

Genetics- Reaction to the Royal Commission

A public perspective of Genetic Engineering – the law
and the Report of the Royal Commission.

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1. Introduction

This paper presents a public perspective of the debate on genetic engineering. GE Free NZ is an organisation of ordinary citizens who have incorporated for the sole reason of public advocacy on this issue; we have no other reason for being in existence and are all volunteers.

The public have expectations of the law; which is the fabric of civilised society. Those expectations are high, and rightfully so; and it is in that light that I address the issues of the law in relation to genetic engineering and the recent Report of the Royal Commission of inquiry into Genetic Engineering.

2. The law

New Zealand already has some of the most prescriptive and robust law relating to genetic engineering. For example, both the Resource Management Act (RMA) and the Hazardous Substances and New Organisms Act (HSNO) restrain field trials and general release of genetically engineered organisms.

On this basis, there should not be any need for ordinary citizens to have to sacrifice time and energy protesting about such issues; and indeed questions the need for the Royal Commission to review these matters in the first place. Given that a former Chief Justice chaired the Royal Commission, surely the public could reasonably expect the eventual report to clearly reinforce the current law.

If one were to consider all the interpretations of the Royal Commission Report, there seems little mention of these points; and there is still much confusion as to the future. This is not the way of the law, or the justice system, which is supposed to be a steady guide as to how we act within society.

Surely this means that somebody has got things wrong, and the question must then be asked of the Royal Commission as to why its report is not clear in its reinforcement of the current law.

It is unlikely that the Royal Commission erred. The Commissioners were well aware of the circumstances relating to the law. They would have had full opportunity to see how the law relating to Genetic Engineering was addressed by the regulatory agencies involved. The Commissioners may have decided on a more subtle approach rather than an outright reinforcement of the law.

This reflects on the system of environmental law in this country; and is cause for public concern. So how might this have happened, and what concerns does it pose, not just for Genetic Engineering, but the rule of law in this country?

3. The law is ahead of the science.

Although Genetic Engineering has been around for over twenty years; the first commercial transgenic crops were only planted in 1995 (Loveii, 2001); well after the RMA came into law, and about the same time as HSNO was being finalised. The environmental principles of these acts were well formed prior to Genetic Engineering receiving the intense focus of today.

Relevant sections of the RMA include the interpretation of “*contaminant*” at s.2:

“Contaminant” includes any substance (including ... micro-organisms) ... that either by itself or in combination with the same, similar, or other substances...

(a) When discharged into water, changes or is likely to change the physical, chemical, or biological condition of water; or

(b) When discharged onto or into land or into air, changes or is likely to change the physical, chemical, or biological condition of the land or air onto or into which it is discharged:

and discharge of contaminants at s.15

1) No person may discharge any---

...

(b) Contaminant onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water; ... unless the discharge is expressly allowed by a rule of a regional plan, a resource consent, or regulations.”

The architects of this legislation may not have had genetically modified organisms specifically in mind, but their caution over environmental risk is apparent.

A relevant definition from the more recent HSNO Act is “*field test*” at s.2:

“Field test” means, in relation to an organism, the carrying on of trials on the effects of the organism under conditions similar to those of the environment into which the organism is likely to be released, but from which the organism, or any heritable material arising from it, could be retrieved or destroyed at the end of the trials; ...

So clearly the legislators were concerned that new organisms, once released were here for good. They were not the only ones who foresaw the “*genie in the bottle*” syndrome.

However, even more recently in 1998, the Environmental Risk Management Authority (ERMA) reinforced this principle with a protocol stating:

An application for approval for containment will specify the secure location or facility where the organism is to be contained. A secure location or facility is one that is under the supervision of the facility manager; who must be able to manage the security of the organism, and of material and people within the boundaries of the containment zone. If this is not possible, the application should be for release. For field testing of genetically modified organisms, the Authority will need to be assured that the genetically modified material will be contained.”

ERMA Protocol, *Interpretations and Explanations of Key Concepts Number 3, Series 2.*

So with all this collective wisdom of Parliament, the Ministry for the Environment and ERMA, why is there so much public concern? The public want the environment that sustains them to be protected; and genetic engineering kept within safe containment. Surely this is provided for in the legislation?

It is apparent that field trials are virtually impossible because of the task of retrieving all plant material from the soil. Without field trials, GE technology, which is very expensive anyway, is unlikely to attain commercial release in New Zealand. There appear to be no proven commercially successful GE crops elsewhere in the world; and with New Zealand's unique agricultural environment, commercial success is even less assured.

Yet what were Regional Councils previously doing with respect to the RMA; and how did the Ministry for the Environment permit so many field trials before the imposition of the moratorium during the Royal Commission? Why did ERMA approve field trials for genetically engineered pines only last December, while the Commission was still sitting?

At the Royal Commission GE Free asked ERMA witnesses if the Authority was having difficulty interpreting the law in relation to field tests (Royal Commission Transcript p.4503 2 March 2001). Their answers indicated they are having trouble with legal interpretation when approving GE field trials. As ERMA holds the status of a District Court it is a fair question to ask if this is what the public should be able to expect, and why is there such difficulty with the legislation?

4. Why is the law ahead of the science?

For some reason New Zealand scientists involved in genetic engineering field trials have generally ignored the fact that not only is it impossible to retrieve plant material from test sites; but also that GE plants can impart transgenic DNA in fungi and bacteria to the soil. The effects of transgenic plants and organisms on soil biota are not well understood, but they can cause changes there (Loveii, 2001) (O'Callaghan & Glare, 2001).

This should not be a surprise to our scientists. As long ago as 1885, the German scientist Frank discovered fungal organisms that cross infect plant cells and soil particles in a symbiotic relationship. This phenomenon is thought to have existed as long as terrestrial plants. The fungi are referred to as *mycorrhiza*, from the Greek for fungus and the German for root. Although a poorly researched area of science for many years, there has been much research since 1980. Therefore, there is no apparent reason for New Zealand scientists to be unaware of the issue.

It is a fair question then as to how two major pieces of environmental legislation were enacted without this fact being considered. ERMA thought of an answer in a recent decision to allow field trials with genetically engineered pines. The decision said:

“If the mere possibility, however remote, of an organism not being retrieved at the end of the trial disqualified a proposal from being a field test, the field test category would be redundant. It would never be able to be used, as 100% guarantees are not available. Activities under the Act would be limited to developments and releases. While some might argue that this is a good thing, it is clearly not what the law currently provides for.”

ERMA decision GMF 9901 20.12.2000

This decision indicates that ERMA believe the legislators intended for GE field trials to be different to any other environmental release of a new organism. This logic may be of interest to a jurist, but must be of concern to the public who expect the law to be followed, and not interpreted in such a way that appears to meet other agenda.

5. How the Royal Commission responded

GE Free made legal submissions to the Royal Commission on these points. We sought the Royal Commission to strictly interpret the definition of *“field test”*.

We could have expected to see this clearly reflected in the recommendations and Executive Summary, but not so. Instead, we noted vague comment about *“proceeding with caution”*. Initial reactions saw proponents of GE praising the report; and the anti

GE lobby complaining, leading many to believe the Report was pro GE, certainly many major newspaper editorials initially reflected this view.

However our initial disappointment lifted when in the detail of the report we found the following reference to field trials:

“ We heard from Dr Daniel Cohen of HortResearch that he was carrying out a field trial of transgenic tamarillos at HortResearch’s Northland Research Station. We heard considerable public doubt about the adequacy of the containment of this trial. The Commission considers that this public concern was justified.

In light of concerns that have arisen this year in connection with horizontal gene transfer (HGT) we consider that rigorous monitoring of field trials is essential and that all material associated with the trial must be removable from the site.

... It is important to note that no one argued for completely unregulated research. Even the most enthusiastic supporters of genetic modification were clear that it was vital that research was conducted within a context of a robust regulatory framework, and that risks should be carefully managed.

Royal Commission Report Ch.6P.123

We question the political response if the Royal Commission had made such a strong statement in the recommendations, or in the Executive Summary. The outcry from the pro GE lobby may have forced politicians to treat the report like the Erebus report and many others, and file them as historical documents. Instead we have the situation where most complaint about the Report comes from the environmental movement, and the pro GE lobby seem to have accepted it without question.

It would appear that many people have since read the fine print, as any lawyer would; and the responsibility for compliance with the RMA and HSNO is now with the environmental legal system.

6. Liability

The HSNO Act s.61 affords ERMA the immunities and privileges of a District Court Judge. This situation means that, in theory, if ERMA make a decision on field trials or commercial release, and the applicants follow the decision to the letter, it could be difficult to establish liability for any loss to third parties from the activity.

In verbal response to our submissions on this point at the Commission hearing, Sir Thomas Eichelbaum commented that if ERMA, or any other judicial officials, were forced to personally indemnify their decisions, few if any people would be prepared to sit in such positions. However we believe it relevant to question whether ERMA would consider decisions differently if they were personally responsible for the consequences. If there were less immunity available now, would we see the same standard of recent decisions?

GE Free suggested to the Royal Commission that because of this anomaly, applicants for field trials or release should be forced to seek commercial indemnity to cover any risk. In reality this would be difficult, if not impossible, to obtain because insurers are reluctant to accept risks for Genetic Engineering, especially because the risks are so difficult to quantify for actuarial analysis.

Current liability “*socialises*” the risk to New Zealand as a whole, as well as the specific people or industries directly affected by any breach of containment. The Royal Commission Report recognised this with the comment:

“The emphasis is on preventing damage or injury in the first place, rather than creating a liability regime additional to that already in place...this means there is the potential for some socialisation of unforeseen or unanticipated loss or damage, but we consider that, with the emphasis on prevention, this is appropriate.”

Royal Commission Report Chapter 12 P328 Paras 82/83

We believe “*socialised risk*” is a matter of major public concern; the acceptance of any such risk to the nation should be taken very seriously.

The Royal Commission enlarged on the liability issue with the comment:

“The question arises whether ERMA or MAF could be held liable for negligence in giving or refusing approval. ...ERMA could be held liable under the headings of negligence or nuisance ...or misfeasance of public office.”
Royal Commission Report Ch.12 p.320

This indicates that government agencies could be held liable for negligently approving GE field trials or releases. This raises specific issues; such as what is there to ensure government agencies act properly to manage risk, and who pays in the end for any negligence?

The New Zealand Society for Risk Management commented on the Royal Commission Report as follows:

“As with any risk, it is important to understand the context in which it occurs, which includes the wellbeing of present and future New Zealanders and the environment. There are recognised methods through which those risks can be identified and treated so that socially preferred outcomes are more likely and less desirable outcomes are avoided or reduced...”

... It is unfortunate that the Order in Council did not require the Commission to adopt an explicit risk management process, as set down in the Australia/New Zealand Standard 4360:1999 for Risk Management...

Technological developments, such as GM, are best managed after identifying the full context of possible effects, both positive and negative and the risks of those effects. In this case, the context is the wellbeing of all New Zealanders and the future viability of our ecological and agricultural systems...

...Risks cannot be assessed or treated unless there is a clear understanding of both likelihood and consequences; the uncertainties involved; and how those risks rank with other risks already accepted by the community.

The Commission has recorded information from submitters on the risks of GM but has not always provided sufficient analysis of the risks eg for the environment and human health.

The Report has discussed one of the more significant risks from genetic technologies, that of legal liability for both foreseeable and unanticipated damage but the Society considers that there are still many important issues to be resolved.

The Society hopes that in considering the Report the Government will more explicitly adopt a risk management framework...”

New Zealand Society for Risk Management 3 August 2001.

The Government, and therefore the taxpayer indemnify ERMA. So who should have the final say in the acceptance of any risk? Should it be Parliament, Cabinet, or by Referendum; and what conditions have the Government, as the indemnifying body placed on ERMA; and how do ERMA assess the risk anyway?

ERMA's responsibilities are specified in s.11 of the RMA. There is no mention of risk assessment, indicating the Government may not have even considered this factor.

By indicating they see no need to change the law on liability, the Royal Commissioners again seem to have put the issue in the hands of the environmental law system; because we as a nation cannot afford to be insurers when commercial insurers won't accept the risk.

7. Summary

Although the Royal Commission have made it difficult to release GE crops in New Zealand; they did not make it a clear edict, with one stroke of the pen. They have also indicated the current law on liability is sufficient, when the public could have expected more assurance.

The fine print of the Report has still to be interpreted, and argued, within the environmental legal system. It may be a sign of their confidence in that system that the Royal Commissioners have chosen to present their concerns in this way; hopefully the system is up to the responsibility. The weakness in the process is that without voluntary public effort the legal system is unlikely to hear evidence from that perspective; which is already a reality of environmental law in New Zealand.

The question remains as to what standards the New Zealand environmental legal system can offer the public; and what level of confidence can the public hold in return. Surely the protests over the GE issue would not have been so strong if the law had been interpreted with more consideration.

Hopefully the final public perspective of the GE issue will be that the standards of the New Zealand legal system can deliver justice for us; if for whatever reason, government ministries, local bodies, and a quasi-judicial tribunal are unable to do so.

References

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