3

Understanding genetically modified organisms

Introduction

3.1 Gene technology, particularly GM foods, has had a high media profile worldwide. The committee has received evidence that lack of information, conflicting news reports and negative perceptions of multinational companies have generated concern among members of the public.[1] Many consumers feel that ethical and cultural values have not been considered, and an overwhelming number of submissions from both sides of the debate stated the urgent need to educate both consumers and producers about gene technology.[2]

> The GM debate has been so controversial not least because of the deep cultural significance of food and the changes that genetic engineering promises to bring culturally and socially. Our evidence shows that many people [in the UK] are increasingly unwilling simply to accept such revolutionary changes without a genuine debate about the options society faces.[3]

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1 For example, Agrifood Alliance Australia, Submission no. 37, p. 6; Australia and New Zealand Food Authority, Submission no. 63, pp. 4-5; Australian Barley Board, Submission no. 60, p. 11; Grains Council of Australia, Submission no. 65, p. 17; Mr Brendan Doyle, Submission no. 3, pp. 3, 4; Nugrain, Submission no. 25, p. 12; Office of Fair Trading, Queensland, Submission no. 13, p. 1.

2 For example, National Farmers' Federation, Submission no. 36, p. 18; Queensland Fruit and Vegetable Growers, Submission no. 42, p. 4; The Veterinary Manufacturers and Distributors Association, Submission no. 76, p. 3.

3 *The Politics of GM Food: Risk, Science & Public Trust*, Economic & Social Research Council, Special Briefing No. 5, October 1999, p. 20.

3.2 There are benefits and risks associated with gene technology, and there is a need to provide balanced information about them in an open and credible manner. Particular emphasis needs to be placed on addressing consumer concerns associated with risk, and how these risks are dealt with in the regulatory framework.

3.3 This chapter focuses on consumer concerns about gene technology and addresses the following issues:

- the role of education;
- the perception of risk;
- the provision of information; and
- education strategies.

Benefits and risks are discussed in greater detail in Chapter 2.

The role of education

3.4 Consumer concerns about food safety, environmental safety and ethics have impeded acceptance of gene technology in Australia. The Australian Biotechnology Association (ABA) considered that, by providing factual information about the benefits and risks of gene technology, consumers will be able to make an informed, rational choice about the application of the technology.

> A better informed community is better able to make more informed decisions on the benefit and risks associated with the application of biotechnology and less likely to be influenced by scaremongers.[4]

3.5 Lack of consumer confidence in gene technology and the government authorities responsible for its regulation have generated public feelings of distrust and suspicion. Animated Biomedical Productions pointed out that secrecy by government and industry groups will only serve to increase these feelings. It considered that 'nothing undermines confidence more than the impression that those "in the know" regarding gene technology are keeping the knowledge, and its attendant risks, to themselves'.[5] Lack of trust can be a major impediment to consumer acceptance of gene technology. A survey of 18 to 25 year olds found that:

4 Australian Biotechnology Association, Submission no. 39, p. 8.

5 Animated Biomedical Productions, Submission no. 1, p. 2.

> They trust very few people. It was really quite a striking finding. They think everyone either can be or is being bought. That is a real issue that I think the government regulators need to recognise and in some way … address. Until the public trusts ANZFA, GMAC and IOGTR [Interim Office of the Gene Technology Regulator], there always will be this distrust of the technology.[6]

3.6 A number of submissions considered that public acceptance of gene technology is vital to its successful application within the Australian market.[7]

> The most significant impediment to the utilisation of genetically modified varieties by primary producers could be the rejection of genetically modified food products by consumers. If this occurs, there will be no consumer demand and no market for GM foods and therefore no market for GM agricultural products.[8]

Box 3.1 illustrates the impact of consumer sentiment on GM food.

3.7 Avcare considered that there is a need to provide balanced, factual information to the public, and both Avcare and Queensland's Office of Fair Trading highlighted the need for the community to participate in the decision making process.[9] Effective consumer participation in decision making is only possible if good information is available to all involved. Information is also crucial to consultative processes such as those established to develop the new legislation, and to provide input to the GTR's decisions.

Awareness and attitudes

3.8 Public awareness campaigns need to target the right information at the right audience. Background research needs to identify the levels of education that are needed, what information the community wants and how to provide appropriate information effectively. The Australian United Fresh Fruit and Vegetable Association pointed out that:

> Any education campaign has to begin with the consumer. What is their concern? How strong is this concern? What do they want? How can these concerns be addressed?[10]

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6 Agrifood Alliance Australia, Transcript of evidence, 29 September 1999, p. 189.

7 For example, Australian Barley Board, Submission no. 60, p. 4; Australian Biotechnology Association, Submission no. 39, pp. 8-9.

8 South Australian government, Submission no. 81, p. 5.

9 Avcare, Submission no. 61, pp. 6, 7; Office of Fair Trading, Queensland, Submission no. 13, p. 1.

10 Australian United Fresh Fruit and Vegetable Association, Submission no. 58, p. 4.

Box 3.1 Genetically modified tomato paste in the UK

In 1996, the supermarket chain Sainsbury's introduced a GM tomato puree in the UK. The tomato had a higher solids content than conventional varieties, which reduced the manufacturing costs involved in the production of foods like tomato paste. This reduction in costs was passed on to the consumer, so the GM product was cheaper than conventional products. In 1996, the GM paste was outselling conventional paste by a ratio of 2:1.

Sainsbury's aimed to be as open and transparent about the GM paste as possible, and in 1995 it made a press announcement about the paste's anticipated release. It ensured that its staff could provide customers with information, and produced an in-store leaflet about the product. The product was clearly labelled as GM.

Late 1997 through 1998 saw a growing concern in the UK about GM foods. During 1998, sales of the GM paste declined until it was selling at a ratio of 1:1 with conventional past. After Christmas 1998 when media coverage of GM issues increased, sales dropped to a very low level until Sainsbury's found that it was no longer economically viable to sell the product. At present, in response to consumer concerns, Sainsbury's has eliminated all GM ingredients from its products.

Source: British House of Commons Select Committee on Science and Technology, Scientific Advisory System: Genetically Modified Foods, Minutes of Evidence, http://www.parliament.the-stationery-office.co.uk/pa/cmselect/cmsctech/286/9042104.htm, *accessed 15 May 2000;* http://www.parliament.the-stationery-office.co.uk/pa/cmselect/cmsctech/286/9042105.htm, *accessed 15 May 2000.*

Levels of awareness and acceptability

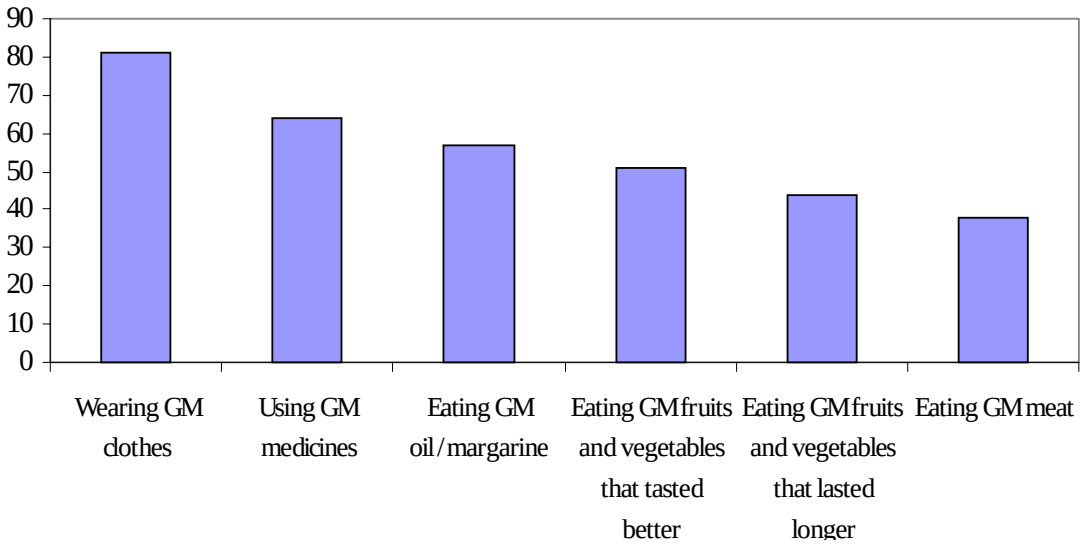
3.9 Several surveys on attitudes towards GM foods have been conducted. These surveys have provided information about public perceptions of gene technology and the reasons for those perceptions.

> A number of processes have gone on in the past, and several are going on now, to try to get an appropriate handle on what the level of consumer concern is, what the level of consumer information should be and to what extent there is misinformation affecting people's perceptions.[11]

11 Agriculture, Fisheries and Forestry Australia, Transcript of evidence, 20 September 1999, p. 150.

3.10 A survey commissioned by BA found that, while 92 per cent of participants had heard of the term 'genetic engineering', levels of awareness of its applications varied considerably (24–80 per cent).[12] The acceptability of gene technology differed depending on how the technology was used. Medical uses were the most acceptable, and manipulation of animals least acceptable. The nature of a particular GM product appears to determine public acceptance of GMOs (see Figure 3.1).

Figure 3.1 Percentage of people who would use GM products



Source: Yann Campbell, Hoare and Wheeler, Public attitudes towards biotechnology, p. 6, http://www.isr.gov.au/ba/WhatsNew/ychw.pdf, accessed 5 May 2000

3.11 A postal survey undertaken by CSIRO regarding public attitudes to genetic engineering and food found that:

- those who could define genetic engineering thought it had something to do with altering genes, mutation or cloning,
- 47 per cent of men thought the technology would make [life] better, compared to only 24 per cent of women,
- 70 per cent thought citizens had a role in decisions about technology,
- Only 20 per cent felt that the risks of genetic engineering had been exaggerated.[13]

12 Yann, Campbell, Hoare, Wheeler, *Public attitudes towards biotechnology*, pp. 2, 4-5, http://www.isr.gov.au/ba/WhatsNew/ychw.pdf, accessed 5 May 2000.

13 National Farmers' Federation, Submission no. 36, p. 19.

3.12 In a survey reported to a forum on transnational agri-food systems, participants were generally concerned about the risks of GMOs. Seventy six per cent considered that the accidental release of these organisms would cause environmental damage and 52 per cent considered that eating GM foods would have long term health effects (either positive or negative). Fifty two per cent felt that the risks of genetic engineering would outweigh the benefits. It was also found that 93 per cent of participants supported government control of GM foods, as well as consultation with consumers before the release of such foods.[14]

Risk perception

3.13 Consumer perceptions of risks associated with gene technology and their attitudes towards those risks can have a great impact on acceptance of the technology. Brendan Doyle of the University of New England's Rural Development Centre pointed out that attitudes can be founded on ethical as well as scientific reasoning. Social values and distrust of organisations can also be extremely important.[15] A recent report by the House of Lords stated that:

> Some issues currently treated by decision-makers as scientific issues in fact involve many other factors besides science. Framing the problem wrongly by excluding moral, social, ethical and other concerns invites hostility.[16]

3.14 Scientific perceptions of risk are based on identifying and characterising hazards, and determining the probability of their occurrence and possible consequences. Consumers, however, tend to focus on the consequences for them personally should the risk materialise and are less concerned with scientific perceptions of risk.[17]

> What the public finds acceptable often fails to correspond with the objective risks as understood by science. This may relate to the degree to which individuals feel in control and able to make their own choices.[18]

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14 J Norton, G Wood & G Lawrence, 'Public Acceptance of Genetically Engineered Food', Paper presented at the Forum on Critical Issues in Transnational Agri-food Systems, Queensland University of Technology, Brisbane, 1998.

15 Mr Brendan Doyle, Submission no. 3, p. 3.

16 House of Lords Select Committee on Science and Technology, Third Report, *Science and Society*, www.publications.parliament.uk/pa/ld199900/ldselect/ldsctech/38/3802.htm, accessed 3 April 2000.

17 Agriculture, Fisheries and Forestry Australia, Submission no. 77, p. 14.

18 House of Lords Select Committee on Science and Technology, Third Report, *Science and Society*, www.publications.parliament.uk/pa/ld199900/ldselect/ldsctech/38/3802.htm, accessed 3 April 2000.

3.15 Individuals' perceptions of risk vary according to the possibility of that risk affecting themselves, their families and their communities. The acceptability of that risk is weighed up according to the benefits the consumer will receive. **Medical applications are regarded as the most acceptable use of gene technology because individuals can see a direct benefit to themselves.**[19] **Similarly, consumers are more willing to wear wool from a GM sheep than consume that sheep's meat; they perceive a lower potential risk from wearing than from eating a GMO** (Figure 3.1).

3.16 The NFF believes that one of the barriers to consumer acceptance of gene technology is that there is little discernible benefit to consumers in the products on the shelves.[20] Presently, most of the benefits are gained by producers.

3.17 Another factor that affects acceptance of risk is the extent to which a choice exists over whether to take the risk or not. People are more prepared to take risks if they feel that they have a degree of control over them.[21] Labelling gene technology products, particularly GM foods, places the choice directly in the hands of the consumer. Brendan Doyle considered that 'consumers might also place value on having the right to be informed about the composition of processed foods they purchase'.[22]

3.18 The survey reported at the forum on transnational agri-food systems found 86-91 per cent of consumers felt that GM foods should be labelled. In addition, approximately 60-65 per cent considered that GM products which were not for consumption, such as the blue rose, or sheep genetically engineered for wool, should also be labelled.[23]

Addressing risk perceptions

3.19 Consumers have identified concerns over the safety of GM products and how this could possibly affect them. They have also identified information about the ethical and social aspects of the technology as important.[24]

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19 Agriculture, Fisheries and Forestry Australia, Submission no. 77, p. 14.

20 National Farmers' Federation, Submission no. 36, p. 17.

21 A Kellow, 'Risk assessment and decision-making for genetically modified foods', *IPA Biotechnology Backgrounder*, no. 1, October 1999, p. 3.

22 Mr Brendan Doyle, Submission no. 3, p. 3.

23 J Norton, G Wood & G Lawrence, 'Public Acceptance of Genetically Engineered Food', Paper presented at the Forum on Critical Issues in Transnational Agri-food Systems, Queensland University of Technology, Brisbane, 1998.

24 *First Australian Consensus Conference: Gene Technology in the Food Chain: Lay Panel Report*, Canberra, March 1999, p. 6.

3.20 AFFA pointed out that the technology should not be considered on a purely scientific level, and identified ethical, social economic and environmental concerns as important.[25] The Australian United Fresh Fruit and Vegetable Association outlined its experiences of addressing consumer concerns:

> It is not a scientific debate – it is an emotional one in which the consumer has genuine concerns. The fruit and vegetable industry has been through this issue with agricultural chemicals and residues. It was not until all consumer concerns were recognised that any headway on solving the various issues could be made.[26]

As a select committee of the House of Lords pointed out, public attitudes and values need to be recognised, respected and weighed along with scientific and other factors.[27]

3.21 The committee feels that, to be fully effective, an information campaign should acknowledge the value that consumers place on environmental, economic, ethical and social considerations, and address them. The government funded public awareness campaign, which is described later in this chapter, must pay attention to these issues.

Recommendation 4

3.22 **The committee recommends that all public education campaigns funded by the Commonwealth government recognise and address the environmental, economic, cultural, ethical and social concerns of the consumer.**

Provision of information

3.23 Information such as that presented in the two previous sections is useful in designing public awareness campaigns. It assists with the choice of material to be presented and the manner in which it is provided. Several submissions to the inquiry commented specifically on these matters,

25 Agriculture, Fisheries and Forestry Australia, Submission no. 77, p. 15.

26 The Australian United Fresh Fruit and Vegetable Association, Submission no. 58, pp. 3-4.

27 House of Lords Select Committee on Science and Technology, Third Report, *Science and Society*, www.publications.parliament.uk/pa/ld199900/ldselect/ldsctech/38/3802.htm, accessed 3 April 2000.

emphasising the importance of unbiased, open and credible information.[28] Some submissions called for information about all aspects of the technology to be made available.[29] Others stressed the particular need for information relating to:

- general aspects of gene technology;[30]
- the benefits and risks of gene technology;[31] and
- how the regulation of gene technology addresses the risks posed by its use.[32]

3.24 The first Australian consensus conference on dealing with gene technology in the food chain identified detailed scientific information about the technology as less important than understanding how the technology could be used and the consequences of its use.[33] As AFFA pointed out:

> Public information campaigns on gene technology tend to focus on making the public familiar with the intricacies of the technology and reducing the opposition to the technology by reducing the 'unknown'. Several experiences have shown this tactic not to work; it often strengthens peoples' opinions, both in support of and opposition to the technology … [34]

Notwithstanding these points, the committee believes that it is important that information continue to be available about developments in gene technology and detail past, current and future projects.

3.25 AFFA suggested that there is a need to listen to consumers, as well as provide them with information.[35] CSIRO agreed and considered that 'it is critical to involve all stakeholders and engage [in] an informed and public debate seeking to resolve issues rather than just creating conflict and polarisation'.[36] The Grains Research and Development Corporation

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28 For example, Avcare, Submission no. 61, p. 11; Interim Office of the Gene Technology Regulator, Submission no. 78, p. 16; The National Association for Sustainable Agriculture, Submission no. 74, p. 2.

29 For example, Mr Wayne Hancock, Submission no. 6, p. 6; Western Australian government, Submission no. 48, p. 6.

30 Australia and New Zealand Food Authority, Submission no. 63, p. 5.

31 Australia and New Zealand Food Authority, Submission no. 63, p. 5; Dairy Research and Development Corporation, Submission no. 15, p. 7.

32 Australia and New Zealand Food Authority, Submission no. 63, p. 5.

33 Agriculture, Fisheries and Forestry Australia, Submission no 77, p. 15.

34 Agriculture, Fisheries and Forestry Australia, Submission no 77, p. 15.

35 Agriculture, Fisheries and Forestry Australia, Submission no. 77, p. 15.

36 CSIRO, Submission no. 56, p. 6.

(GRDC) stated that lessons learnt during the consensus conference may assist in formulating an open approach to education.[37]

3.26 Agrifood Alliance Australia (AAA) also pointed out the significance of having advice available from trustworthy sources.

> Consumers are not interested in being "educated about" or "preached to" about the benefits or risks of new innovation and technologies. Rather, the community requires access to quality information and advice from a body which they trust on which to base their choices.[38]

3.27 In this context, providing information about how the regulatory system operates and how it reaches its decisions are important, as discussed in Chapter 7. Novartis commented with respect to the role and nature of its regulatory processes that the government needs to communicate and:

> … act to ensure that they are viewed credibly by consumers. It is particularly critical that government is active in communicating the credibility of systems that assess the safety to the environment and human health of genetically modified crops. It is apparent that at present, the need for concerns about safety to be addressed far outstrips other issues.[39]

Education strategies

3.28 BA is currently the leading government agency responsible for providing information on gene technology to the public. BA carries out this task as part of its role of ensuring that, 'consistent with safeguarding human health and ensuring environmental protection, Australia captures the benefits of biotechnology for the Australian community, industry and the environment'. BA was established in 1999 as the focal point for the policy measures needed to facilitate the development of biotechnology. It reports to a ministerial council comprising the Ministers for Industry, Science and Resources; Agriculture, Fisheries and Forestry; Education, Training and Youth Affairs; the Environment and Heritage; and Health and Aged Care. In addition to raising public awareness about biotechnology, BA is:

- developing a national biotechnology strategy;
- supporting training for developers and managers of IP; and

37 Grains Research and Development Corporation, Submission no. 47, p. 16.

38 Agrifood Alliance Australia, Submission no. 37, p. 6.

39 Novartis Australia, Submission no. 26, p. 9.

- securing better access to genetic resources and gene collections.[40]

3.29 In the 1999-2000 budget, BA received funding to conduct a public awareness campaign over two years; the 2000-2001 budget provides $3 million for this purpose. BA has so far provided information through public forums and debates, conferences and seminars, the media, the internet, and its telephone hotline. Among the fact sheets that it has produced is a brochure about GM foods that has been distributed through major supermarket chains in Australia.[41] An information kit for secondary school teachers is being developed. BA also plays an important role in coordinating information provided by the regulatory agencies and CSIRO.[42]

3.30 Several submissions identified ways of providing information to the public. These included:

- fact sheets and pamphlets;[43]
- media and the internet;[44]
- labelling;[45]
- consensus conferences and public forums;[46] and
- field days.[47]

3.31 Fact sheets and pamphlets are published by a number of government, industry and community bodies. The ABA, for example, supports the need to inform the community regarding gene technology, and has produced 12 pamphlets describing gene technology and its applications.[48] Fact sheets are also produced by CSIRO, ANZFA, the Therapeutic Goods Administration, and a number of biotechnology companies.

3.32 A number of submissions expressed concern about the portrayal of gene technology in the media, both through traditional sources and through the

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40 Biotechnology Australia, 'Biotechnology - a framework for the future'.

41 Department of Industry, Science and Resources, Submission no. 84, p. 2.

42 Biotechnology Australia, http://www.isr.gov.au/ba/Biotechnology/consultation.html, accessed 5 April 2000.

43 For example, Australian Biotechnology Association, Submission no. 39, p. 8; Interim Office of the Gene Technology Regulator, Submission no. 78, p. 16; The Veterinary Manufacturers and Distributors Association, Submission no. 76, pp. 2, 11.

44 For example, Australian Academy of Science, Submission no. 62, p. 4; Australian Barley Board, Submission no. 60, p. 11; Dr Brian Booth, Submission no. 7, p. 6.

45 For example, NSW Farmers' Association, Submission no. 38, p. 2.

46 For example, Heritage Seed Curators Australia, Submission no. 30, p. 2; Organic Federation of Australia, Submission no. 24, p. 2.

47 Mr Mal and Ms Nancy Robinson, Submission no. 18, p. 2.

48 Australian Biotechnology Association, http://www.aba.asn.au, accessed 14 April 2000.

internet.[49] The availability of balanced, factual information on which the media can draw is therefore important. As an increasingly important media tool, the internet provides better opportunities for the public to be fully informed than before.[50] In a recent survey, the internet was cited as the preferred source of information about biotechnology.[51] Many of the pamphlets and fact sheets mentioned above are available on the internet.[52]

3.33 The committee is aware of the large amount of useful information available on government internet sites. It understands, however, that some of these sites are less user friendly and intuitive than others, and not all are updated regularly. Among the regulators, ANZFA's site and that of the Interim Office of the Gene Technology Regulator (IOGTR) suffered from some of these problems at the time that the committee's report was being prepared. The committee believes that these faults could and should be quickly rectified.

Recommendation 5

3.34 **The committee recommends that government agencies, especially the Interim Office of the Gene Technology Regulator and the Australia New Zealand Food Authority, review the design of their internet sites to ensure they are user friendly.**

Sites should lay out clearly what they contain, be easily navigable, and present readily understood information which is updated regularly.

49 For example Australian Raw Sugar Industry, Submission no. 64, p. 7; National Farmers' Federation, Submission no. 36, p. 17; Nugrain, Submission no. 25, p. 12.

50 Australian Academy of Science, Submission no. 62, p. 4.

51 Yann, Campbell, Hoare, Wheeler, *Public attitudes towards biotechnology*, p. 7, http://www.isr.gov.au/ba/WhatsNew/ychw.pdf, accessed 5 May 2000.

52 For example, CSIRO, http://www.genetech.csiro.au; Therapeutic Goods Administration for access to the IOGTR's web site, http://www.health.gov.au/tga/genetech.htm; Australia New Zealand Food Authority, http://www.anzfa.gov.au; Monsanto, http://www.monsanto.com.au/sitemap/fact/default.htm; Biotechnology Australia, http://www.isr.gov.au/ba.

Recommendation 6

3.35 **The committee recommends that Biotechnology Australia, in its role as the coordinator of information about gene technology provided by government departments, monitor the efficiency and effectiveness with which material is presented.**

Biotechnology Australia should regularly publicise all information from the Gene Technology Regulator, including information about the regulator's role and function.

3.36 Labelling of GM products is another way of providing information to the public and may help to increase consumer confidence.[53] The lay panel report from the consensus conference recommended that all GM foods, regardless of where modification occurs, should be labelled to allow free and informed consumer choice.[54] Many submissions to the inquiry supported labelling for the same reason.[55]

3.37 The lay panel recognised the difficulties associated with labelling.[56] From a regulatory perspective, labelling is highly complex and has the potential to be misleading. Information that is provided on a label could be interpreted in a number of ways by consumers, including that GM products are unsafe.

3.38 Consensus conferences and public forums are useful in raising awareness of gene technology issues. The Consensus Conference on Gene Technology in the Food Chain was aimed at assisting citizens to participate in an informed way in the debate and to contribute to developing public policy in this area. It brought together members of the community and participants from both sides of the gene technology debate, and culminated in a report to the government by a lay panel of 14 members.[57]

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53 Australian Biotechnology Association, Submission no. 39, p. 8.

54 *First Australian Consensus Conference: Gene Technology in the Food Chain: Lay Panel Report*, Canberra, March 1999, p. 8.

55 For example, Heritage Seed Curators Australia, Submission no. 30, p. 9; Mr Alan Griffiths, Submission no. 22, p. 1.

56 *First Australian Consensus Conference: Gene Technology in the Food Chain: Lay Panel Report*, Canberra, March 1999, p. 8.

57 C Renouf, 'Rebirthing democracy: the experience of the first Australian consensus conference', *Consuming Interest*, Autumn 1999, p. 17.

3.39 The consensus conference was generally received positively by all involved, and was well covered by the media. In a review of the conference, the GRDC found that there was broad support for the conference, and concluded that:

> The consensus conference bolstered support for and helped lock in a number of the decisions in the May 1999 budget announcements. The credibility of the Consensus conference is enhanced by the fact that Ministers have chosen to publicly attribute influence to the Lay Panel's Report in arriving at these decisions.

However, they also stated that:

> Overall our conclusion is that the CC [consensus conference] process has not significantly softened or ameliorated the polarisation of beliefs and positions in relation to genetic engineering in the food chain; if anything it may have entrenched this polarisation, at least between the 'fundamentalists' on either side.[58]

3.40 Public forums also received support in submissions to the inquiry.[59] They are useful in disseminating information and can also be used to elicit responses from different interest groups that can feed into policy formation. An example of this process is the series of public meetings held by the IOGTR in all states during February and March 2000 to encourage public comment on the draft Commonwealth Gene Technology Bill 2000.[60] A series of one day forums is being organised by BA to raise awareness of the issues surrounding GM crops. They will be held in rural areas over the next year, and comprise presentations and panel discussions involving regulators, organic and GM farmers, scientists and economists.

3.41 Field days and seminars were listed by farmers as the two most effective ways of delivering information on gene technology.[61] The response to a series of gene technology workshops held in regional areas of Western Australia was extremely positive, with all participants indicating that they

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58 A Crombie & C Drucker, *The First Australian Consensus Conference: Gene Technology in the Food Chain: Evaluation: Phase 2 Report*, February 2000, p. vi.

59 Heritage Seed Curators Australia, Submission no. 30, p. 2; Organic Federation of Australia, Submission no. 24, p. 2.

60 Therapeutic Goods Administration, http://www.health.gov.au/tga/gene/genetech/consult.htm, accessed 30 March 2000.

61 Orima Research, *Summary of the Survey of Farmers Perceptions on Genetically Modified Foods,* Agrifood Alliance Australia, November 1999.

would recommend the workshop to other people interested in gene technology in agriculture.[62]

3.42 Other ways of providing information have included hypotheticals,[63] public lectures and telephone hotlines.[64] A recent survey has found that 32 per cent of respondents would call an 1800 number for more information.[65] CSIRO and BA have both established telephone hotlines to answer public inquiries regarding gene technology.

3.43 The committee believes that the range of sources of information about gene technology that is available, and the different forms in which it is presented, will assist in taking the information to as many people as possible. The committee regards it as important to monitor, as time passes:

- changes in attitudes towards, and awareness of, biotechnology; and
- the effectiveness of the different forms of communication in conveying information.

With this information, future public awareness campaigns can be fine tuned.

The role of government and industry

Government

3.44 There are, as Novartis pointed out, a range of stakeholders with differing information needs. Under these circumstances, it is entirely appropriate for community education to be shared by a number of different government and industry parties.[66]

3.45 A key issue identified in a number of submissions is the lack of trust consumers have in government agencies, and the fear of monopoly and control by overseas multinational companies.[67] **The challenge for government in particular is thus to ensure that information is provided in an open manner, and by a body which is not only independent but seen to be independent.**

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62 J Gibbs, 'Agriculture and gene technology - the bread and butter issues', Report prepared on a workshop initiative by the Centre for Legumes in Mediterranean Agriculture Education Program and CY-O'Connor Campus of TAFE, Northam, Western Australia, 1999, p. 1.

63 Western Australian State Agricultural Biotechnology Centre, Submission no. 10, Attachment.

64 CSIRO gene technology, http://www.genetech.csiro.au, accessed 15 April 2000; Department of Industry, Science and Resources, Submission no. 84, p. 2.

65 Department of Industry, Science and Resources, 'Consumers after more balanced information on GM foods', Media release, May 5 2000.

66 Novartis, Submission no. 26, p. 9.

67 For example, Mr Russell McGilton, Submission no. 51, p. 1; Mr Arnold Ward, Submission no. 41, p.20.

3.46 A survey commissioned by BA showed that the public currently places more trust in CSIRO than in other government or industry bodies.[68] However, as CSIRO has strong research ties with a number of biotechnology companies, in the long term it may not be perceived as unbiased and impartial.

3.47 The committee believes that, if BA is to be a credible source of information, it must not only be seen to be independent, but must also be independent. The committee is therefore concerned that the framework, within which BA operates, does not provide it with the necessary independence to be seen to be providing unbiased information. The committee therefore recommends that BA become a statutory authority. The status of a statutory authority would place BA at arms' length from ministerial control while still being accountable to the Parliament and subject to audit by the Auditor-General.

Recommendation 7

3.48 **The committee recommends that Biotechnology Australia be made a statutory authority.**

Recommendation 8

3.49 **The committee recommends that the Commonwealth government, through Biotechnology Australia:**

- **monitor understanding and awareness of biotechnology; and**
- **assess the effectiveness of its current public awareness campaign and the need for additional information.**

68 Yann, Campbell, Hoare, Wheeler, *Public attitudes towards biotechnology*, p. 7, http://www.isr.gov.au/ba/WhatsNew/ychw.pdf, accessed 5 May 2000.

Recommendation 9

3.50 **The committee recommends that information provided by Commonwealth agencies about gene technology:**

- **detail the independence, transparency and accountability of the regulatory processes;**
- **give equal prominence to information about the risks and benefits; and**
- **detail how the regulation of gene technology is able to avoid or minimise risk.**

3.51 The committee believes that the level of public awareness of regulatory bodies in Australia is very low. This contrasts with the situation in the USA where 'the average consumer … knows more about the FDA [Food and Drug Administration] than the average Australian consumer does about ANZFA'.[69] The committee believes that the greater acceptance of GMOs in the USA than in Australia may have been associated with greater knowledge of regulation in that country. The committee recognises that some information about regulation of gene technology in Australia is already available and welcomes this. The committee believes that, if recommendations in this chapter are implemented, the public will be in a better position to find out about gene technology and its regulation than they are at present.

3.52 The committee also considers that providing lists of other sources of information or internet links to other sites is a helpful way of enabling the public to follow up particular concerns. It is the committee's view that access to information presenting different points of view is likely to reduce the sceptics' impression that they are being told only one side of the story. The committee is aware that most government internet sites link to others, including industry, overseas and consumer groups.[70]

69 CSIRO, Transcript of evidence, 18 October 1999, p. 212.

70 For example, the Department of Health and Aged Care, http://www.health.gov.au/tga/gene/genetech/purpose.htm, accessed 9 May 2000.

Industry

3.53 Several of the bigger businesses involved with gene technology provide information about the technology and its use, for example, Monsanto.[71] In other cases, businesses have combined to make information available, as in the case of AAA, which comprises farmers, industry and R&D organisations.[72] Another source of information is the Food Science Bureau which was established in 1999 by the AFGC. There is an important role for food manufacturers and retailers in the provision of information to the public, as Novartis pointed out.[73]

> It has been Novartis' experience that communication to consumers closer to the point of sale, that is, through food manufacturers and retailers, may be more effective than communication from seed companies.[74]

3.54 The Food Science Bureau is currently funded solely by the AFGC. It aims to provide consumers with access to independent, credible, science-based information about biotechnology, and to encourage accurate and balanced discussion of food and food technology issues. The AFGC has 170 members who come from organic, conventional and gene technology industries. The council believes that it is an impartial body because it is driven by consumer choice, irrespective of industry and government views on gene technology.

> We do not consider ourselves in a position to promote or defend this technology *per se*. Our responsibility lies in pursuing a market conducive to innovation and a market conducive to independent commercial decisions about investment in the development and about the application of this technology in food and grocery products.[75]

71 Monsanto's, http://www.monsanto.com.au, accessed 20 April 2000.

72 Agrifood Alliance Australia, http://www.afaa.com.au/papers.htm, accessed 7 May 2000.

73 Novartis Australia, Submission no. 26, p. 9.

74 Novartis Australia, Submission no. 26, p. 9.

75 Australian Food and Grocery Council, Transcript of evidence, 30 August 1999, p. 114.