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"Revisiting the GE debate: On 'moving forward with care' and the ongoing implications for democracy in New Zealand"

"Technology is integral to the advancement of the world . . . . the human race has ever been on the cusp of innovation . . . . we should go forward but with care". Thus spoke the New Zealand Royal Commission on Genetic Modification (RCGM) in their report of 2001. After months of consultation, deliberation and debate that involved literally thousands of New Zealanders and cost New Zealand taxpayers $6.2 million, public and policy-makers alike were advised by the Commission that the forward progress of the nation depends on "preserving opportunities", but doing so selectively, and with caution. The ruling Labour Government adopted most of the recommendations of the RCGM, and in due course also adopted this mantra of caution, opportunity and progress.

The question remains, however, as to whether the Government, by means of its chief regulatory agencies of biotechnologies, is living up to its promises of caution. Has the Environmental Risk Management Authority (ERMA) instituted and maintained the "rigorous regulatory environment" within which these groundbreaking technologies might be safely deployed? Three years on from the RCGM, are ERMA, as well as the Ministry of Agriculture and Forestry (MAF) and the Ministry for the Environment (MfE), proceeding with all due caution? Can anyone actually tell?

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Most centrally, how do government actions and policies around genetic engineering reflect on the state of democracy in New Zealand in 2004? Genuine democracy is dependent on a few easily elaborated basic principles: consent of the governed, free access to information by the public, and transparency and accountability in government actions. Does the current Labour government live up to these basic criteria when it comes to governing genetic engineering?

Consultation as consent

At first glance, the RCGM appears to qualify as an exhaustive effort at gaining the consent of the governed; numerous speaking opportunities were provided for members of the "general public" as well as designated sub-groups such as Māori and youth. There were public meetings, Māori workshops and hui, over 10,000 written public submissions, and a public opinion survey. And overall, the results were unequivocal. While there was considerable openness to continued GM laboratory research in containment and to some medical uses, there was widespread opposition to the release of GMOs into the environment.[1]

[1] An important exception to this overall response by the public were the views of "interested persons" to the Commission, comprised of those who, in keeping with statutory requirements, were given the opportunity to show that they had an interest in the topic of inquiry "apart from that in common with the public". It is here that one finds the views of biotechnology corporations, research institutions, environmental advocacy groups, universities, iwi and other Māori groups, and government agencies. And most importantly, it is amongst "interested persons" that one finds a majority of submitters (approximately 60%) in support of wide-ranging development of GM technologies. The relationship between "interested persons" and the public is complex; since this article focuses strongly on the views of the general public that relationship will not be explored here.

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In response to this strong statement of public opinion, the RCGM's central recommendation nonetheless focussed on moving forward, including towards the possibility of eventual widespread release of GMOs, albeit with caution. When the Government considered the Commission's recommendations, most of which it accepted, its approach to the prescription for caution was to impose the much-publicised two-year moratorium on the release of GMOs into the environment. The moratorium was duly lifted in October of 2003, against the wishes of two-thirds of the New Zealand public. To date no applications for either conditional or full release of GMOs have been made to ERMA, nonetheless the lifting of the moratorium suggests that the government is open to the possibility that successful applications might be made, and GMOs could be released as a result.

For consultation to bear any relationship to consent there is an obvious requirement that policy-makers respond in a way that is consistent with the results of their consultation exercises. Given the strong public opposition to the release of GMOs, how can the RCGM's recommendations and the government's decision to lift the moratorium be justified? The RCGM provided at least one pat answer to this question in their report of 2001: "The terms of reference did not direct us to conduct our inquiry as if it were a referendum" (RCGM, 2001: 7). Simple enough, and perhaps justifiable in some cases, but why ask in the first place when even such unequivocal results have no apparent impact on outcomes? In an equally disingenuous move, when asked in September of 2003 by the New Zealand Herald to defend the lifting of the moratorium, Helen Clark replied, "We are really in a default position, the moratorium automatically lapses on a

specified date" (Beston, 2003). This claimed powerlessness and the associated lack of accountability by a Prime Minister is curious, to say the least.

But perhaps this is all old news; is the government doing any better by now? They're still making efforts at consultation; in November of 2003 the Ministry for the Environment conducted a "Talk Environment" roadshow that visited "16 regions from Whangarei to Invercargill. The aim was to talk to you about our work and more importantly to hear your thoughts and ideas on what and how we're doing" (Carbon, 2003). The most significant result of this consultation exercise speaks directly to issues of consent and self-determination: "Participants gave us a very strong message about working with our communities rather than imposing rules on them. They asked us to view people as part of the solution, rather than as part of the problem". Yet just four months later, in March of 2004, Marion Hobbs, Minister of the very same Ministry for the Environment makes a well-publicised move that is completely contrary to this clearly stated wish of local communities. Several Northland district councils and Local Government New Zealand had funded a report by Dr Royden Somerville QC in which he found that "local authorities have the ability to manage local effects of GM organisms" (Whangarei District Council, 26 March 2004), including the possibility of creating GE-free zones under the Resource Management Act. Not so fast, says Minister Hobbs. In her view, "the district council's legal opinion would be fairly ineffective and would cost ratepayers to uphold" (NZ Herald, 26 March 2004). The councils would have to conduct scientific research "over and above what Erma carried out", and in her view that would be too costly and it would be difficult to achieve adequate scientific standards. So nix on

local control; this is a matter for central government. And once again, nix on responding to consultation in a meaningful way, even when in this case Hobbs' pronouncements go against international trends. The Australian states of Victoria, Western Australia and Tasmania have recently imposed either moratoria or bans on GM crops (Checkbiotech.org, 25 March 2004), and ten European regions in 7 countries have declared themselves GMO-free (GMO-free Europe).

The government is currently completing consultation on the Cartagena Protocol to the Convention on Biological Diversity, an international agreement (as yet unratified by New Zealand) that regulates the import and export of GMOs. Watch this space to see if they are any more responsive to public wishes in this instance.

Information, accountability and transparency

> Increasingly citizens in many walks of life want to know more about what science is actually doing, and to have more say in what technologies should, and should not, be developed in the name of bettering their world.
> (Parliamentary Commission for the Environment, 2000: 4)

In order for decision-making about genetic engineering to include the public in a meaningful way, they must have easy access to reliable and independent information on which to ground their choices. The public has repeatedly expressed the desire for more information on genetic engineering, and in a benchmark survey conducted for the Ministry for the Environment in November of 2001, "almost 80% claimed they wanted to

find out more about genetic modification and how it is controlled in New Zealand. Almost one half claimed they wanted to find out 'a lot' more" (MfE, 2001: 4).[2]

This same report indicates that the MfE is charged with providing this information to the public, and if one travels to the MfE website on new and genetically modified organisms[3], one will find information on genetic modification, of a sort. There is information on the Hazardous Substances and New Organisms (HSNO) Act, as well as a pamphlet (October 2003) and a booklet (June 2004) on "Genetic Modification – The New Zealand Approach". These publications adopt a user-friendly approach, and are clearly targeting the same lay audience that is appealing for more information.

The jury is still out, however, on whether these publications are more oriented towards enlightenment or obfuscation. The picture presented of both the science of genetic engineering and New Zealand's ability to effectively regulate this technology is decidedly rosy, and overlooks or downplays information that might interfere with the central government policy of "moving forward with care". Perhaps the most significant example of this is in the representation of the technology itself.

> One drawback of trying to improve plants and animals in the conventional way is that it takes a long time, and traditional breeding can never guarantee the presence of a desired characteristic – or the absence of an unwanted characteristic – in the resulting offspring. Genetic modification allows scientists to change genes in a more specific or controlled way. (MfE, 2004: 4)

[2] This desire for information was also expressed in a number of submissions to the RCGM, in the Parliamentary Commissioner for the Environment's report "Caught in the Headlights" (cited above), and in the 2003 "Environment Talk" roadshow.
[3] http://www.mfe.govt.nz/publications/organisms

This model of precision and control is likely to promote confidence in the technology and its possible benefits; unfortunately it bears a tenuous relationship to the accuracy and sophistication of existing scientific practice. According to a recent position paper issued by the Ecological Society of America (2004), the current state of gene technology falls far short of this idealised model.

> transgenes are inserted into haphazard chromosomal locations, often at multiple sites in the genome. . . . These types of unintended effects will continue to occur until more sophisticated methods are available for inserting transgenes into predetermined locations on the genome. While targeted insertion is possible in viruses, bacteria, and yeasts, this goal has been elusive in more complex organisms. (Snow et al, 2004: 7)

This imprecision in itself doesn't necessarily present a problem; by definition technologies must first be rudimentary before they can become more refined, and there are very few voices calling for a halt to research into the mechanisms of genetic engineering. Problems only arise when the effects of such technologies create significant and irreparable damage, for instance through irreversible GE contamination, and this is the risk posed by the potential release of GMOs into the New Zealand environment.

The issue of release is where regulation is most crucial, and the MfE booklet has ample commentary on this point as well: "New Zealand's laws and regulations governing genetic modification are among the most rigorous in the world" (MfE, 2004: 9). The scope of New Zealand's policy on the regulation of GMOs is predictably vast, but another point raised in the information (or lack thereof) provided by the MfE merits close attention. In order to regulate well, one must have adequate knowledge of the matter to be regulated, and both the RCGM report and subsequent government pronouncements

have acknowledged the need for additional research into the impacts of GMOs. Indeed, subsequent to the RCGM the government funded "more than $7 million of research into [their] environmental, human health, economic, social and cultural impacts". (MfE, 2003a: 2). The MfE also explicitly links the GE moratorium to this need for additional research, claiming that "a two-year restricted period (or moratorium) preventing applications for the release of genetically modified organisms was put in place in 2001 to allow time for this [and other] work to be completed" (MfE, 2004: 9). Yet in a move reminiscent of the process of consulting with the public and then ignoring the answers, the government has funded substantial research and yet not waited for results before lifting the moratorium. Complex research of this nature requires years, rather than months, for funding to be allocated, let alone for the research itself to be completed. A noticeable gap in the MfE website appears to confirm the unfeasibility of government claims regarding this research; the most recent research publications on the website date from 2001, before it was even funded. This means that our regulators are "moving forward" without knowledge that the government itself acknowledges they need in order to do so "with care".

But perhaps we can rely on ERMA, the primary regulator of GMOs, to act with common sense and exercise caution, even when information is unavailable or incomplete. Helen Clark has no doubts on this count; she and her Minister for the Environment Marion Hobbs, as well as Associate Minister for the Environment Damien O'Connor can be heard repeating their confidence in ERMA over and over again in a kind of unceasing mantra. The public may have good reason to question this unswerving confidence in

ERMA, however. Recent events suggest that ERMA is willing to go light on the facts and long on faith when it comes to enforcing our "rigorous regulatory regime".

The recent controversy surrounding the sale of a farm property in the King Country formerly owned by Scottish firm PPL Therapeutics is a case in point. ERMA granted approval for the firm to breed transgenic sheep on the farm in 1999, and they subsequently raised a flock of over 3,000 transgenic sheep using imported semen from Scottish rams. PPL decided to cease operations in June of 2003, and sold the property to Whakamaru Farms Ltd in May of this year. The transgenic sheep have been incinerated and their ashes buried on the property. And ERMA now considers itself free to wash its hands of any further monitoring of the property: "The site is no longer a registered containment facility and there are no requirements for on-site monitoring" (NZ Herald, 17 May 2004). Spoken like a true bureaucrat. But unfortunately this bureaucratic approach is remarkably lacking in the prudence so much required given the lack of scientific knowledge about the possibilities for genetic contamination. Obviously the incinerated transgenic sheep won't go on to breed with unaltered livestock, but there is the possibility that microorganisms associated with these sheep, for instance from effluent or ashes, might persist in the soil or elsewhere. How we can we know if such microorganisms are present, much less a potential risk, if no monitoring is taking place? And if they are present, there is reason to have concern, given the current rudimentary state of knowledge on the environmental impacts of GMOs: "some genetically engineered crops and microorganisms have been shown to affect soil ecosystems . . . but the ecological significance of these changes is unclear" (Snow et al, 2004: 14). If there

are GMOs remaining at Whakamaru in the soil or elsewhere, what was once a site in containment has, by virtue of ERMA negligence and apparent disinterest, become a site of the inadvertent release of GMOs.

Inadvertent releases are nothing new, of course, given the unintentional importation and planting of GM-contaminated maize seed at various sites in New Zealand. Seed contamination is an admittedly different situation, however. The occasional importation of contaminated seed is perhaps inevitable; current methods of testing seed remain relatively crude and make it difficult to enforce New Zealand's zero-tolerance policy towards GMOs in the environment. What is not at all inevitable is the way in which MAF has proceeded with removing the crops grown from these seeds, estimated to have been sold to about 30 seed buyers. They are doing it in secret. They refuse to provide the location of properties on which the seed may have been planted, with MAF spokesperson Brett Sangster declining to identify the growers for "security reasons" (NZ Herald, 2 June 2004). Sangster claims to be acting on behalf of the growers, whom he doesn't want treated like criminals and whom he believes require protection from protesters.

Privileging security over free access to information is surely a sign of the times, but it also holds the potential to hide many sins. Public institutions require public oversight in order to claim legitimacy and in order for citizens to be assured that these institutions are acting effectively and in the public interest. Not only are we being asked to take on faith that MAF is doing its job well, farmers and beekeepers in the affected regions have no

way of knowing if they are near the contaminated sites and hence at risk, much less if MAF is adhering to best practice in the cleanup. And there is no reason to assume that MAF is up to the task. MAF was mentioned in the formal review of ERMA made public in March of 2003, and a potential risk in the system that relates directly to cleanup, i.e., enforcement, was clearly identified by the panel. MAF and ERMA are meant to work together in the monitoring and enforcement of government biotechnology policy, yet the review panel found that "there is not yet the degree of 'seamlessness' and integration at the decision/monitoring/enforcement interface that we believe is desirable. . . . It is at this point that we believe . . . that the 'system' of risk management for new organisms is most vulnerable" (MfE, 2003b). Nonetheless, we are asked to have faith that we can safely leave the task to MAF.

We are also asked to have in faith in the government's ability to disentangle the liability issues associated with GE contamination. Such a leap would appear to be particularly unwise. In July 2002, the Sustainability Council issued a press release pertaining to the Law Commission report on liability issues that had just been issued, and commented that "The Law Commission has said it can not advise on new law until the Government decides to what extent those undertaking GM research 'should be held accountable for anything that goes wrong'" (Sustainability Council, 17 July 2002).The Sustainability Council came out strongly in favour of a "polluter pays" principle, in which developers of biotechnologies are required to cover the cost of any damages, rather than these costs reverting to innocent taxpayers, farmers or businesses. One can't necessarily expect the government to agree with the Sustainability Council on this point, but we could at least

hope that they had made a decision on how to proceed in the intervening two years. Nonetheless, during Parliamentary question time on 12 May 2004, Green Party co-leader Jeanette Fitzsimons asked Marion Hobbs whether farmers who destroyed contaminated crops would be compensated for their losses, and if so, by whom. Hobbs' response was less than reassuring: "Since we have not arrived at the stage where we have found the seed planted in any field, I am not prepared to make any hypothetical statement about compensation or not". The equivocation of this response suggests that the government is still at a loss as to how to handle this complex issue, in spite the "rigorous regulatory regime" we are repeatedly told we are blessed with.

So what are we left with, and do ongoing government policy and actions resemble democracy in any clearly recognisable ways? The government has "moved forward", for instance by lifting the GE moratorium, in the face of repeated and significant public opposition, and without the benefit of completed research that they themselves have acknowledged they need. They have done so "with care" by summarily releasing a significant site of GE experimentation from containment status without further monitoring, and in another case by conducting the cleanup of verified GE contamination in secret. Throughout all of this they have presented a public eager for more information with simplistic and overly sanguine explanations of an embryonic, complex and incredibly powerful technology. And don't even ask about who will pay if things go badly wrong.

Take heart, ye of little faith. Not likely.