

MCOM591-C Dissertation

**The New Zealand Christian Community takes a stand  
during the Royal Commission on Genetic Modification**

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## **Abstract**

Although public opinion and attitudes regarding biotechnology have been extensively researched in numerous countries, and recently discussed in New Zealand, there has been limited discussion about how these opinions are formed and the way in which they are expressed. This investigation explores how spiritual issues of importance in the field of biotechnology are communicated. The investigation focuses on how the Christian community in New Zealand established their discursive position on genetic modification. The investigation involved an analysis of the submissions made to the Royal Commission on Genetic Modification as this was an important opportunity for the public in New Zealand to express how they felt about genetic modification.

The findings of the investigation suggest that the Christian community considered they had a responsibility to comment on the ethical and social questions regarding genetic modification. Debate around the science involved was seen as a minor issue; the concern of the Christian community focused on an ethical responsibility to realise the effect of decisions on the environment, on human beings and the importance of understanding the future consequences of decisions. The concerns were discursively constructed using articulation and extensive intertextuality.

The ideological position established by the Christian community provides new insights to Beck's notion of 'risk society'. The focus is shifted from the development of science and technology because the Christian community highlights social and ethical aspects of potential risk. The construction of the community as an 'expert' is reinforced by the Christian community. They suggest the community is able to most accurately assess the social, cultural, ethical and spiritual implications of genetic modification for New Zealand.



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Template used for submissions to the Royal Commission on  
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The 'Terms of Reference' for the Royal Commission on Genetic  
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# 1. Introduction

## Background

Extensive debate has taken place in New Zealand over the past few years regarding genetic modification. A number of groups, with wide ranging opinions and beliefs, have become involved in the debate both at an informal level and through the formal process of the Royal Commission on Genetic Modification (RCGM). The RCGM was established by the New Zealand Government in 2000 and given the responsibility of facilitating a formal enquiry to investigate public attitudes towards genetic modification in New Zealand (Royal Commission on Genetic Modification, 2001). The RCGM undertook the process of gathering public opinion from around New Zealand, and in July 2001 reported their findings and 49 recommendations to the New Zealand Government. The report presented by the RCGM was over 1200 pages in length and was released as a report with three appendices.

The RCGM provided three ways for the public to participate in the enquiry: public meetings and a number of regional hui were held around New Zealand; individuals could make a written submission regarding genetic modification; and groups could apply to be granted 'Interested Persons' (IP) status allowing them to make a written submission and attend a formal hearing with the Commission<sup>1</sup>. Among the 107 groups who were granted IP status there were 5 churches and groups<sup>2</sup> who represented the Christian community in New Zealand: The New Zealand Catholic Bishops' Conference, The Anglican Church in Aotearoa NZ and Polynesia, Quaker Spiritual Ecology Group (Religious Society of Friends), Interchurch Commission on Genetic Engineering (representing the Anglican, Methodist and Presbyterian churches) and finally the Public Questions Committee (representing the Methodist, Presbyterian, Church of Christ and Quakers churches) (Royal Commission on Genetic Modification, 2001 a)<sup>3</sup>.

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<sup>1</sup> Throughout this report when referring to the 'submissions' which have been made the term is being used to refer to both the written submissions which were presented and the appearances made at the RCGM formal hearings by those groups granted IP status.

<sup>2</sup> The term 'groups' is in reference to both individual church communities and combined church groups who made submissions on the basis that all of the submissions were made of behalf of groups of people, regardless of the size or composition of these groups. The term 'community' will also be used throughout this report to refer collective groups of churches.

<sup>3</sup> The official names of churches and groups who made submissions will be abbreviated throughout this report to the following: Catholic Bishops, Anglican Church, Quakers, ICGE and PQC.

## **Research Questions**

The purpose of this investigation is to understand how the Christian community established and presented their views on genetic modification through the RCGM. This investigation will explore the way in which the formal process of being granted 'IP' status and making a submission was utilized by the Christian community in order to voice their position regarding genetic modification. The following research questions provide the central focus of this investigation:

- 1. What are the central issues regarding genetic modification which the Christian community in New Zealand considered to be important?*
- 2. How did the Christian community discursively represent their views<sup>4</sup> on genetic modification in the formal submissions made to the Royal Commission on Genetic Modification?*

An extensive body of research has been developed regarding public attitudes towards biotechnology, however, this investigation provides a uniquely New Zealand perspective on the Christian communities' attitudes towards biotechnology. Research has previously canvassed the general public attitude and this investigation takes a step further by considering the attitudes of a distinct group in the community - those bound by the common beliefs of Christianity.

## **Structure of Investigation**

A number of topics will be incorporated in the literature review as they provide a framework and background for this investigation. The notion of a 'risk society' which has been developed by Beck (1992, 1999, 2000) will be explored as it is a useful way of understanding the complex nature of society today. The field of bioethics, a term which emerged in the 1970's and continues to be used, will be presented as it is within this arena that the Christian community establishes their position on genetic modification. International research which has been conducted exploring public attitudes towards genetic modification will be outlined, including the findings of the recent 'GM Nation?' (GMN) debate conducted in the United Kingdom. The final segment in the literature

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<sup>4</sup> An impartial predetermination or judgement on the stance which the Christian community takes regarding genetic modification was intentionally taken prior to and throughout this investigation. This allows their position on the issue to emerge from the data without it being assumed by the researcher.

review will outline research and comment which has been made by researchers who have considered and commented specifically on the RCGM in New Zealand.

The investigation will be conducted using a Critical Discourse Analysis (CDA). The methodology which Fairclough has established will be explained before being applied as a method of analysis of the submissions made to the RCGM by the Christian community.

## 2. Literature Review

### Risk Society

The notion of risk is explored by Beck (1992, 1999, 2000; see also Boyne & Beck, 2001) who suggests that we are now living in a 'risk society', and specifically discusses the risks associated with scientific and technological development and discovery. When explaining the concept of risk Beck states,

“Risks do not refer to damages incurred. They are not the same as destruction...The discourse of risk begins where our trust in our security ends and ceases to be relevant when the potential catastrophe occurs. The concept of risk thus characterizes a peculiar, intermediate state between security and destruction, where the *perception* of threatening risk determines thought and action” (1999, p. 135, italics original).

Beck is referring to the possibility of something occurring in the future, and suggests that we are now living in a 'risk society' - a society which is continually surrounded (and driven) by the possibility and perception of potential risks. Scientists have developed new technology and new areas of science and, as a consequence, have opened up the possibility for new risks which society must consider.

In explaining the changes that have created a 'risk society', Beck (1999) describes the transition which has taken place from modernity to second modernity (others describe it as post-modernity which Beck refutes). Modernity is the term used to describe a society based on individual nation states with defined boundaries. This form of society has been challenged and changed and has moved into second modernity due to globalization, individualization, gender revolution, underemployment and global risks (Beck, 1999). The challenge to society comes as these previously strong and clearly structured boundaries are no longer dominant and, “the very idea of controllability, certainty or security – which is so fundamental in the first modernity – collapses” (p. 2). The evolution of society brings with it a new set of challenges in the form of risks which were previously unknown.

What is significant about the 'risk society' is that the focus has shifted from the past to the future. Beck explains, “...in the risk society the unknown and unintended consequences come to be a dominant force in history and society” (1992, p. 22). Beck expands on this when he writes,

“The past loses its power to determine the present...We are discussing and arguing about something which is *not* the case, but *could* happen if we continue to steer the same course as we have been. Believed risks are the whip used to keep the present day moving along at a gallop” (1999, p. 137, italics original).

The possible future consequences of actions taken today are a central concern in a ‘risk society’. The greatest challenge comes from knowing that no-one can escape, as all of society may be affected by the decisions made today (see also Boyne & Beck, 2001; Levitas, 2000; Scott, 2000).

Adam and van Loon (2000) suggest that risks related to gene technology are at the forefront of societal concern and, “gene technology has taken over where concern about nuclear technology has been shelved” (p. 3). The unknown consequences of biotechnology and the possibility of harm contained in science and technology are clearly felt by the public, and cause them to be concerned (Beck, 1992). Biotechnology is central to modern scientific discovery and society must consider the risks which are associated with developments in biotechnology.

One of the consequences of modern risk society, according to Beck (1992, 1999), is that ‘experts’ are no longer the sole assessors of risk. Traditionally ‘experts’ were seen as those with knowledge and were often given the ability and responsibility to make decisions on behalf of society. Beck (1999) points out that there is a new struggle for power to establish who is responsible for defining the risks associated with a technology. The tension between scientists and the public regarding the establishment of experts has been explored by Wynne (1996, 2001) who suggests that rejection of scientists as ‘experts’ is due to a lack of trust and credibility; both of these concerns continue to be central in discussion regarding genetic modification and will be explored throughout this investigation.

Jones (2002) argues that due to the existence of a ‘risk society’ the voice of the public is becoming central in society. Jones suggests, “In the absence of clear guidelines from government and science about risk in society today, it is left to the individual to change his or her lifestyle to match their own *perception* of the risk involved.” (p. 51, italics original). Jones is suggesting that the government and science community no longer able

to adopt 'expert' status and as a result the public has a newfound responsibility to negotiate.

### **Public Trust**

Connected to the development of a 'risk society' and the changing perception of the expert is the question of who can be trusted to assess the probability of risks and to make decisions which ensure that potential risks are minimized. If the public is to trust the government and industry then they must at least be seen to be credible. Frewer, Howard & Shepherd (1998) discuss the importance of credibility when communicating potential risks and suggest that government and corporations do not have enough credibility and trust to effectively discuss risks with the public. Frewer (2003) points out that "increased public distrust (both in the processes of science and regulatory institutions) has been identified as a key driver of public negativity towards different applications of biotechnology in general, and GMFs [genetically modified foods] in particular" (p. 319) and suggests that the biotechnology industry needs to be seen to have public interests at heart in order to be trusted by the public.

Gregory (2003) challenges the view that simply providing more information is going to provide a solution and lead to greater trust and suggests, "when people clamour to know more about the science...it is invariably because the scientists, their institutions or their paymasters are not trusted" (p. 133). Welsh and Evans (1999) describe the lack of public knowledge as the 'deficit model', and explain that the scientific community often assumes that if the public knew more about the subject they would automatically have greater appreciation, however this is clearly not how the public views knowledge. According to Gregory (2003) knowledge and trust are closely connected but knowledge does not necessarily imply trust and "if we are trying to sell genetically modified crops by teaching people genetics, we may be disappointed" (p. 133). Research has shown that increased knowledge leads to a range of attitudes being developed, so while some people become more accepting of the technology others become more opposed as they acquire more information (Gregory, 2003; see also GM Public Debate Steering Committee, 2003).

Burke (2003) believes that the problem is not a "technical failure in the risk assessment process" (p. 93) but rather a lack of trust in the regulatory process and advocates

continued transparency, accountability and inclusivity when negotiating what is acceptable during the risk assessment process regarding genetic modification. There is concern that this will not go far enough to reinstate the public trust which has been lost. Burke believes that the next step in regaining trust is for the science community to become professional in their approach, confident in their work (without becoming defensive) and to ensure that untrustworthy science is exposed. Frewer, Howard, Hedderly and Shepherd (1999) support an openly transparent process and suggest that part of the solution is for;

“Distrusted sources [to] work on improving their credibility rather than opting out of a responsibility to inform the public. It is suggested that being proactive in the provision of information about potentially controversial new technologies will improve perception of source honesty. In addition, if distrusted sources are also responsible for regulating new technologies, it is essential that these processes be transparent and open to public scrutiny” (p. 47).

Establishing a relationship with the public based on trust is an ongoing challenge with no simple and immediate solution. Working to ensure that trust is regained, however, is essential in the context of the ‘risk society’.

## **Bioethics**

The term ‘bioethics’ emerged in 1971 and was first explored by Potter, who considered that science and technology should “bring in greater emphasis on human values and ethics” (1971, p. 11). Potter argues that we should not be focused solely on advancing scientific knowledge but looking for wisdom in how we should apply the knowledge that had been acquired. Potter’s concern about the tension between knowledge and wisdom is evident when he writes about medical science,

“The moral problem arises because medical science has achieved partial success in maintaining the machinery without maintaining the man. And the individual physician can only do his best. The means to end life swiftly and painlessly are well known, but who is to make the decision? The knowledge of the means is dangerous knowledge, but in the long run it cannot be left in the hands of the physician alone or even in the hands of a committee” (1971, p. 73).

Potter was aware that scientific knowledge and discovery was continually advancing, but he was questioning whether scientific discovery should be left in the hands of scientists or if society needed to give consideration to how the knowledge should be applied.

The notion of bioethics which Potter presents has continued to be explored and expanded as scientific knowledge continues to develop. Whitehouse (2003) has recently returned to Potter's work and suggests that modern society must think not just about what is acceptable and appropriate but about relationships and connections with other as human beings and the influence which this has on decision making.

The relevance of ethics in modern biotechnology in New Zealand has been explored by Nicholas (1997, 1999, 2001) who believes the challenge we face is crucial as, "gene technology...takes away some physical constraints on our actions, [so now] we are left with the need for ethical constraints" (1997, p. 13). Nicholas realizes the need to ensure ethical constraints are established to guide the development of scientific knowledge but also identifies that knowledge is socially and politically constructed and influenced. The challenge has become increasingly complex because appropriate ethical boundaries must be considered in order to guide the use of scientific knowledge within politically driven societies.

While exploring the many issues which come under 'modern bioethics', Beauchamp and Walters (1999) explain three principles which are at the centre of, and which they believe underpin, modern bioethics. The first principle is '*respect for autonomy*' which allows individuals to have free will and to make their own decisions. The principle of '*beneficence*' is identified and explained as ensuring that no harm is done. The final principle which is discussed is '*justice*' towards others, which is treating others according to what is fair, due or owed. These three principles provide an ideal framework within which questions of ethics in biotechnology can be considered.

### **International Research**

Research into consumer attitudes towards genetic modification has been conducted around the world. One of the largest research projects recently conducted was the 'GM Nation?' (GMN) debate which was commissioned by the British Government, and was part of an extensive review of genetic modification and future possibilities associated with the science associated with GM. The review was broken into three separate research investigations; a review of the science, a study of the costs and benefits and the GMN Debate (providing the opportunity for public feedback). The debate was

undertaken in 2003, following the RCGM enquiry in New Zealand. Specifically the GMN debate aimed to;

“promote an innovative, effective and deliberate programme of debate on GM issues, framed by the public against the background of the possible commercial production of GM crops in the UK and the options for possibly proceeding with this. Through the debate, provide meaningful information to Government about the nature and spectrum of the public’s views, particularly at grassroots level, to inform decision-making” (GM Public Debate Steering Committee, 2003, p. 11).

Following the debate the steering committee reported seven key messages which were a representative summary of the comments aired throughout the debate. The key messages presented in the GMN report were;

1. People are generally uneasy about genetic modification
2. The more people engage in the issues the harder their attitudes and more intense their concerns
3. There is little support for early commercialization
4. There is widespread mistrust of the government and multi-national companies
5. There is a broad desire to know more and for further research to be done
6. Developing countries have special interests
7. The debate was welcomed and valued (GM Public Debate Steering Committee, 2003)

In response to the GMN debate Devereux (2003) explains that the actions taken by the government must be responsive and inclusive of the public feeling following the GMN debate. She writes, “if the government ignores the findings of the debate, it will only increase feelings of suspicion and lack of trust and will make it significantly harder to engage people in any similar future exercises” (p. 220). Harvey (2004) questions the feasibility of the GMN debate by suggesting that asking the public to debate the technical aspects of genetic modification is not appropriate and supports the view that consideration must be given to more than just scientific (or technical) issues when discussing genetic modification. Harvey’s suggestion is that the science community must look after the technical aspect and the public should be invited to be involved in establishing the moral and social issues which emerge. This is an area the public is clearly concerned about and may be able to make a valuable contribution to the debate.

The RCGM and the GMN debate were both large scale nationwide investigations which were government funded with the objective of exploring public opinion regarding genetic modification. In addition to these projects, a number of small scale

research projects (using methods such as random samples, interviews and small focus groups) have been undertaken in various countries in an attempt to explore and understand public attitudes regarding genetic modification. Research to date has been undertaken in the United States of America (Beckwith, Hadlock, & Suffron, 2003; Hanson, 1997), United Kingdom (Braun, 2002; Burke, 1999; Burke 2003; Frewer, Howard & Shepherd, 1998a), Germany (Hampel, Pfenning & Peters, 2000; Zwick, 2000), New Zealand (Fortin & Renton, 2003) and even Argentina (Mucci & Hough, 2003) among other places. Several key issues in these research projects are issues which continue to emerge and are consistent with the findings of the RCGM and the GMN debate. Identifying these issues provides a framework against which the opinions on the Christian community in New Zealand can be considered. The central issues which have been identified throughout these empirical studies, and will be discussed, are consumer assessment of risk, lack of public trust towards scientists, governments and multinational corporations, the importance of moral and ethical concerns, and public response and acceptance of different types of genetic modification.

### ***Consumer Assessment of Risk***

Beckwith, Hadlock, and Suffron (2003) report that focus groups mentioned the issue of uncertainty and the need for testing to be rigorous in order to try and minimize future risks. Burke (1999) attempts to discover why people are concerned about the risks of biotechnology. He suggests that the public are concerned about public safety, about environmental effects and about consumers having choice. All of the concerns which Burke discusses are based on concern for the unknown consequences (risks) of biotechnology in the future.

Hampel, Pfenning and Peters (2000) make comparisons between those who support and those who oppose genetic modification as part of their research and discover that 80% of people who were interviewed considered that the risks involved can not be controlled. Interestingly, there was no noticeable difference of opinion about the existence of uncontrollable risks between those who supported and those who rejected the technology.

Public concepts of risk are not the same as the concept of risk which politicians, scientists and entrepreneurs are comfortable using (Gregory, 2003; Zwick, 2000; Burke, 2004).

Frewer (2003) explains that public perception of risk must be acknowledged as, “risk perception is socially constructed, and...it is the psychological representation of risk that defines people’s responses to a particular hazard, rather than the technical risk estimates traditionally provided by experts” (p. 321). Regardless of whether government or industry provides guidelines about risks or not public perception of the risks in science (and directly related to genetic modification) can not be ignored by the industry.

### ***Lack of Public Trust***

The lack of public trust in corporations, scientific institutions and political decision-makers is a concern which frequently appears when discussing public opinion regarding genetic modification (Burke, 2003; Hampel, Pfenning & Peters, 2000; Frewer, Howard, Hedderly & Shepherd, 1999). Bechwith, Hadlock and Suffron (2003) explain how important it is for the public to feel that they can trust those in the industry; “There was concern that good science could be threatened by the corporate control of the biotechnology sector, casting doubt not only on the credibility of the companies’ own research but any research, including university-based research, funded by the biotechnology industry” (p. 131). The concern that is identified here is that the motivations of corporations are based on profit and reputation rather than on working towards science which will benefit society. This is not what the public wants and causes a lack of trust towards the corporations involved in the science community. In considering these concerns which are held by the public it is clear that those who are driving the biotechnology industry need to, among other things, ensure that open communication is maintained in order to build a strong relationship which is based on trust.

### ***Ethics and Morality***

The public considers ethical and moral implications of biotechnology to be an essential part of the equation when considering the impact of biotechnology on society. Beckwith, Hadlock and Suffron (2003) report that focus group participants,

“felt strongly that GMO regulatory decisions should not be driven by science, although good science was an essential first component. The need to include moral and ethical issues, as well as socio-economic impacts and externalities in decision making was often mentioned, along with calls for a multidisciplinary approach to decision making” (p. 132).

Hampel, Pfenning and Peters (2000) expand on this concern and suggest that in Germany, “Ethical criteria are of great importance not only to opponents, but also to the supporters of genetic engineering.” (p. 247). Ethical and moral issues related to biotechnology are clearly in the forefront of public concerns.

Hanson (1997) discusses gene patenting and the ethical issues which have been debated by the public, and specifically the ethical issues which have been identified by the religious community as being of central importance in the biotechnology debate. Ownership, commodification, dignity, reductionism and justice are all described and discussed by Hanson as issues of concern which come under the broad category of ethical consideration, concluding that, “greater attention to the ethical implications of the commercialization of biotechnology is fundamental to many future dialogues at the intersection of religion and biotechnology” (1997, p. 18). Although Hanson is dealing with gene technology the ethical issues identified could be applied to biotechnology in a broad sense. The issues identified here are debated in the wider community, and not only by those who represent various religious communities. Ethical concerns are becoming so important that budgets for research into the area in the USA and UK now include financial allocation of between 3-7% specifically for considering issues associated with ethics (Rose, 2000).

### ***Response to various types of GM***

Public acceptance of biotechnology often depends on the type of application which is proposed. Hampel, Pfenning and Peters (2000) note that, “hardly any of the people interviewed uniformly approve or reject all applications” (p. 246). Braun (2002) cites opinion polls which show that medical applications are accepted more readily than the use of genetic modification techniques to assist in food production, a finding which is consistent with other research which has been conducted (for example Hampel, Pfenning & Peters, 2000; Beckwith, Hadlock & Suffron, 2003; Mucci & Hough, 2003).

Frewer, Howard and Shepherd (1995) investigated public acceptance of biotechnology and conclude, “consumer acceptance of the food products of genetic engineering are unlikely to be determined by attitudes to the technology overall. Rather, acceptance will be determined by recognition of the tangible benefits of

specific applications of the technology” (p. 34). Acceptance of genetic modification being used in a wide range of situations can not be expected solely based on a specific use being acceptable in the eyes of the public.

Burke (1999) considers why public reaction to genetic modification is mixed, and suggests that among many reasons there are a number of ethical issues which the public must negotiate. The industry must recognise the fact that acceptance of genetic modification is not universal, and that factors of risk, trust and ethical concerns are all involved when the public decides what to accept and what to reject from the biotechnology industry.

### **Response to the RCGM**

Before conducting an investigation into the contribution of the Christian community to the RCGM it is useful to discover what had previously been written about the event. This section of the report will briefly explore previous literature which focuses on the RCGM. Two of the four commissioners who were on the RCGM committee have presented individual comment on the enquiry since its conclusion (both presented at a one day conference in November 2002).

Randerson (2003) discusses the importance of the ethical and spiritual issues related to genetic modification, noting that, “Asking questions about a nation’s goal and values does not lead to easy answers, but failure to ask the questions, or to develop adequate processes for handling them, will certainly lead to an outcome where the things that are of ultimate worth drop from view” (p. 35). Randerson states that ethics were an important aspect of discussion, and one which the RCGM was not able to effectively handle during the enquiry. He described the sources of our values and belief systems which were identified during the RCGM: the four sources were Maori culture, religious belief, eco-spirituality (environmental viewpoints) and other cultures and beliefs. Emerging from these belief systems there was seven shared ‘values’ which the RCGM established as being common to all New Zealanders. These values were;

1. Uniqueness of Aotearoa/New Zealand
2. Uniqueness of our cultural heritage
3. Sustainability
4. Being part of a global family
5. Well-being of all

6. Freedom of choice
7. Participation (Randerson, 2003)

Fleming (2003), who was also a Commissioner during the enquiry, summarises her understanding of the public response which the inquiry heard regarding a number of specific situations where genetic modification is a possibility (such as crops, food, and medicine). The lack of trust held by members of the public and the moral and ethical concerns of the public were two central themes which Fleming identifies. Her suggestion is that the way forward is for “members of each society (to) decide the limits on the use of any technology, both individually and collectively” (2003, p. 498). Fleming (2003a) considers how the debate has moved on in New Zealand since the RCGM enquiry and why such a polarised view of genetic modification remains in New Zealand. The lack of trust which the public holds towards scientists and large corporations continues to be a central issue. Fleming (2003a) writes, “Scientists seem to have control over life itself and therefore cannot be trusted. Moreover, people feel that they have no power to influence this debate and yet the outcomes may affect all life on this planet” (p. 36). The second concern which emerges is that it delves into the notion that scientists are beginning to ‘play God’. Fleming, herself a scientist, moves to defend the value of science and the dependence we often have on it as a society, concluding that the argument that we will be able to ‘play God’ is not so important as we ‘play God’ constantly through the decisions we are continually forced to make in our daily lives.

Several authors who were external to the RCGM enquiry have been critical of the process which was undertaken by the RCGM and the recommendations which it made to the Government. Eisen (2003) brings together a number of opponents of genetic modification and suggests that although the RCGM was intended to be presented as being an independent enquiry it could never be independent as it was never really able to criticize the biotechnology industry and the corporations involved. The central criticism made is that the RCGM was selective about which science it gave weight to and that it ignored evidence which presented genetic modification in a negative light. Rogers-Hayden (2004) expressed a similar concern in her research which critiques the findings of the RCGM, focusing on the pre-determined outcomes which marginalised those voices which were not in agreement with the pursuit of the science and technology involved in genetic modification.

Rogers-Hayden and Hindmarsh (2002) compare the results of the RCGM with the findings of a Tasmanian parliamentary select committee enquiry into genetic modification. Their research highlights how both enquiries came away with opposing recommendations and questions why the RCGM was so positive and in favour of continuing with genetic modification research when over 90% of the submissions made were against (to varying degrees) genetic modification. Their research investigated the terms of reference under which the RCGM was carried out and the framework within which the submissions were received, and how this impacted on the findings of the commission. Rogers-Hayden and Hindmarsh conclude;

“New Zealand’s Royal Commission on Genetic Modification thus reinforced the social and cultural power of modernist ideals, advantaged genetic engineering interests, disadvantaged environmental groups contesting hegemony, [and] failed to adequately address the serious second modernity risks posed by genetic engineering, and acted to absorb public dissent to genetic engineering” (p. 59).

Tucker (2003) also considered the impact of the RCGM inquiry and was particularly concerned about the voices of representation which the inquiry gave weight to, and which voices were excluded from the investigation (through the adoption of a process which gave ‘Interested Person’ status to selected parties). Tucker suggests, “The voices of the general public were acknowledged [in] the RCGM report [in] Appendix 3, but it appears they were not *heard*. In contrast, interested persons comprised a category of people who were heard” (p. 98, italics original). Tucker’s concern is that the selection of persons granted interested person status excluded a number of groups who were opposed to genetic modification and therefore, “democracy was undermined during the RCGM” (p. 97).

Rogers-Hayden and Campbell (2003) discuss the submissions made by environmental groups to the RCGM. They describe how science has established a position in society where it is authoritative and often unquestioned. They describe how environmental groups deconstruct the accepted science discourse and the boundaries of this discourse in their submissions to the RCGM. Rogers-Hayden and Campbell’s discussion focuses on understanding the way that discourse is used by the environmental community in expressing their views on the topic. This investigation will complement the research

completed by Hayden-Rogers and Campbell as it considers how discourse is used by those in the community with a (Christian) religious viewpoint.

### **3. Research Method**

#### **Central concepts in a Critical Discourse Analysis**

This investigation will be conducted within a Critical Discourse Analysis (CDA) framework which aims to understand how discourse is used to influence social and cultural change. Fairclough (1992) has described in detail how a CDA should be approached, although he does make it clear that his suggestion is a framework rather than a 'blueprint' to be followed (p. 225) as the researcher determines the focus of a CDA and how it is applied.

An understanding of discourse is central to CDA and Hajer (1995) defines it as, "a specific ensemble of ideas, concepts, and categorizations that is produced, reproduced and transformed in a particular set of practices and through which meaning is given to physical and social realities" (p. 60). Discourse is expressed through a variety of methods. Fairclough clearly states that his understanding of discourse is narrow, as he is concerned with "spoken or written language use" (1992, p. 62). In this investigation a similarly narrow view is being adopted as the discourse texts being analysed are the formal written submissions made to the RCGM by the five Christian groups with IP status. Transcripts of formal hearings which the groups attended have also been included in the analysis, although they have been used to support the written submissions rather than being the primary focus of the investigation.

Discourse is often seen to be closely connected with power and dominance. Van Dijk's (1993) method of conducting a CDA is specifically interested in understanding "top down relations of dominance" (p. 250) and the way this is worked out through discourse. Parker (1992) suggested that an understanding of discourse should include recognition of the ability which discourse has to build power and establish ideologies. Parker explained the way in which institutions produce and reproduce power through the use of discourse and encourages researchers to explore these connections when analysing discourse. The ability of discourse to provide power is not the central focus for Fairclough; although he clearly recognized the role that discourse has in assisting to establish and reinforce hegemonic ideologies.

Power is often achieved through careful articulation of discourses. Slack (1996) discusses the use of articulation in detail, describing it as "a process of creating

connections” (p. 114). This process allows those producing the discourse to not just present their perspective, but to strengthen it using the connections which are established with other discourses and ideologies. Motion and Leitch (1996) explain that, “public relations practitioners attempt to gain acceptance of particular organizational images or particular policy proposals by achieving an articulation between these images and proposals and particular subject positions occupied by members of key publics” (p. 300). Articulation is employed by those in public relations, but may be used by anyone wanting to create favourable connections in the mind of their audience. When conducting a CDA a central aspect of investigation is to consider how those constructing a discursive text have articulated their ideas in a way which makes them readily acceptable to their audience.

### **Critical Discourse Analysis Methodology**

The CDA framework which is outlined by Fairclough (1992, 1995) includes analysis at three levels - text, discursive practices and social practices. Each of these levels has a separate and distinct characteristic which it considers, however they are also closely interconnected with the three levels being embedded in each other.

The textual level involves identifying and describing the linguistic features that determine meanings which are evident in a text. According to Fairclough (1992) analysis at the textual level considers word choice and the way that the language has been organised to present a series of ideas and arguments. The two remaining levels of analysis focus on the form, interpretations and context of the text. In considering the discursive practices the concern is to understand the “processes of text production, distribution, and consumption” (Fairclough, 1992, p. 78). Analysis of discursive practice includes the constraints of production and the application of intertextuality in discourse.

Intertextuality is a central concept in exploring the discursive nature of a discourse and is described as “the property texts have of being full snatches of other texts, which may be explicitly demarcated or merged in, and which the text may assimilate, contradict, ironically echo and so forth” (Fairclough, 1992, p. 84). Intertextuality is useful in exploring how a document draws on past texts. It is also relevant when several documents are presented at the same time as it allows for exploration into the

relationships and networking between groups which is evident, either explicitly and implied, in the texts.

The third level of analysis, social practice, allows for the exploration of views and perspectives of those involved in the text, and the influence this has on the creation and distribution of the text. Fairclough (1992) describes the concepts of ideology and hegemony as being central to this level of analysis. Fairclough (1992) suggests that ideologies are the “significations/constructions of reality (the physical world, social relations, social identities) which are built into various dimensions of the forms/meanings of discursive practices, and which contribute to the production, reproduction or transformation of relations of dominance” (p. 87). Ideological positions and debates which occur within a discourse represent the struggle for power and dominance which continue to occur within society. It is not always the intention of a producer of a discourse to present or contribute to an ideological struggle or debate and often they are not aware of the struggle which occurs through their production of a discourse (Fairclough, 1992).

Fairclough (1992) suggests that a discourse may also contribute to the development of hegemonic belief. “Hegemony is about constructing alliances, and integrating rather than simply dominating subordinate classes, through concessions or through ideological means, to win their consent” (Fairclough, 1992, p. 92). Fairclough explains that the construction and distribution of a discourse can contribute to a hegemonic position being developed as it allows for ideological beliefs to be articulated and presented in order to gain consensus and support among others. One of the central focuses of a CDA is to investigate and explain the ideologies and hegemonic beliefs which are being established within a discourse.

### **Application of a Critical Discourse Analysis**

A CDA will often be used by researchers who explore the way that ideological positions were presented through the use of discourse. The focus of this research is to discover the central issues which the Christian community considers to be relevant and important regarding genetic modification in New Zealand, and to explore the way that these issues are discursively constructed. Fairclough’s method of analysis will be utilised but restructured in order to analyse form prior to content of the submissions. The first

section of the analysis will therefore focus on the construction of the submissions and the influence which this has on the issues which were discussed (the discursive level of a CDA). The textual and social levels of analysis will be combined in order to consider the central issues which are the focus of the submissions and how these issues are explored and presented by those making submissions.

### **Research Scope**

This report is focused on considering the submissions of the Christian community to the RCGM. The term 'Christian community' refers to both traditional and charismatic Christian denominations and groups. The traditional denominations (Catholics, Anglicans, Methodist and Presbyterian) were the dominant representatives of the Christian community in the RCGM. The opinions of other religious groups who are not Christian based (and also of the Maori community) in New Zealand are not the focus of this research. Specific issues related to Maori spirituality have been outlined elsewhere by Roberts, Benton, Satterfield and Benton (2004).

The research analyses the written submissions (and any supporting oral submissions) which have been made by several groups who were given recognition as 'Interested Persons' status during the RCGM inquiry. The majority of churches involved in submissions came from traditional backgrounds, meaning the voice of charismatic or evangelical church may appear to be missing. This is not intentional but it provides an interesting reflection on those who choose to make a submission; a topic which is worthy of further debate and research elsewhere. Individuals who have Christian beliefs could make submissions to the RCGM, however an analysis of individual submissions is beyond the scope of this project.

This research project considers the formal process of the RCGM rather than the broader communication efforts which can be used in an attempt to influence public opinion. This research does not consider any other activities (i.e. protest action, advertisements) which these groups have undertaken during the period when the RCGM was gathering submissions.

As the churches and groups themselves recognise in their submissions, to expect that the views expressed are representative of all Christians (or even of all churches) in New

Zealand is not realistic. The discussion here is based on an analysis of the points made in the submissions. This is a representative, but not complete, picture of the views of the Christian community in New Zealand.

This investigation is interested in exploring how those who made submissions established their argument and position on genetic modification. As this investigation is focused on the way in which a position is established and communicated the theological position taken and the science involved with genetic modification are not subjects under discussion, although some consideration of ideological principles is an essential part of a CDA and will be presented. An explanation of a scientific process may be provided where it assists with understanding the position which is being established.

## **4. Research Findings**

### **Constructing the Submissions**

Discursive practices are concerned with exploring the influence of the production process on the construction of a discourse. This section will explore the discursive practices aspect of a CDA analysis in relation to the submissions which were made by the Christian community to the RCGM. This section will focus on the influence of the template which was used when making submissions and the use of intertextuality throughout the submissions.

#### ***Submission Template***

The template used by those with IP status to make a submission contained two sections (see Appendix 1). The first section asked for general comments about the way in which New Zealand should proceed with genetic engineering and changes to legislation which could be considered. The second section was broken into a series of questions which dealt specifically with the 14 topics which were identified as central to genetic modification in the RCGM 'Terms of Reference' (see Appendix 2). Some of the topics in the second section were divided further into a series of more specific questions. Each question provided a space for a summary before asking for a detailed answer to the question.

Of the five submissions which were presented only the ICGE and PQC chose to respond to every section in the template. The Quakers, Catholic Bishops and Anglican Church submissions contained responses to several selected questions and the remainder of the sections in their submissions were left blank. The sections answered by these three groups related primarily to the cultural and ethical concerns (which came under the broader topic labeled 'public interest'), responsibilities according to the Treaty of Waitangi, and global issues which need to be considered. Sections which these groups chose not to answer included questions asking about knowledge of current uses of GM in New Zealand, the risks and benefits, and international and legal issues and obligations which New Zealand may have. In choosing to answer only certain sections of the submission template, and leaving other sections blank, indicated that ethical and spiritual concerns, rather than the science itself, were the areas of central importance and concern to the Christian community.

The RCGM stipulated that comments made in the submission must relate directly to specific questions and references between sections were not accepted. This was because when the RCGM collated the responses it individually analysed each question in the template. When reading the submissions there are sentences and comments repeated (often verbatim) a number of times under different sections. Repetition was deployed to ensure key messages were heard and to assert some control over the submission template. The PQC, for example, repeats the phrase “Ethical criteria must always outweigh commercial considerations” (2000) at least eight times throughout their submission. By repeating a phrase the comments are supplied as direct responses to each section where they are relevant. Although the main reason for repeating comments is to keep within the required format when making a submission, the issues of central importance to the group making the submission became apparent. The issues and concerns of most importance were repeatedly mentioned.

The ICGE modified the submission template to include their thoughts on spirituality. They created a new category called ‘spirituality’ under the ‘human interest’ question and stated that they felt spiritual concerns were “in addition to and distinct from ethical and cultural concerns” (2000, section B,j,v<sup>5</sup>). The PQC, while not making the addition in their own submission, noted that they supported the comment made by the ICGE that the two areas should be seen as separate.

### ***Intertextuality***

When identifying the composition of the two collective groups who made submissions there are several overlaps that can be identified: the Anglican church provided their own submission but were part of the ICGE; the Quakers provided an individual submission as well as being part of the PQC; the Methodist and Presbyterian churches are part of both the ICGE and PQC but did not provide their own submission to the RCGM. Throughout the submissions there was repeated reference (and support given) to statements which were made by other Christian communities who made submissions. These references to other submissions indicate that the Christian community was often supporting each other and working together as they made submissions to the RCGM.

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<sup>5</sup> APA referencing usually dictates that a page number is provided for direct quotations, however this is not practical when quoting from submission as most have been presented in different formats so pagination is not consistent. The submissions are divided into a number of sections so I will reference the section title or number in place of a page number.

The ICGE submission could be described as the central voice of the Christian community. It is the longest submission and contains the voices of the widest range of church groups<sup>6</sup>. In addition, the PQC, “commend the [ICGE] submission and regard our submission as supporting and complementing their work” (2000, executive summary). The one submission which appears to be separate from the others is presented by the Catholic Bishops, which contains no reference to other groups from within the Christian community. The details and content contained in the submission made by the Catholic Bishops has some distinct differences to the other submissions made to the RCGM - these differences will be explored shortly.

Throughout the submissions there are a number places where intertextuality is employed in order to bring support to the discursive positions being advocated throughout submissions. Reference to the Bible, a variety of religious texts, academic literature and ‘real life’ projects from around the world are continually used throughout all of the submissions and in several of the formal hearings.

When referring to the Bible and other religious texts (such as the ‘Quaker Faith and Practices’ manual and comments from the Catholic ‘Holy See’) the submissions are making a connection to other documents and texts which they view as an authority and which provide instruction that they respect and follow. This is important and appropriate as these texts are seen as the basis on which the Christian life is lived, and therefore influence how a position on issues such as genetic modification is established and justified by the Christian community.

Use of academic literature (often complete with references) provides the academic weight of an expert opinion to the position which is being developed throughout the submissions. By making references of this nature the submissions are attempting to legitimate opinions by establishing credibility and support. For example, the ICGE (2000) quoted from Nicholas’ work on bioethics when discussing the need for ethics to be part of the decision making process (ICGE, 2000, section B,j,iv).

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<sup>6</sup> The ICGE represented the Anglican, Methodist and Presbyterian churches - three of the four largest Christian church communities in New Zealand. According to the 2001 census a total of over 1.13 million New Zealanders associate themselves with one of these three communities.

## **Submissions Analysis**

Following consideration of the influence of the production process on the construction of discourse the focus will now be to consider the key themes which emerge and the ideologies which are being explored and contested throughout the submissions. This section will begin with an overview of the key discourses which were employed throughout the submission before considering two central themes which emerge from the submissions – collective responsibility and ethics.

In their closing submission the ICGE state that they, “do not subscribe to the view which has been expressed by some groups that there should be no GM research in New Zealand, or the premise that only laboratory work should be approved” (2001, ¶10). All of the submissions focus on ensuring that the way in which this technology is used is acceptable and appropriate; they are not suggesting a complete ban on genetic modification within New Zealand. The Christian community does have concerns about biotechnology and the future of the industry in New Zealand. Their concerns are not based on the potential risks from science and possibilities brought about by technology but the realisation that, “every aspect of genetic modification has a spiritual, cultural and ethical dimension” (PQC, 2000, executive summary). The Christian community wants a means to ensure that the spiritual, cultural and ethical dimensions are adequately considered. The Christian community believes that these dimensions deserve as much consideration as the science and technology itself.

### ***Discourses Employed***

The submissions go beyond using a ‘discourse of risk’ (Beck, 1992; Beck, 1999) to develop a discourse of ‘collective responsibility’. The ICGE suggests, “We must be responsible in the use of power we have and not get led astray by what seems to be a good idea at present, unless we understand significantly what its impact on our inheritance might be” (2000, section B<sub>i,j,v</sub>). The Anglican church hopes, “to be part of a nation where by careful and humble ethical management, acknowledgement of spirituality and collaboration towards just outcomes will allow for appropriate development of GE technology” (2000, section B<sub>i,j,iv</sub>). The examples given here from two of the submissions provide evidence of the outcome which the submissions are advocating – a nation aware of the collective responsibility it has to ensure it does not

rush into something but instead thinks carefully about the consequences of their decisions and works towards goals which are balanced and well informed.

The use of a 'collective responsibility' discourse frames an ideological view which is focused on ensuring that our future as a 'risk society' does not end in destruction for ourselves or for the environment. The Christian community is concerned about the future and potential dangers from the development of genetic modification. The concern which Potter (1971) raised about ensuring that scientific knowledge and wisdom are combined is seen in the notion of 'collective responsibility' which is being established. In advocating a precautionary approach<sup>7</sup> the Christian community is bringing bioethics into the centre of the debate over the future of GM in New Zealand and advocating that time is taken to carefully consider the consequences of genetic modification.

A 'sustainability discourse' is also being drawn upon throughout the submissions. Sustainability has been described in numerous ways but the best-known definition emerged in the mid 1980's from the World Commission on Environment and Development who suggest that it is, "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, cited in Williams & Millington, 2004, p. 100). More recently, Agyeman and Evans (2004) take the notion of sustainability and link it to 'environmental justice' which is concerned with protection of people, both as individuals and societal groups. They suggest that 'just sustainability', which includes consideration of the impact on the environment and the people who are contained within it, is a valuable and natural progression. The Christian community also advocates this shift towards considering impact on both humans and the environment through the 'sustainability discourse' which they draw on throughout the submissions.

### ***Collective Responsibility***

There is a focus throughout the submissions on our collective responsibility to ensure that decisions are based on considering more than just the science involved with genetic

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<sup>7</sup> The Precautionary Principle or approach suggests, "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically. In this context the proponent of the activity, rather than the public, should bear the burden of proof. The process of applying the Precautionary Principle must be open, informed and democratic and must include potentially affected parties. It must also involve an examination of the full range of alternatives, including no action" (Myers, 2004, p. 15)

modification. There are two areas of responsibility which are discussed at length throughout the submissions and which need to be explored. These are responsibility towards creation and consideration of other humans.

### Responsibility towards creation<sup>8</sup>

The technology which has been introduced as part of the biotechnology industry allows humans to, among other things, modify and manipulate the natural environment. Having these abilities brings up the question of a relationship and responsibility towards creation, a topic which was prevalent throughout the submissions. There are a variety of perspectives which are presented in the submissions regarding the appropriate nature of interaction between humans and creation.

This issue represents an ideological struggle throughout the submissions, especially as several of the submissions refer to various ways in which humans can respond to nature and appear to struggle within themselves to find an acceptable resolution to this tension. The approaches range from the view that creation was designed by God and humans should not attempt to modify it (Quakers, 2000), through to an understanding of humans as co-creators who have a responsibility to participate in the ongoing development of creation (Catholic Bishops, 2000).

There is a common acceptance of the relationship and interaction between humans and creation in all of the submissions, irrespective of the position taken regarding the way in which these two entities can and should interact. The ICGE states, for example, “There is knowledge that we are co-dependant and bound together not only with other members of the human race but with other organisms in the environment” (2000, section B<sub>i,v</sub>). The idea that we are interconnected with creation is promoted by all the groups making submissions through statements similar to that made by the ICGE. The challenge being considered within the submission is to define how this relationship can and should be treated.

The Quakers very clearly oppose intervention in their submission and suggest, “...all life forms are interdependent and interconnected. The coherence of the biosphere is

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<sup>8</sup> The term ‘creation’ will be used when discussing nature and the environment we live in as it is appropriate in this context. The notion of ‘creation is based on the assumption of a creator, a belief central to the Christian faith.

complex and precious. Maintaining bio-diversity and the integrity of ecosystems is vital to keep the whole in balance. GM threatens both.” (2000, executive summary). The view that creation should not be modified under any circumstance appears to be non-negotiable from the Quakers perspective, and is based on an ideological belief that humans do not have ownership over life (2000, section A,1).

The submissions from the ICGE, PQC and the Anglican Church all promote a similar ideological position as the Quakers but are more accepting of human intervention, on the provision that, “the first principle should be “first do no harm’; this includes to the non-human world, both as constituent parts and ecosystems” (Public Questions Committee, 2000, section A,1). The submissions of the ICGE and the PQC (which both incorporate several church communities) acknowledge the challenge of responsibility for nature while maintaining reverence and respect for God. The ICGE submission describes the reason for tension to exist when they explore the theological foundations and beliefs on which their submission is made, suggesting,

“Responsibility for/to the whole of creation is another fundamental attitude. This responsibility is not only for what we may think we have power over, but also to that which gives us that power. We come from the earth, we are rooted in (or arise) from it, so that we have a two-fold responsibility, to the Creator and to creation.” (Preamble, 2000)

Although these submissions suggest humans have been given responsibility for creation (the ICGE talks about humans as stewards) there is also acceptance of the position they have under God (who created both humans and creation), and the respect which this relationship requires.

The Anglican Church is advocating a cautious position but their caution is related to a concern that the profit motive is too powerful and influential. The Anglican Church wants to, “encourage a view of the biosphere as a place of discovery and awe rather than a realm of further exploitation, ownership and profit.” (2000, section B,j,iv). The Anglican Church suggests they are comfortable with humans making use of nature so long as the central motivation is humility and a desire to improve life, and is not based on greed.

The concept of humans as ‘co-creators’ is presented in the Catholic Bishops’ submission when they suggest that, “all human beings have a role as co-creators with God, and as participants in the evolutionary process. The responsible use of GM is a further

challenge for us as stewards of the gift of creation” (2000, section B,j,iv). The Catholic Bishops appear to be comfortable using the term ‘co-creator’ while other groups refer to humans as ‘stewards’ over creation. The role of co-creator is clearly polarised with that of no human interference with creation. While other groups making submissions did not appear to be comfortable with an ideology which establishes humans as co-creators there was recognition that “human curiosity and research skills [are] gifts of God to be used responsibly for the benefit of all the parts of creation” (PQC, 2000, executive summary).

The Catholic Bishops’, “do not see the technology of genetic modification to be in conflict with ethical values. However, most human invention can be used to benefit or to harm, and there may be uses of GM which are unethical or unwise.” (2000, executive summary). The Catholic Bishops are promoting a way forward which ensures that technology is used in a way that is socially and culturally responsible and ethically acceptable. The Catholic Bishops take the position that GM, if used in an appropriate manner, can be a useful tool for humans in our role as co-creators on earth.

The Catholic Bishops never refers to ‘Bioethics’ but their position and concerns are similar to those who were initially advocating the importance of bioethics. Their position returns to the initial concerns which Potter (1971) explained when he outlined the need to think about knowledge gained and the way it is utilised. The Catholic Bishops are not criticizing the development of genetic modification and the associated technology but are questioning how it will be applied and the way in which this will impact society (Potter, 1971; Nicholas, 1997, 1999, 2001).

The extent of human influence which is acceptable differs substantially between the submissions, from the Quakers who are concerned about any form of genetic modification to the Catholics who view humans as having responsibility as co-creators. The common concern raised by all those making submission is the need to recognise the risks to spiritual, cultural and ethical aspects of society and that these risks are not ignored as decisions are made.

## Responsibility towards other people

All of the submissions are in agreement about the value of human life, with a number of submissions advocating that all humans must be allowed to have the freedom to make an informed choice about genetic modification (Catholic Bishops, 2000; PQC, 2000; ICGE, 2000; ICGE, 2001). The ICGE explain that, “The Church has a strong sense of responsibility for others and there is a commitment to ensuring that research and applications of GM technology should be made with real considerations for the needs of all people...” (2000, executive summary). The Christian community identifies three societal groups who require specific consideration with regards to genetic modification. Those mentioned and discussed throughout the submissions are disadvantaged persons, Maori, and future generations.

Submissions make reference to that fact that, “Decisions on genetic modification must take into account the needs of the poorest and most vulnerable people, in New Zealand and globally...New Zealand should not participate in uses of genetic modification or trade practices which disadvantage other people” (Catholic Bishops’, 2000, section B,h). Concern for disadvantaged persons clearly reaches beyond people in New Zealand to people all over the globe. The ICGE and PQC both refer specifically to the third world, and their concern that these people are given the chance to benefit from genetic modification and the technology which is being developed. There is recognition of New Zealand as a ‘wealthy nation’ and the suggestion that this means both the citizens and the government have a responsibility to be considering the needs of those less wealthy than ourselves (Catholic Bishops’, 2000; PQC, 2000; ICGE, 2000).

The PQC commented that, “The Commission should give special weight to the submissions it receives from the representatives of Maori peoples” (2000, section A,1). Several of the submissions referred to Maori as having spiritual concerns which are unique and which must be recognised in New Zealand. By referring to the spiritual concerns which are held by people in the Maori community the Christian community is aligning themselves with others whose concerns are based on cultural and spiritual grounds. This articulation, by referring to the legal obligation which New Zealand has under the Treaty of Waitangi, adds strength to the position which is advocated by both of these communities.

The Catholic Bishops suggested that, “While there is an obligation on Maori to study and understand the science of GM and its implications, there is an obligation on proponents of GM and on society in general to respect the spirituality of Maori in making decisions about the use of GM.” (2000, section B,g). This goes further than just linking the two communities together and advocates a two-way approach where Maori and supporters of GM work together and have respect for each other as they determine the way forward for the future of genetic modification in New Zealand.

In explaining why the views of the Maori are worthy of consideration there is strong recognition of the Treaty of Waitangi as a founding document in New Zealand and that there is a need for continued partnership between Maori and European in New Zealand (PQC, 2000; Catholic Bishops, 2000; Anglican Church, 2000; ICGE, 2000). Several submissions suggest that it must be recognised that issues of Maori spirituality are unique and that their concerns must be clearly noted (Catholic Bishops, 2000; Anglican Church, 2000; ICGE, 2000). The ICGE specifically recommends that the Environmental Risk Management Authority (ERMA)<sup>9</sup> terms of reference be modified to ensure Maori views and recommendations are recognised as part of the decision making process (ICGE, 2000).

The submissions discuss the responsibility to future generations, and ensuring that decisions made today will not have serious and negative effects on people in the future. The Catholic Bishops’ state,

“The physical and living resources on the earth are not finite and are not owned by any particular generation – they are held in trust for our own benefit but also for the use and benefit of generations yet to come, as the common heritage of humankind. We have serious responsibilities to future generations in our stewardship of the earth and its life forms.” (2000, section B,i,iv)

Although the ICGE is the only other group that uses the term ‘future generations’, there is an implied ideology of creation being ongoing and that the current generation has a responsibility to ensure we utilise creation in a way that is sustainable and does not compromise future generations’ opportunities.

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<sup>9</sup> Commonly referred to as ERMA

Previous research has shown that public assessment of risk differs from that of the scientific community (Zwick, 2000; Burke, 1999; Frewer, 2003). The risks which the Christian community have identified as being important are concerns which are not based on any technical assessment of science. Their concern aligns with those which were identified by Burke (1999) which focus on ensuring a responsible attitude and consideration of public safety and environmental effects. In discussing responsibility towards various societal groups the Christian community is advocating the importance of equity for everyone and drawing on the principles which Beauchamp and Walters (1999) explained to be central to modern bioethics – respect for autonomy, beneficence and justice. The Christian community is stating that society has a responsibility to consider the consequences of decisions for other societal groups. Of particular concern in New Zealand is consideration for the views of both Maori and Pakeha people as both cultures are living together in partnership and deserve to have equal influence and opportunity to be heard in the debate over genetic modification.

### ***Ethics***

Considering moral and ethical issues when making decisions is important to the public (Beckwith, Hadlock & Suffron, 2003) and clearly emerges in the submissions made by the Christian community. The submission made by the Catholic Bishops points out that the “debate about genetic modification has been dominated by safety and economic aspects” (2000, section B,j,iv) and ethics has been discussed at times but never clearly defined. The Catholic Bishops’ put the importance of ethics in perspective when they suggest that “Beneath any consideration of technological possibility, safety, commercial gain, therapy or environmental impact lies the fundamental question of the moral acceptability of genetic modification and its applications” (2000, section B,j,i). The ideology being promoted here is that acceptance of genetic modification should be judged on the basis of ethical consideration of moral principles.

The Catholic Bishops suggest that ethics and morality are separate concepts and explain this difference before exploring what they consider to be the central ethical issues associated with genetic modification. The distinction made by the Catholic Bishops is that “ethical principles are at once deeply personal and deeply communal, reflecting fundamental codes of being and fundamental codes of behaviour” (2000, section B,j,iv). In essence ethics refers to how humans interact with each other, whereas morality

is described by the Catholic Bishops as having the “added perspective of a faith tradition” (2000, section B,j,iv) and includes the responsibilities which come out of a relationship with God<sup>10</sup>.

Ethics and responsibility are closely connected. Acting in an ethically appropriate manner is to be collectively and individually responsible. A number of specific ethical questions and concerns are raised throughout all of the submissions from the Christian community. The central issues which emerge and will now be discussed include informed consent, the profit motive and the establishment of guidelines for deciding which applications of scientific technique are unacceptable.

When considering the opportunities open to New Zealand the PQC optimistically points out that “New Zealand’s main opportunity is to lead the world in setting high ethical standards in regard to research into and use of genetic modification, and genetically modified organisms and products” (2000, section B,i). The position which the PQC is establishing here not only suggests that ethics must be central when decisions are being made but that New Zealand has the capacity and opportunity to set an example for the rest of the world with this issue by establishing ethical standards and guidelines.

### Informed Consent

One of the central principles of bioethics was identified as respect for autonomy (Beauchamp & Walters, 1999) and the submissions all focus on this as an important issue. The ICGE states that all humans must, “have the opportunity to give or withhold informed consent” (2001). The Catholic Bishops believe that, “Decisions concerning GM should not remove the rights of individuals to distance themselves from GM if conscience precludes use of the technology or its products” (2000, section B,k). The submissions request that people are given the opportunity to make their own decision about whether they will consent to food and products containing GM, and that ethical and spiritual concern are seen as acceptable grounds on which an individual is able to reject the technology (ICGE, 2000).

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<sup>10</sup> This discussion will consider both the moral and ethical obligations which were discussed in the submissions. The ethical concerns were discussed in more details throughout the submissions and at times the term ‘ethics’ will be used in reference to both moral and ethical concerns.

The PQC are concerned that not enough information is made publicly available and that, “the creation of what is good is the responsibility of the whole of society and must not be left to the specialists and experts” (2000, section B,a). The Anglican Church states that a survey of members of the Association of Anglican Woman (which they conducted in 2000) “indicated a high level of uncertainty and lack of information upon which to make considered opinions” (2000, section B,b). This high level of concern about not enough clear information being available is connected with the desire to ensure that informed consent is provided, as an individual’s decision will be made based on the information provided.

In making the suggestion that the public should be given the opportunity to make their own decisions about acceptable genetic modification applications the Christian community is implying that the public should be viewed as the experts (Jones, 2002; Wynne, 2001). This repositioning of individuals as experts is consistent with the development of the public as experts in a ‘risk society’ (Beck, 1999; Beck, 1999).. Empirical research findings suggest that the public do not trust those who are traditionally seen to be the experts and requests in the submissions to allow the public to make their own decisions gives support to these research findings. Expertise in ethical decisions related to genetic modification is perceived to be an individual decision.

### Profit Motivation

There was a concern throughout the submissions “about the effect of the profit motive on genetic research and the development of genetic organisms” (PQC, 2000). The ICGE and PQC focused on their concerns about commercial power and profit when answering questions about commercial or international opportunities for genetic modification. The ICGE suggest that physical and spiritual health is more important than economic objectives (2000, section B,g). When the ICGE (2001) presented their closing submission they return to the same issue, stating,

“It is a widely held opinion in the community that the profit motive should not be the predominant criterion in deciding what is beneficial for New Zealand, and much concern was expressed to us that what are seen as ‘corporate values’ may override the concepts of respecting people’s beliefs and having an attitude of responsibility for the environment, and for others in the world who are less fortunate than ourselves.” (17)

The idea of profit being a driving force is rejected by the Christian community as ethically unacceptable. What is being promoted is an attitude of responsibility for other people and for creation which overrides any profit motive.

The ICGE submission discusses the difference in the way that decisions are made by corporations and those made by government on behalf of society. They suggest that although corporations are motivated by profits, “we remind the government that economic and scientific goals are not the only desirable ends. Striving for physical and spiritual health is another crucial goal.” (2000, section B,g). The ICGE discusses their own research which has shown that abuse of power by multinational corporations is also a concern for the Christian community. The submissions made by the Catholic Bishops, PQC, and Quakers’ describe their belief that economic goals should not be a priority or a motivating-force when making decisions in New Zealand about genetic modification.

#### Unacceptable Applications of GM

Although the central focus of the submissions is to explore how genetic modification can be carried out in an appropriate manner in New Zealand there is some discussion of the science of genetic modification in all of the submissions, and the Christian community identifies specific aspects of genetic modification which they want to see either banned or placed under a moratorium in New Zealand. Opinions about what is acceptable and what is not differs within the Christian community, just as previous research has shown that opinions of the general public differ depending on the application being suggested (Hampel, Pfenning & Peters, 2000; Braun, 2002; Beckwith, Hadlock & Suffron, 2003; Mucci & Hough, 2003).

The submissions from the ICGE and the Quakers both make a specific recommendation that the patenting of human genes should be made illegal in New Zealand. Human genes are seen as containing information “which belongs to the whole of humankind” (ICGE, 2001, ¶7) and therefore should not be owned by anyone.

The Catholic Bishops request that the ‘germ-line therapy’<sup>11</sup> process is prohibited (2000). The submission explores the difference between somatic cell therapy (which is

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<sup>11</sup> Germ-line therapy involves alterations to the germ cells which would be passed down through future generations. Somatic cell therapy is the alternative and only modifies the cell of that individual; this means future

acceptable) and germ-line therapy, making their request on the basis that the effects of germ-line therapy have “consequences reaching far beyond the individual” (2000, section B,j,iv). The concern of the Catholic Bishops is that there is not enough knowledge about the future consequences of germ-line therapy to be sure that it will be safe in the long term. Consideration of the consequences for future generations has clearly been identified as important to the Christian community, and not allowing ‘germ-line therapy’ to be used is a practical step which can be taken to ensure consideration of the future consequences of the decisions which are currently being made.

The Quakers ask for the most stringent limitation when they recommend that genetic modification crops should not be planted in New Zealand and that genetically modified food and food products should be banned. Their support for a ban on genetically modified food products is based on a belief that more public information and debate needs to be circulated and that introducing it would not allow consumers to make their own decision.

### Ethics Council

The first recommendation made in the ICGE submission was for, “an independent NZ Genetic Modification Ethics Council [to] be set up specifically to address the ethical and spiritual concerns being raised by many New Zealanders.” (2000, executive summary). Setting up a regulatory body which focuses on ethical issues and concerns was the most common recommendation made in the submissions and was addressed by all groups in various ways. An ‘Ethics Council’ was seen as the solution for ensuring that ethical issues are carefully considered when decisions about genetic modification are being made.

Those groups who were recommending the establishment of an ‘Ethics Council’ had some knowledge of the current regulatory systems and the processes in place to make decisions regarding future options for science in New Zealand. Their concern was that the current regulatory process (and in particular the ERMA assessment of a proposal) did not give adequate consideration to the ethical and spiritual concerns of New Zealanders (ICGE, 2000). They considered the process focused too much on economic implications and could be unfairly influenced by global pressure. An ‘Ethics Council’ was

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generations are not effected in any way. Somatic cell therapy is considered to be acceptable by the Catholic Bishops’.

seen as a means to ensure that adequate consideration was given to social, cultural and spiritual issues associated with genetic modification during the decision making and regulation process.

The way in which an 'Ethics Council' would function and how it would fit into the regulation framework was approached in different ways by each of the groups making submissions, with some suggesting that an ethical council was necessary as an 'overarching' council to the existing framework (ICGE, 2000). The idea of an 'Ethics Council' was also a recurring topic throughout the submission hearings, and was often questioned and discussed during cross-examination as it was an issue of particular interest to the Commissioners. Following the consultation process one of the key recommendations made by the RCGM Commissioners was for the government to establish 'Toi te Taiao : the Bioethics Council', which would be responsible for consultation and providing advice on ethical issues related to biotechnology (Royal Commission on Genetic Modification, 2001).

## 5. Discussion and Conclusion

This investigation explored the issues which the Christian community in New Zealand considers to be important in relation to genetic modification. The Christian community holds similar attitudes towards genetic modification as those which have been identified in empirical public opinion research – they are concerned about the risks, do not trust the ‘experts’ who hold the power and responsibility, and do not uniformly accept or reject applications of the science but remain selective about what is acceptable. An analysis of the submissions has shown that beyond identifying with public concerns the Christian community is focused on ensuring that policy makers and the scientific community understand that it is essential to carefully consider how New Zealand should proceed in a way that is socially, culturally, ethically and spiritually responsible. The two central areas of responsibility, which are both discussed at length throughout the submissions, are responsibility for creation and concern for other people in society.

This investigation also explored how the Christian community discursively represented their views. The Christian community drew on a variety of texts which were relevant to their values and beliefs (such as the Bible). They also articulated a position supported by material with academic credibility in order to be readily accepted by their audience (the RCGM). The consistent message being presented drew on discourses of ‘collective responsibility’ and ‘sustainability’ which were established and maintained throughout all of the submissions presented to the RCGM.

The Christian community worked together and articulated a strong argument which they presented to the RCGM. There was diversity in the opinions of groups making submissions, however the views they presented were based on common ideological perspectives and messages about the importance of social and ethical considerations which were consistently referred to throughout the submissions. Although the responses made to the RCGM were restricted by the submission template, the Christian community were able to clearly establish and articulate their views.

One of the key features of a risk society which Beck (1992, 1999, 2000) identifies is that individuals (ordinary citizens) have taken on the role of experts and therefore have an ability and responsibility to assess potential risks (see also Jones, 2002). The importance of the view of an individual and recognition of the public as experts is

clearly supported by the Christian community. Throughout their submissions they advocate strongly for community voices to be heard and for society to take responsibility and make informed decisions. The views of the scientific community are not validated as the primary opinions to be considered. The Christian community is advocating that the views of the community and of individuals are central to the GM debate in New Zealand. The opinions of the public are given credibility because they are able to consider the social effects and ethical issues involved in the debate.

The Christian community, in their submissions to the RCGM, suggests that the potential scientific danger is inappropriate as the dominant criteria for making decisions. Instead, an ability to make socially responsible and ethical decisions is the central concern of the Christian community and society must therefore view the community and the future of humanity as being of central importance, and must not continue to engage solely in scientific and economic debate. This contrasts Beck's (1992, 1999) assertion that 'risk society', is emerging due to the blurring of national boundaries and the lack of security which this brings. The Christian community suggests that a 'risk society' is also emerging due to an inappropriate focus on economic and scientific concerns over social and ethical considerations.

The ideological belief which the Christian community develops is that humanity has the ability to influence the future through decisions that continue to be made. This challenges Beck's view that the continued development of science and technology is responsible for potential risks in the future. It would remove the ability to influence the future from technical machinery (central to 'risk society') and place it back in the hands of humanity. The ability which humanity has to make decisions is considered to provide an opportunity to influence the future.

The Christian community believes that an inability to make socially and ethically acceptable decisions is of greater concern than the rapid development of science and technology which has potential to cause future destruction. The belief advocated throughout the submissions is that the ability to make responsible decisions is of central importance for society, and must come before focusing on developing the science and technology industries. The principles which the Christian community outlines as central to

being ethically responsible are those which Beauchamp and Walters (1999) have defined within bioethics – respect for autonomy, beneficence and justice.

The Christian community draws on the precautionary principle and sustainability discourse in order to support the ideological position they have developed. The precautionary principle advocates a cautious approach regardless of the ability to establish scientific proof of potential harm, and is based on an open and informed public process. The Christian community is suggesting that scientific debate should not be the central concern and repositions the role (and concerns) of the public as central within the debate. Aygeman and Evans (2004) development of ‘just sustainability’, where consideration is given to both the natural environment and effect on humanity to ensure that we minimize the potential for negative impact in the future, is a central concern which the Christian community has articulated throughout the submissions to the RCGM. Looking towards the future, which is central to both the precautionary principle and discussions around sustainability, is at the forefront of the Christian communities concerns.

The position established by the Christian community moves away from Beck (1992, 1999) and Adam and van Loon’s (2000) suggestion that scientific development is driving public concern regarding potential for future catastrophes. The Christian community suggested that the inappropriate focus of our decision making process has greater potential for negative effects in the future. Decisions made by society have the potential for greater impact than science and technology will have on society. The Christian community did not appear as concerned about the science which was involved in genetic modification because they felt that the issue of ethically responsible decision-making was the most significant concern.

This investigation has examined how the concern of the Christian community in New Zealand regarding genetic modification and has explored how their voice has been established within the government submission process. It challenges the notion that the debate should focus on scientific and economic argument, and instead explore the importance and implications of social, cultural and spiritual issues within the debate. This challenge is relevant to the genetic modification debate in New Zealand but also

challenges how New Zealand, as a society continues, to make decisions which will have future implications.

### **Future Research**

Research and debate over public attitudes towards genetic modification is continuing. In order to understand the real concerns of the community empirical research must move beyond investigating society as a broad group and investigate the concerns of different groups within the community. The Christian community has been the focus here but there are other religious groups, as well as environmental and social groups which could be considered.

The issue of interaction between church and state is one which has been strongly debated for many years. In New Zealand the church has been largely ineffective and ignored in many public debates where New Zealand's future, as a country, is being discussed. It is only in recent years that the Christian community has begun to present a voice on social and political issues. This investigation has considered how the Christian community has become involved in the formal dialogue process around genetic modification. Further investigations may research how the Christian community in New Zealand can become effectively involved in discussions (both at formal and informal levels) and can have a combined voice which is heard and is effective.

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**13,579 words**

## 7. Appendices

### Appendix 1 - Template used for submissions to the Royal Commission on Genetic Modification

#### Submission (“Interested Person”) Form 1

##### 4. Name of Organisation/Person accorded “Interested Person” Status

##### 5. Submission Executive Summary

###### Executive Summary

Provide an overarching summary of your submission and recommendations made [in respect of items (1) and (2) of the Warrant]. The Executive Summary should be no more than **3** pages in length

##### 6. Witness Briefs Attached

###### Witness Briefs

Provide a numbered list of the names and positions of witnesses from whom briefs are attached, including an indication as to whether or not you intend to present the witness at the formal hearings

##### 7. Submission by Section (as specified in the matters set out in the Warrant)

###### Submission by Section

Submissions are to be structured in line with the matters specified in the Warrant and the sections numbered accordingly.

Each section should stand alone, and include a Section Summary, identifying the issues addressed in the section.

###### Submissions may address all or only some of the sections (as specified in the Warrant).

However section numbers should be retained, for example, if a submission addresses matters (a), (c) and (e), the sections shall be numbered (a), (c), and (e), rather than a, b, and c. Submissions may, within each section, adopt a sub-section approach using different headings; however, each paragraph should be consecutively numbered

##### Section A Recommendations

The Warrant has set the Commission the task of receiving representations upon, inquiring into, investigating, and reporting on the items set out in Section A (1) and (2) below

###### Section A (1)

**A (1)** the strategic options available to enable New Zealand to address, now and in the future, genetic modification, genetically modified organisms, and products

###### Section A (2)

**A (2)** any changes considered desirable to the current legislative, regulatory, policy, or institutional arrangements for addressing, in New Zealand, genetic modification, genetically modified organisms, and products

## **Section B Relevant Matters**

The Warrant has set the Commission the task of receiving representations upon, inquiring into, and investigating, the matters set out in Section B (a) – (n) below

### **Section B (a)**

**B (a)** where, how, and for what purpose genetic modification, genetically modified organisms, and products are being used in New Zealand at present

### **Section B (b)**

**B (b)** the evidence (including the scientific evidence), and the level of uncertainty, about the present and possible future use, in New Zealand, of genetic modification, genetically modified organisms, and products

### **Section B (c)**

**B (c)** the risks of, and the benefits to be derived from, the use or avoidance of genetic modification, genetically modified organisms, and products in New Zealand, including:  
**(i)** the groups of persons who are likely to be advantaged by each of those benefits  
**(ii)** the groups of persons who are likely to be disadvantaged by each of those risks

### **Section B (d)**

**B (d)** the international legal obligations of New Zealand in relation to genetic modification, genetically modified organisms, and products

### **Section B (e)**

**B (e)** the liability issues involved, or likely to be involved, now or in the future, in relation to the use, in New Zealand, of genetic modification, genetically modified organisms, and products

### **Section B (f)**

**B (f)** the intellectual property issues involved, or likely to be involved, now or in the future, in relation to the use in New Zealand of genetic modification, genetically modified organisms, and products

### **Section B (g)**

**B (g)** the Crown's responsibilities under the Treaty of Waitangi in relation to genetic modification, genetically modified organisms, and products

### **Section B (h)**

**B (h)** the global developments and issues that may influence the manner in which New Zealand may use, or limit the use of, genetic modification, genetically modified organisms, and products

### **Section B (i)**

**B (i)** the opportunities that may be open to New Zealand from the use or avoidance of genetic modification, genetically modified organisms, and products

**Section B (j)**

**B (j)** the main areas of public interest in genetic modification, genetically modified organisms, and products, including those related to:

**(i)** human health (including biomedical, food safety, and consumer choice)

**(ii)** environmental matters (including biodiversity, biosecurity issues, and the health of ecosystems)

**(iii)** economic matters (including research and innovation, business development, primary production, and exports)

**(iv)** cultural and ethical concerns

**Section B (k)**

**B (k)** the key strategic issues drawing on ethical, cultural, environmental, social, and economic risks and benefits arising from the use of genetic modification, genetically modified organisms, and products

**Section B (l)**

**B (l)** the international implications, in relation to both New Zealand's binding international obligations and New Zealand's foreign and trade policy, of any measures that New Zealand might take with regard to genetic modification, genetically modified organisms, and products, including the costs and risks associated with particular options

**Section B (m)**

**B (m)** the range of strategic outcomes for the future application or avoidance of genetic modification, genetically modified organisms, and products in New Zealand

**Section B (n)**

**B (n)** whether the statutory and regulatory processes controlling genetic modification, genetically modified organisms, and products in New Zealand are adequate to address the strategic outcomes that, in your opinion, are desirable, and whether any legislative, regulatory, policy, or other changes are needed to enable New Zealand to achieve these outcomes

## Terms of reference (the Warrant)

Extract from *New Zealand Gazette*, 11 May 2000, No. 49, p. 1072

### ***Royal Commission on Genetic Modification***

Elizabeth the Second, by the Grace of God Queen of New Zealand and Her Other Realms and Territories, Head of the Commonwealth, Defender of the Faith:

To The Right Honourable Sir THOMAS EICHELBAUM, G.B.E., of Wellington, formerly Chief Justice of New Zealand; JACQUELINE ALLAN, of Auckland, medical practitioner; JEAN SUTHERLAND FLEMING, of Dunedin, scientist; and the Right Reverend RICHARD RANDERSON, of Auckland, Bishop of the Anglican Church:

GREETING:

### ***Appointment and order of reference***

KNOW YE that We, reposing trust and confidence in your integrity, knowledge, and ability, do, by this Our Commission, nominate, constitute, and appoint you, The Right Honourable SIR THOMAS EICHELBAUM, JACQUELINE ALLAN, JEAN SUTHERLAND FLEMING, and The Right Reverend RICHARD RANDERSON, to be a Commission to receive representations upon, inquire into, investigate, and report upon the following matters:

- (1) the strategic options available to enable New Zealand to address, now and in the future, genetic modification, genetically modified organisms, and products; and
- (2) any changes considered desirable to the current legislative, regulatory, policy, or institutional arrangements for addressing, in New Zealand, genetic modification, genetically modified organisms, and products:

### ***Relevant matters***

And, without limiting the order of reference set out above, We declare that, in conducting the inquiry, you may, under this Our Commission, investigate and receive representations upon the following matters:

- (a) where, how, and for what purpose genetic modification, genetically modified organisms, and products are being used in New Zealand at present:
- (b) the evidence (including the scientific evidence), and the level of uncertainty, about the present and possible future use, in New Zealand, of genetic modification, genetically modified organisms, and products:

**Report** | *Royal Commission on Genetic Modification*

- (c) the risks of, and the benefits to be derived from, the use or avoidance of genetic modification, genetically modified organisms, and products in New Zealand, including —
  - (i) the groups of persons who are likely to be advantaged by each of those benefits; and
  - (ii) the groups of persons who are likely to be disadvantaged by each of those risks:
- (d) the international legal obligations of New Zealand in relation to genetic modification, genetically modified organisms, and products:
- (e) the liability issues involved, or likely to be involved, now or in the future, in relation to the use, in New Zealand, of genetic modification, genetically modified organisms, and products:
- (f) the intellectual property issues involved, or likely to be involved, now or in the future, in relation to the use in New Zealand of genetic modification, genetically modified organisms, and products:
- (g) the Crown's responsibilities under the Treaty of Waitangi in relation to genetic modification, genetically modified organisms, and products:
- (h) the global developments and issues that may influence the manner in which New Zealand may use, or limit the use of, genetic modification, genetically modified organisms, and products:
- (i) the opportunities that may be open to New Zealand from the use or avoidance of genetic modification, genetically modified organisms, and products:
- (j) the main areas of public interest in genetic modification, genetically modified organisms, and products, including those related to —
  - (i) human health (including biomedical, food safety, and consumer choice):
  - (ii) environmental matters (including biodiversity, biosecurity issues, and the health of ecosystems):
  - (iii) economic matters (including research and innovation, business development, primary production, and exports):
  - (iv) cultural and ethical concerns:
- (k) the key strategic issues drawing on ethical, cultural, environmental, social, and economic risks and benefits arising from the use of genetic modification, genetically modified organisms, and products:
- (l) the international implications, in relation to both New Zealand's binding international obligations and New Zealand's foreign and trade policy, of any

measures that New Zealand might take with regard to genetic modification, genetically modified organisms, and products, including the costs and risks associated with particular options:

- (m) the range of strategic outcomes for the future application or avoidance of genetic modification, genetically modified organisms, and products in New Zealand;
- (n) whether the statutory and regulatory processes controlling genetic modification, genetically modified organisms, and products in New Zealand are adequate to address the strategic outcomes that, in your opinion, are desirable, and whether any legislative, regulatory, policy, or other changes are needed to enable New Zealand to achieve these outcomes:

### **Definitions**

And We declare that, in this Our Commission, unless the context otherwise requires, —

**genetic modification** means the use of genetic engineering techniques in a laboratory, being a use that involves —

- (a) the deletion, multiplication, modification, or moving of genes within a living organism; or
- (b) the transfer of genes from one organism to another; or
- (c) the modification of existing genes or the construction of novel genes and their incorporation in any organisms; or
- (d) the utilisation of subsequent generations or offspring of organisms modified by any of the activities described in paragraphs (a) to (c)

**genetically modified organism** means an organism that is produced by genetic modification

**organism** includes a human being

**product** includes every medicinal, commercial, chemical, and food product that (while not itself capable of replicating genetic material) is derived from, or is likely to be derived from, genetic modification:

### **Exclusions from inquiry**

But We declare that you are not, under this Our Commission, to inquire into the generation of organisms or products using modern standard breeding techniques (including cloning, mutagenesis, protoplast fusions, controlled pollination, hybridisation, hybridomas and monoclonal antibodies):

### **Appointment of chairperson**

And We appoint you, The Right Honourable SIR THOMAS EICHELBAUM, to be the Chairperson of the Commission:

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**Power to adjourn**

And for better enabling you to carry this Our Commission into effect you are authorised and empowered, subject to the provisions of this Our Commission, to make and conduct any inquiry or investigation under this Our Commission in such manner and at such time and place as you think expedient, with power to adjourn from time to time and from place to place as you think fit, and so that this Our Commission will continue in force and any such inquiry may at any time and place be resumed although not regularly adjourned from time to time or from place to place:

**Consultation and procedures**

And you are required, in carrying this Our Commission into effect, —

- to consult with the public in a way that allows people to express clearly their views, including ethical, cultural, environmental, and scientific perspectives, on the use, in New Zealand, of genetic modification, genetically modified organisms, and products; and
- to adopt procedures that will encourage people to express their views in relation to any of the matters referred to in the immediately preceding paragraph; and
- to consult and engage with Māori in a manner that specifically provides for their needs; and
- to use relevant expertise, including consultancy and secretarial services, and to conduct, where appropriate, your own research:

And you are empowered, in carrying this Our Commission into effect, —

- (a) to prepare and publish discussion papers from time to time on topics relevant to the inquiry; and
- (b) unless you think it proper in any case to withhold any evidence or information obtained by you in the exercise of the powers conferred upon you, —
  - (i) to include in any discussion papers prepared and published by you all or any of that evidence or information; and
  - (ii) to publish or otherwise disclose in such other ways as you think fit all or any of that evidence or information:

**General provisions**

And, without limiting any of your other powers to hear proceedings in private or to exclude any person from any of your proceedings, you are empowered to exclude any person from any hearing, including a hearing at which evidence is being taken, if you think it proper to do so:

And you are strictly charged and directed that you may not at any time publish or otherwise disclose, except to His Excellency the Governor-General in pursuance

of this Our Commission or by His Excellency's direction, the contents or purport of any report so made or to be made by you:

And it is declared that the powers conferred by this Our Commission are exercisable despite the absence at any time of any 1 or any 2 of the members appointed by this Our Commission so long as the Chairperson, or a member deputed by the Chairperson to act in the place of the Chairperson, and at least 1 other member, are present and concur in the exercise of the powers:

And We do further declare that you have liberty to report your proceedings and findings under this Our Commission from time to time if you judge it expedient to do so:

**Reporting date**

And, using all due diligence, you are required to report to His Excellency the Governor-General in writing under your hands, not later than 1 June 2001, your findings and opinions on the matters aforesaid, together with such recommendations as you think fit to make in respect of them:

And, lastly, it is declared that these presents are issued under the authority of the Letters Patent of Her Majesty Queen Elizabeth the Second constituting the office of Governor-General of New Zealand, dated 28 October 1983, and under the authority of and subject to the provisions of the Commissions of Inquiry Act 1908, and with the advice and consent of the Executive Council of New Zealand.

In witness whereof We have caused this Our Commission to be issued and the Seal of New Zealand to be hereunto affixed at Wellington this 8th day of May 2000.

Witness Our Right Trusty and Well-beloved Counsellor Sir Michael Hardie Boys, Principal Knight Companion of Our New Zealand Order of Merit, Knight Grand Cross of the Most Distinguished Order of Saint Michael and Saint George, Principal Companion of Our Service Order, Governor-General and Commander-in-Chief in and over New Zealand.

MICHAEL HARDIE BOYS, Governor-General.

By His Excellency's Command —

HELEN CLARK, Prime Minister.

Approved in Council —

MARIE SHROFF, Clerk of the Executive Council.

By Order of Council dated 14 May 2001, the time for reporting was extended to 27 July 2001.

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