Consequently they conclude that in order to ensure this research is done, a certain proportion of the research budget should be ring-fenced.

3.3 Informing Government policy and legislation

Throughout the exercise, participants display considerable cynicism about the motives of Government and politicians. This reflects a wider societal trend of reduced trust in the Government. Consequently, reactions to this driver are highly dependent on an individual's perception of the current political system.

The majority suspect Government to be influenced by a number of factors including a desire to be re-elected, a desire to cut expenses where possible (e.g. in the case of the MMR jab), and ultimately not wanting to admit culpability for past mistakes. As a consequence they doubt that Government will be motivated to act in the public interest at all times.

There is also concern that a focus on this driver would mean that the research conducted is less likely to be responsive to the needs of those at a grass-roots level.

Stakeholders, in particular scientists, are concerned that the increased use of research to inform policy is resulting in an agenda which is overly reactive. This focus on responding to events or 'crises' is felt to be short-sighted and there is a strong call for a strategy which is more visionary and proactive. Stakeholders give examples where they feel that more proactive thinking on behalf of Government could have reduced the impact or perhaps even prevented some of the crises that have hit the UK (e.g. Foot and Mouth, BSE).

However, some (mainly public) are more positive about this driver and believe that research commissioned to inform policy decisions will ensure that better decisions are made (which serve to protect the public).

3.4 Science and society/what the public want

Many participants view this driver differently to the other three because of the way the conversations are framed.

- As a result of the original information provided on this driver, many assumed that it meant spending money on involving the public, rather than necessarily spending money in areas of interest to the public.
- However, the fact that participants later discuss with enthusiasm the concept of including the public in the decision-making process is evidence that most feel that what the public think is important should definitely influence what research is done. This is discussed in more detail in Section 5 below.

Some of the stakeholders can already identify areas where the public do influence the agenda, if perhaps more indirectly.

- They give examples of situations where funding is made available for research into areas that are of interest to the public (such as risks associated with GM) and examples of areas where money is not available as a result of public opinion (e.g. research into development of GM technologies).
- There is some concern about the influence of the public, as some scientists believe it is restricting development in some potentially interesting fields of research.

4. Improving the system

4.1 Balancing interests of various stakeholders

In all stages, participants discuss a range of stakeholders who could be involved in decision-making. Views were fairly consistent across the three stages.

The overarching message coming from these debates is a desire to see a balance of different interests on committees, to ensure that ultimately committees are more likely to act for the common good and independently of the agendas of individuals. However, participants identify a potential 'Catch-22' situation where the only people who have the technical expertise needed to make decisions are the very people who will have a vested interest in the decisions.

4.1.1 Scientists

For most participants the question is not whether scientists should be included in the process (as everyone believes that they are the only stakeholders who will be able to have a strong understanding of everything that is discussed) but instead what weight should be given to scientific opinion.

- Some, including scientists believe they should have the greatest involvement because they are best positioned to understand the decisions that need to be made.
- Others are less convinced and feel that scientists should be represented but should have an equal weight to the other groups of stakeholders represented.

There is some discussion over the extent to which scientists have influence over the agenda. Some scientists talk about feeling constrained by having to apply for particular funds and consequently having to meet certain objectives. Some

participants empathise with scientists and feel that they should have quite strong control over what they research – because this will enable them to be passionate about what they are doing. However, some of the field advisers and farmers are less enthusiastic about scientists influencing the agenda. They feel that some 'career scientists' will choose a topic they want to work on and then stir up interest in order to receive funding, which they feel detracts from research for which a true need can be identified.

4.1.2 Farmers

Farmers are obviously keen for their interests to be represented in the decision making process, particularly given the frustration that they feel that current scientific research is not working to meet the needs of UK farmers. However, other participants feel less strongly on this issue (whilst still feeling that farmers have a legitimate interest to be represented).

4.1.3 Government/politicians

Some, particularly stakeholders, are keen to involve Government or politicians as representatives of the public and the public interest. However, as discussed previously, many of the public participants are uncertain about the motivations of Government, and additionally do not feel that science and research are (or probably ever will be) ballot box issues and that consequently the assumption that Government can represent the public interest on committees is challenged.

4.1.4 Private companies

The involvement of private companies is seen as an important factor to consider when discussing research agendas, particularly because of the large amount of

money spent by multi-nationals on research every year. However, many recognise that the ability of Government to impact on private companies' agendas is limited and that there is little potential for this to be extended. Although some are receptive to the idea of the private and public sectors working in partnership, there is a high degree of scepticism about the interests of private companies (i.e. a belief that they will prioritise profits above all else) and therefore many feel they have no place in making decisions about the spending of public money.

4.1.5 Public and public representative bodies

There is a strong belief that the public should be involved in decision-making and that they should not be excluded from the concept of 'stakeholders'. The issue of public involvement is discussed in more detail in Section 5.

There was less clarity over the involvement of representative organisations (such as consumer groups, NGOs and other public representative bodies). Some felt that given their expertise and experience, their involvement is important as they have a valuable contribution to make. A further argument is that they are more likely to be able and willing to express an opinion. However, there was heated debate over their 'representativeness' and the fact that they all have some form of agenda. There was consensus that if they are involved, they should be involved in addition to, and not in place of, individual members of the public.

4.2 Improving information provision

In different ways people repeatedly called for a system which enabled a more balanced and trustworthy presentation of science that people can learn from and have confidence in. Transparency and accessibility, in terms of ensuring full disclosure of results into the public domain (where it would not compromise the safety of the scientists conducting the research) and also in a format that is comprehensible to the public, are identified as underpinning requirements. Science education and public service broadcasting are considered important in making science more accessible, open and transparent. This is seen to be the starting point if there is to be a real commitment to having a constructive debate with the public about setting research agendas for the future. They feel that an independent broadcaster has the ability to reach a wide audience and can transmit factual information to inform the public about what is happening. There is recognition, however, that it may be difficult to engage members of the public who do not have a natural interest in science.

4.3 Increased accountability and transparency

There is also a call for greater accountability (and linked to this transparency) of decision-making. This tended to be related to the private sector but was also an issue for public sector funding. Many participants wanted the system to ensure that decisions are more 'auditable' and that responsibility for decision-making is more clearly delineated. This is inextricably linked to a better understanding of the agenda of those influencing decisions and the call for some element of independence. This issue of the involvement of individuals with no 'vested interest' is covered in more detail in Section 5.

5. Public engagement

By the end of the final workshop, almost all participants are convinced that there is a role for the public in the process of setting research agendas although this opinion is reached after much deliberation.

- In the first sessions, views are relatively mixed about how this can happen and what value it would bring. Public participants feel that the public should be involved although there is some concern that they may not have the relevant skills or expertise to participate in a meaningful way. Farmers and field staff are generally fairly positive about the possibility of public involvement. Scientists, in particular, are sceptical about what the public can bring to a debate, as they believe that information would have to be diluted and simplified to the extent that conversations are no longer meaningful. Of those who have objections to public involvement, most were opposed because of practical issues rather than being opposed to the principle, although there are some who feel that the public would respond to issues intuitively and emotionally and that this would have negative repercussions for the quality of decision-making. Some of this reservation can be attributed to a belief that public involvement must be synonymous with public decision-making rather than one factor in the decision.
- During the second stage more participants warm to the idea of public involvement although some are still unsure about the ability of the public to make a meaningful contribution.
- It is only in the final stage, where participants have more detailed discussions about the types of contribution the public are able to make, that there is a significant shift in opinion with almost all participants believing there is a role for the public in setting agendas.

In the final stage, participants are encouraged to discuss the different levels (from high-level strategic to lower-level decisions between projects) at which the public could potentially be involved. The reason for previously mixed views becomes clear when discussions are held in this way.

- At the top levels where decisions are about strategic aims of research over the next 50 years almost all participants feel that the public has a role. Many see it not only as a right of the public (as taxpayers) to determine the long-term aims of research, but also as a responsibility or citizens' duty, in the sense that parents will be responsible for the world they hand to their children.
- Moving to more detailed levels of involvement, people are less comfortable with involving the entire general public in decisions. There is more need for detailed knowledge and therefore participants feel that a longer-term commitment is needed and that, consequently, it will require either the inherently interested public, or an incentivised public, in order to contribute.
- In terms of deciding which individual projects should be funded there are some people who think that some public should be involved, mainly to bring 'common-sense' to decision-making. However, generally this is seen to be a decision that must ultimately be made by experts (i.e. those who understand the technicalities of the different proposals).

The issue of the timing of involvement (i.e. upstream versus downstream) was discussed. There are mixed views about what stage in the process the public can make the most relevant contribution. The tension was identified in the need to consult with the public early enough in the process to allow them to make a difference but also at a time when sufficient information will be available for them to express an opinion. However, as the majority of people feel that involvement is most important at the top level (i.e. long-term strategy rather than individual

decisions), the question of when in the process to some extent become less relevant.

In summary, public involvement is viewed to be important because it is thought to help ground the process in 'common sense' and bring a degree of independence, as the public are felt to have no vested interest to bring to the table. Openly involving the public is likely to increase confidence in the decision-making process as well as potentially improving the quality of decisions which are made, particularly ensuring that decisions about how to spend public money are in the public interest. Public involvement is felt to be the only way in which to ensure that the research agenda does take account of the wider public interest.

Whilst there is strong support for public involvement, the difficulty of ensuring that the public could contribute to the debate is flagged as an issue. There is a prevalent belief that public engagement is desirable only if there is a demonstrable commitment to it, people with a range of backgrounds and perspectives participate and that the public is given the opportunity and means to contribute in a meaningful way. These difficulties are not, however, raised as an argument against public involvement, but more in terms of a recognition of the associated challenges.

Several key needs to make this effective are identified:

- Public involvement needs to be properly facilitated to enable the public to participate effectively. They would need the time to become properly informed and efforts made to ensure all voices are heard.
- Public engagement is most important at the strategic level, where priorities will be set that determine the future. The public are thought to have relevant

knowledge in this area (particularly in terms of ethical questions) and a stake in their children's future.

- Public involvement at the level of individual grant applications is seen to be more a matter for specialists although some kind of public input (as opposed to final decision-making) is not ruled out.
- A need for a transparent 'audit trail' is identified, which shows how the public viewpoint is used to inform decision-making.

URN: 05/1085