Topic: Genetic Engineering and Genetically Modified Organisms

Recommendations in response to submissions on the Proposed Regional Plan for Northland - Section 42A hearing report - addendum

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Northland REGIONAL COUNCIL

Addendum Report

1. This is an addendum report is prepared pursuant to Section 42A of the Resource Management Act 1991 (RMA). It follows a s.42A report prepared and circulated on 14 September 2018 (the "primary report"). Both reports have been authored by Peter Dean Reaburn. My qualifications are set out in the primary report. In this addendum report I confirm that I continue to abide by the Environment Court's Code of Conduct for Expert Witnesses.

2. It is important that this addendum report be read alongside my primary report. The primary report deferred recommendations until after the receipt of submitter evidence. The primary report raises a number of issues. These include matters that I believed at the time of preparing that report to be significant, particularly in relation to what in my view was insufficient information / evidence on which the Hearings Panel could make a decision, in the context of Northland, Northland's CMA, and the Proposed Regional Plan for Northland (the "PRP). These gaps have been generally acknowledged by both submitters and the further submitter (Federated Farmers) in the evidence that has now been received.

3. The basis for consideration is now more robust. However, noting that legal submissions and lay evidence is still to come, this addendum report does not conclude with a firm recommendation. In my view two options are available, both of which I believe have a potentially sound basis. One option is for GE / GMO provisions to be introduced now. The other option is to defer consideration to a future plan change. Both options acknowledge that GE / GMO matters need to be addressed, albeit in the CMA only. The differences between the two options relate to when provisions are introduced, and what form those provisions may take. The reason that I am not making a firm recommendation for a particular option is that I believe the costs and benefit differences between the two options to be only marginal. In other words, I could professionally support either option.

4. As with the primary report the views expressed in this report are mine and are not binding on the Hearing Panel. It should not be assumed that the Hearing Panel will reach the same conclusions.

Matters raised in evidence

5. I have read all of the evidence received. In this part of the addendum report I give an overview of the evidence and my comments in five parts – jurisdiction and geographical scope, scientific, economic, cultural and planning.

Jurisdiction and Geographical Scope

6. Jurisdiction is a legal matter and I expect legal submissions will be presented at the hearing on this matter. As in my primary report I believe it appropriate to make further comment from a planner's perspective, however I acknowledge further relevant information may be put before the Hearings Panel at the hearing.

7. No question has been raised, as yet, in relation to whether the submissions that have been received seeking GE / GMO provisions in the PRP are "on" the PRP. The evidence from Federated Farmers questions whether this is the appropriate process to introduce provisions, however that is a separate matter, discussed later in this report.

8. There appears to be consensus, including from Federated Farmers, that s12(3) of the RMA provides a statutory basis for the inclusion of GE/ GMO provisions in the CMA.

9. It is therefore not necessary to rely on s.15 as far as the CMA is concerned. In that respect I note that two of the main submitters, Whangarei District Council / Far North District Council and the Soil and Health Association, only seek provisions for the Northland CMA.

10. There are other submitters who appear still to seek land-based provisions. As noted in my primary report, s.15 would apply only if GE / GMOs was regarded as being a contaminant. The consensus in evidence appears to be that, while some GE / GMOs could potentially be defined as a contaminant, this would be case-dependent. In order to provide a statutory basis it would therefore appear to be necessary to specify what forms of GE / GMO would be a contaminant, and therefore subject to regional plan management. Given the potential range of GE / GMOs is substantial this would be a very difficult exercise. No submitter has attempted to devise provisions to address this concern. In any case, the obvious difficulty in doing so strongly suggests that land-based provisions are better addressed in district plans, where there is no question that RMA s.9 provides the statutory basis. In that respect, Whangarei District Council and Far North District Council already have GE / GMO provisions and the Kaipara District Council is currently considering introduction of provisions into its district plan.

11. In Paragraph 68 of my primary report, it was my opinion that significantly more detail would be required if provisions were be added to the PRP's Land (and Water) provisions. That detail has not been forthcoming and, quite apart from the question of there being a statutory basis, it is my view that there is insufficient basis on which to amend these parts of the PRP. I acknowledge that there is and will be further (lay) submitter evidence in these areas, however I do not address it further in this addendum report.

Scientific Evidence

12. Professor Jack Heinemann has prepared evidence on behalf of Whangarei District Council / Far North District Council and Professor Andrew Allan has prepared evidence on behalf of Federated Farmers. This evidence is an important response to issues I have raised in my primary report. I expect that the Hearings Panel will read it carefully and thus do not quote extensively from it in this report, apart from making some observations.

13. Professor Heinemann confirms that there are no living GMOs that have been released into coastal marine environments. He notes however that there are many organisms being discussed in the scientific literature. He discusses four of these, being GM salmon, GM algae as a cultivated biofuel and food for oysters, GM seaweed for food, animal feed and use in biofuels, fertilizers and cosmetics and GM bacteria used for bioremediation of plastic pollution. Professor Heinemann also discusses potential risks from these examples[1]. He states:

> *"…gene flow is expected to be a significant source of risk to the environment and that is why containment rather than release has been the strategy to mitigate the risk of existing GMOs relevant to the coastal marine environment. Containment may also fail and that potential should also be considered in a risk assessment. Where the risk of containment failure is considered too high, prohibition of the GMO may be the only effective mitigation strategy."*[2]

14. In other parts of his evidence Professor Heinemann reviews international literature. Supported by references to that literature, he states:

- *"there is a consensus of the need for ongoing risk assessment of GMOs whether used as food or in the environment"*[3],
- *"A number of scientific panels ad high-level science advisory committees have issued opinions consistent with precaution"*[4]
- *"Difficulties in containing GMOs and possible irreversibility of any potential adverse effects are matters of concern to scientists.."*[5]
- *There is a lack of information needed to adequately assess some risks, including potential long-term environmental and health and safety effects, contributing to scientific uncertainty in risk assessments of GMOs."*[6]

[1] Professor Heinemann evidence, Paragraphs 47 - 53
[2] Ibid Paragraph 61
[3] Ibid Paragraph 28
[4] Ibid Paragraph 34
[5] Ibid Paragraph 37
[6] Ibid Paragraph 38

- *While there are scientists who have expressed opinions one way or another about all sorts of aspects of GMOs currently commercialised and released in other countries, there is no evidence that I can find that suggests many scientists hold firm opinions about GMOs of the future – that those so far not commercialised are and will be safe as food or in the environment, or that they should be unregulated."*[7]

15. In his executive summary Professor Allan states (underlining added):

> *"It is my opinion that:*
>
> *a. The ICWP information is out of date and incomplete*
>
> *b. The scientific consensus of GM is that it is safe, as evidenced by the fact that internationally GM plants (or GMOs) are now 10% of planted arable land. These have improved the economies of regions, and have not caused any measured increase in detrimental outcomes. GM techniques have been used for over 30 years. Co-existence is occurring, with GM and non-GM crops being planted in the same areas.*
>
> *c. Genetic technologies offer step changes in yield and consumer traits.*
>
> *d. There is likely to be a significant cost in delaying the use of these technologies*
>
> *e. Gene editing offers even more precise improvements to plants and animals, and does not add additional DNA. Gene edits, of a certain type, are unregulated in a number of countries so can compete with New Zealand's products in international markets.*
>
> *f. It is not possible to tell a gene edited organism from a non-GM organism produced through traditional breeding or mutagenesis."*[8]

16. Professor Heinemann and Professor Allan appear to be some distance apart in their views on the risks associated with GMOs, Professor Allan being much more confident that GM is safe. Professor Allan also criticises the evidence to date as not having had regard to gene editing.

[7] Ibid Paragraph 46
[8] Professor Allan evidence Paragraph 4.2

17. I am not a GE / GMO expert and I cannot offer advice on this matter other than to observe that it appears to be confirmed on this evidence that the scientist community does not have consensus. In my experience differing views are not unusual. Any science debate is only part of the picture and need not, in itself, determine what resource management option is most appropriate.

Economic Evidence

18. The only expert economic evidence is from Dr. John Small, on behalf of Whangarei District Council / Far North District Council ("WDC/ FNDC"). This is also important evidence in response to issues I have raised in my primary report.

19. Dr. Small discusses the costs and benefits of the option put forward by WDC/FNDC, being the approach taken in the Auckland Unitary Plan ("AUP"). In his summary, Dr. Small makes the following points[9]:

> - *There is already a group of businesses using bioscience in the Auckland/Northland region without field trials or outdoor release. I see no reason why the Proposal will impose any future costs on this activity.*
> - *No outdoor release of a GMO has been carried out in New Zealand under the HSNO Act.*
> - *There appears to be no GMO that is ready, or close to being ready for market release in Northland CMA.*
> - *The typical timeframes for developing GMOs are at least as long as the ten-year life of the councils' planning documents.*
> - *Even if a highly valuable GMO emerged much earlier than expected, the cost of the Proposal would be limited to the cost of a plan change process.*
> - *In respect of benefits, I note that community consultation in Northland has supported the regulation of GMOs, and that there are likely to be commercial benefits as well. Evidence for*

[9] Dr. Small evidence Paragraphs 4 and 5

the latter comes from parties selling New Zealand primary products for export who consider that buyers of these products currently attach value to non-GM production and to our GMO-free status. On this point I note that:

- *Because the benefit occurs now, protecting it is valuable; but*
- *If a clearly valuable GMO emerges at some future time, we can re-assess the merits of prohibiting the outdoor release of that GMO or set of GMOs.*

20. For these reasons Dr. Small concludes that the option put forward by WDC/FDNC has net benefits and should be approved.

21. In respect of the third bullet point above Dr. Small also states that there appears to be no GMO close to release for which there is a realistic prospect of release in the Northland Region over the 10-year life of the Plan[10]. He refers to parts of my primary report where I raised a concern that this may mean there is no issue to address, however takes an alternative view that, if precautionary approach provisions were introduced now, the absence of any likely prospect of GMO applications means opportunity costs are very low.

22. On the other hand, Dr. Small discusses the costs that would occur if GMOs were not restricted and adverse effects were to occur, particularly irreversible effects[11]. He states that the precautionary principle applies where there is an uncertain risk of serious harm[12]. In respect of uncertain risk of serious harm being present in this case, Dr. Small refers to Professor Heinemann's evidence[13], his own analysis[14] and recent academic work by Nassem Talib[15].

[10] Ibid Paragraph 17, also discussed in Paragraphs 40 - 47
[11] Ibid evidence Paragraphs 63 - 66
[12] Ibid evidence Paragraph 75
[13] Ibid evidence Paragraph 36
[14] Ibid evidence Paragraphs 37 - 39
[15] Ibid evidence Paragraph 75

23. In addition to benefits arising from the introduction of provisions into the PRP addressing risk avoidance, Dr. Small identifies:

- benefits in relation to community preferences – support from the community for the control of GMOs in Northland, and
- commercial advantages, such as in firms selling primary produce from Northland that trading on the GMO-free nature of their production, willingness to pay higher prices for food products, preferential access into food markets and more inbound tourism.

24. As with the science evidence, I am not an economist and make no comment on Dr. Small's economic analyses. I do note, however, that the evidence has a focus on the need for (as opposed to the costs and benefits of) a precautionary approach, particularly given Dr. Small's own view that it is very unlikely GMOs would be introduced into the Northland CMA even if there were no PRP provisions in the next 10 year life of the plan. I discuss that matter further in my conclusion.

Cultural Evidence

25. Dr. Benjamin Pittman has prepared two briefs of evidence, for the Soil and Health Association and GE Free Northland[16]. Tui Shortland has prepared evidence on behalf of members of Te Kopu, Pacific Indigenous and Local Knowledge Centre of Distinction.

26. Dr. Pittman's evidence contains a section on the Maori World View[17]. The following are extracts from that part of the evidence:

- *"The notion of dynamic balance and re-balance within the Māori worldview is central…"*[18]

[16] Both sets of Dr. Pittman's evidence are very similar – I refer in this report to the GE Free Northland Evidence
[17] Dr. Pittman's evidence, from Paragraph 12
[18] Ibid, Paragraph 13

- *.. both animate and inanimate things have what is termed mauri, a spiritual life force. This force connects those things and entities in the living world with those in the spiritual world and effectively sets up pathways between them. They therefore exist as a dynamic whole, a dynamic system.*[19]

- *Mauri means that regardless of any inter-relationship or inter- dependence, which might exist, the uniqueness of each organism or entity has to be maintained. Any mixing is an offence against tikanga.*[20]

- *So, the thought of combining what is effectively the mauri of one organism or entity with that of another is of deep cultural concern, since all are created by natural and spiritual forces and not human, this also results in interference in the natural order, the pre-determined whakapapa of all things or, whakapapa in evolution*[21]

- *From a Māori worldview enabling outdoor GE experiments/field trials release of GMOs would be offensive to the principles of tikanga and seriously damage the mauri of the land and surrounding environment. This is a case where s6(e) of the RMA should be regarded as critical to the Council's decision.*[22]

27. The Iwi and Hapū Management Plans[23] that exist in relation to Northland iwi and hapū reflect the above concerns and contain a strong signal that GMOs are culturally inappropriate Dr. Pittman expresses concern that, in respect my primary report I did not consider this amounts to "sufficient evidence" as to the cultural inappropriateness of GMOs to Northland Maori[24]. I regret that I was not clearer in my primary report as that is not a correct interpretation of my views. The primary report does raise a concern about the sufficiency of evidence, as a general concern in all areas. In that respect the evidence now received is of much assistance. I acknowledge that careful consideration needs to be given to Maori values, including to give effect to Objective 3 and Policy 2 of the NZCPS. I support Dr. Pittman's views in this respect. The Maori perspective and concerns regarding GMOs are a prime reason for considering the introduction of appropriate provisions in to the PRP. The concern I expressed in Paragraph 154 of my primary report was that I was in

[19] Ibid, Paragraph 14
[20] Ibid, Paragraph 15
[21] Ibid, Paragraph 16
[22] Ibid, Paragraph 23
[23] As recognised under s.66(2A) RMA
[24] Ibid, Paragraph 37

doubt, not whether provisions should be introduced, but whether cultural (and social) wellbeing matters alone justified the full range of response being sought by submitters. I return to this matter in my conclusion.

Planning Evidence

28. Mr. Warren is of the view that provisions need to be introduced into the PRP to give effect to the NZCPS[25]. Mr. Warren quotes and comments on a number of the NZCPS provisions in support of that conclusion. While I acknowledge this is also a matter for legal submission it is my opinion, as expressed in my primary report, that most of the provisions referred to by Mr. Warren will have relevance where it is shown definitively that there are or will be adverse effects or significant adverse effects of the type referred to in those provisions. I have acknowledged the relevance of Maori issues as discussed above. However, in general it is my view that the evidence is not definitive as to the prospect of there being GE / GMO issues in Northland's CMA, at least over the life of the PRP. Actual activities or uses relating to GE / GMO have not been identified.

29. It is however possible that GE / GMO activities could, at some future time, be proposed in the Northland CMA, and that potential adverse effects may arise. Accordingly, I maintain my view that it is Policy 3 of the NZCPS (Precautionary approach) that is most relevant. I conclude below that in my view it is appropriate for a precautionary approach to be taken. In my opinion that approach is supported by the NZCPS rather than being required to give effect to the NZCPS.

30. It is my view that Policy 3 of the NZCPS is given effect to by Policy 6.1.2 of the RPS, quoted and commented on in my primary report[26], and again in the conclusion to this report.

[25] Mr. Warren's evidence, from Paragraph 80
[26] Primary Report, from Paragraph 88

31. In Section 10 of his evidence Mr. Badham discusses the provisions now proposed by WDC / FNDC. He suggests some changes from the version originally sought by WDC / FNDC following comments made in my primary report, however he does not agree fully with the wording I have proposed in the primary report Appendix J. Mr. Warren supports the amended version in his evidence on behalf of the Soil and Health Association.

32. In respect of objective and policy and rules, including consent categorisation, there are no major differences between Appendix J and what is currently proposed by the submitters. However I maintain my preference for the wording in Appendix J. It better reflects the structure and approach of the PRP, for the reasons outlined in my primary report. I note further that I do not support reference being made to s.15 in the provisions, as is proposed by Mr. Badham. I do not see it as being necessary to refer to s.15 and it is potentially problematic (requiring attention to be given to whether or not a GMO is a contaminant).

33. I do agree that the provisions should require prior approval from the EPA. It is possible that, once the EPA has considered the use of a GE organism in the environment and put in place conditions and controls that there are no further matters of concern that will result in a different finding under an RMA process. While there may also still be local circumstances and issues that need to be considered, a prior EPA approval should reduce debate about issues that have already been assessed and determined by the EPA.

34. This is not to say that I am fully in support of the Appendix J provisions, a matter I discuss in my conclusion below.

35. The evidence from Gavin Forrest on behalf of Federated Farmers, while not expert planning evidence, is nevertheless helpful in my view. It contains an outline of the questions to be asked regarding whether there should be GE / GMO provisions at this time and questions some of the reasoning given to date for RMA provisions, at least of the type proposed, being necessary given other options available. In that

respect, I note that the Federated Farmers evidence does not appear to dismiss the possibility that provisions may be introduced at a future time.

36. In his evidence Mr. Forrest Farmers gives reasons for Federated Farmers considering there is insufficient justification to proceed with provisions in the PRP *"at this stage"* [27]. Those reasons, with my comment are as follows:

(i) The proposed provisions are a significant departure from the Proposed Plan (that included no such provisions);

Comment: It is correct that the PRP as notified did not contain provisions, including rules, of the scope now sought by the primary submitters. This reason therefore warrants consideration. The Council normally would take the initiative in proposing provisions, however in this case indicated clearly in the PRP as notified that this would be the subject of later consideration, if a legal basis was established. However, I do not believe the absence of detailed provisions in the notified PRP is necessarily a reason that provisions should not be pursued through the submissions, hearings and decisions stages. As noted in my primary report, there is jurisdiction to do so. The Council has taken a careful approach to ensure that submitters and further submitters are aware of what provisions could be introduced, in particular through inviting submitters in Minute 1 to provide provisions, and s32 analyses of those provisions. This was done, by two major submitter parties.

(ii) There are no current or imminent risks or for that matter any risks on the horizon that need to be managed with respect to the introduction of GMO/GE in the CMA or the region as a whole – certainly none that require immediate decisions;

Comment: The evidence appears to confirm that there are no current or imminent risks that would require immediate decisions. However in my view it is clear from other evidence that there may well be risks "on the horizon". This is a key question for the Hearings Panel to consider.

[27] Gavin Forrest evidence, Paragraph 37

(iii) Given the long lead in time between an application being made to the EPA and a decision to permit the use of GE or the release of GMOs there will be ample time to prepare appropriate provisions in the Proposed Plan for Northland should they be required;

Comment: In my opinion there is merit in this reason. The evidence provided does not point to a particular activity or use of GE / GMOs that is currently more than a theoretical possibility in Northland's CMA. In that respect, while I acknowledge Professor Heinemann has identified some possibilities, I am not sure of the extent to which this may be considered "real" prospects, at least in the foreseeable future. For example, I understand there is no realistic prospect of salmon farming in Northland, given unfavourable water temperatures[28]. Having the knowledge of what that activity or use is, and what (in an RMA sense) the adverse effects may be, would allow for provisions to be devised in a more targeted manner.

(iv) Given the way evidence has been introduced to this process there has not been, and will not be, sufficient opportunity for the Northland community to provide input nor has there been any robust s32 Report with respect to the regulation of GMOs and GE in the Proposed Regional Plan for Northland which may otherwise justify the insertion of specific provisions at this stage;

Comment: See the comment I have given under reason (i) above. The general theme of primary submissions was clearly that provisions based on the AUP should be introduced into the PRP. Primary submitters continue to maintain that the long and comprehensive process that led to those provisions, also now introduced into the WDC and FNDC district plans, went a long way to satisfying s32 requirements. That was further modified in the response to Minute 1, and further in the evidence now received. In that respect it is an accepted response to s32 that the process is iterative and includes information provided right up to the stage of final consideration by the decision-maker. In my view, The Hearings Panel has sufficient information on which to decide whether further provisions should be included in the PRP at this stage. My concern, if the Hearings Panel decides that provisions are warranted, is whether this process has arrived at provisions that are sufficiently appropriate and robust – a matter I return to in my conclusion below.

[28] Pers comm: Ben Lee, Council's Policy Development Manager

(v) *The Council has other regulatory tools at its disposal, including within the RMA, to deal with the unintended consequences or unwanted "escape" of GMOs and GE from the CMA – for example provisions of the Biosecurity Act that the Council currently uses to control wild kiwifruit; and*

Comment: I note that mention is made in the Federated Farmer evidence of the possible use of Pest Management Plans and / or Regional Pathway Management Plans prepared under the Biosecurity Act to manage the adverse effects of GE / GMO. I have not seen mention of these possibilities in any other material and in the short time I have had to prepare this addendum report I have not been able to research those options. However I suspect that they may not be a replacement for provisions considered and introduced under the RMA – i.e. it could raise the same issues of inadequate process, opportunity for community input and adverse effects response mechanisms that are concerns in the EPA process.

(vi) *This statement of evidence not only highlights that, to date, the council has been presented with one-sided, out of date, evidence but also provides sufficient grounds to reject the fundamental premise of the submitters that "strong precautionary and prohibitive" GM specific provisions are warranted at this time. It may well be that once the EPA has considered the use of a GE organism in the environment and put in place conditions and controls (including the imposition of bonds) that there are no further matters of concern that need to be considered.*

Comment: My reading of the Federated Farmers evidence is that, rather than highlight other evidence is out of date, it simply presents another view, and adds to the information on which a decision can be considered and made. As an example, the Federated Farmers evidence relating to genetic editing is helpful to illustrate there may be an area in which there may be more confidence that adverse effects in some areas may occur. However even that example is questioned from a cultural point of view in Dr. Pittman's evidence. In my view, what the evidence as a whole does is to illustrate that GE / GMOs is a wide ranging and complex issue – it does not appear possible, at least currently, to isolate particular examples, existing, in current consideration or otherwise, and then conclude no potential issues arise.

I note that the Federated Farmers evidence questions the reasoning given, in the submitters' s32 and evidence, for there being deficiencies in the EPA GMO

application and decision-making process[29]. As most of these matters are more for legal submission I do not comment on them here. However, even if there is merit in the position put forward on behalf of Federated Farmers it is my view that there may still be a place for RMA management of GE / GMOs through the PRP and in the Northland CMA. In particular, while applications under the HSNO Act can be publicly notified the RMA allows a greater opportunity to take into account the local context, through the Schedule 1 process of introducing provisions, and then through the resource consent processes. The RMA processes also allow appeals to the Environment Court.

Conclusion - Having regard to s32 RMA, what is the most appropriate option?

37. In my primary report I discuss the options identified in the Badham and Warren s32s. These have essentially become focussed on the "status quo-do nothing" option and the "Control of GMOs in the CMA consistent with the Auckland Unitary Plan (AUP) Approach" option. What these options actually mean requires careful consideration and clarification when evaluating which the most appropriate option. My view is that the status quo option should not mean that the GE / GMO issue is never to be further pursued as part of the Northland Regional Plan. That option incorporates the possibility of a future plan change. In respect of the AUP option that has already been modified, now in the version put forward in submitters evidence and the version in Appendix J of my primary report. It could be modified further.

38. Policy 6.1.2 of the RPS is repeated below:

6.1.2 Policy - Precautionary approach

[29] Gavin Forrest evidence, Appendix A, Pages 7 – 10, and Anderson Lloyd legal opinion dated 12 October 2018

Adopt a precautionary approach towards the effects of climate change and introducing genetically modified organisms to the environment where they are scientifically uncertain, unknown, or little understood, but potentially significantly adverse.

39. Under the Explanation, criteria that may be taken into account include:

Consideration of the degree of significance or irreversibility:

- *the scale of the threat;*
- *the value of the threatened environment;*
- *whether the possible adverse effects are able to be managed or contained;*
- *the level of public concern; and*
- *whether there is a rational or scientific basis for the concern.*

Consideration of the degree of scientific uncertainty:

- *what would constitute sufficient evidence;*
- *the level of scientific uncertainty; and*
- *the potential to reduce scientific uncertainty*

40. Having read the evidence I am not confident in recommending that the Council adopt the status quo "do nothing" option on the basis that further provisions relating to GE / GMO are not required, because there is no risk. In my view it may be the case that it is shown later that a particular proposal for GE / GMOs will not result in adverse effects or that the EPA process will adequately manage potential adverse effects. However in my opinion the evidence is rational and sufficient in indicating a significant degree of scientific uncertainty, including uncertainties that may not be resolved for some time. Uncertainties include whether possible adverse effects are able to be managed or contained and that there are unknowns including a potential for irreversible adverse effects. The CMA is part of the public domain and as such will be regarded by many as being a threatened environment. Particular areas of the CMA will also be ecologically threatened or otherwise of special value, including to iwi.

41. A precautionary approach is therefore appropriate, in my view. There is significant community concern, as evidenced by the universal desire for further PRP provisions expressed in primary submissions. Adverse effects on cultural values are an important consideration. Taking this into account, as well as other aspects of social

wellbeing, I agree with the primary submitter evidence that there is a basis for RMA management through the PRP. This will, in the least, give the community an opportunity to participate in future initiatives, if there are any, to introduce GE / GMOs into the Northland CMA.

42. On other hand the scale of the likely threat over the life of the regional plan, appears to be low. That can be looked at in two ways, either that a precautionary approach does not need to be reflected in provisions introduced into the PRP now, or (taking Dr. Small's approach) provisions introduced now would have a low opportunity cost. Having regard to Section 66 (2)(d) of the RMA provisions introduced now would also achieve consistency with the adjoining region, Auckland, which has GE / GMO provisions managing its CMA.

43. In my primary report my tentative conclusion was that it may be appropriate to introduce provisions now. The view I expressed was that addressing the matter now would be the most efficient way of addressing the issue, subject to confidence being achieved about the evidential basis and the detail of the provisions.

44. As just noted, I am confident that the evidence indicates there is a potential concern, but addressing that concern further in the PRP is not an urgent matter. More importantly, I remain concerned that there is not a clear justification, nor has there been a sufficiently careful analysis of the provisions. These are provisions that would apply solely to Northland's CMA. With respect to the evidence provided on behalf of the submitters it is my view that there has been an over-reliance on the ICPW work, that was more targeted at land-based provisions. Other issues, such as the concerns I expressed about bonding provisions in my primary report have in my view not been confidently answered in the evidence. While the AUP has provisions that cover both the district plan and regional coastal plan (CMA) I have some doubt whether they would be the same if it was the CMA covered only. The current process is a cumbersome one to address these concerns and come up with a more robust set of provisions, although it remains a possibility to address this, for instance by expert conferencing / further information if that is a course the Hearings Panel wishes to pursue.

45. It may well have been (or be) the case that a "ground-up" s32 approach to Northland's CMA only would have arrived at different provisions. That suggests that a future plan change option may be preferable, but in order to address the concerns I have outlined it is my view that Council would need to commit to that option, as there is an issue that needs to be addressed, including to give effect to the RPS. Council has time to pursue an appropriately investigated and considered plan change.

46. Alternatively, the Hearings Panel may wish to proceed and consider introducing provisions now on the basis of material it has. That may be a justified option considering the significant social and cultural concerns that have been raised, and if a conservative approach is taken to the possibility that the GE / GMO threat may become real earlier than currently envisaged. I am not confident that the provisions would remain without the need for change at a later date, however the provisions could still be regarded as being sufficiently well based to work in the meantime, until greater knowledge is obtained about whether a better form of management may be appropriate.

47. A decision made to introduce provisions now in my opinion would be based to a large extent on the level of public concern. That is a matter specifically referred to in the RPS and therefore a relevant basis for consideration.

48. The arguments for and against these options are finely balanced. I do not feel confident, in particular, to make a recommendation based on what weight should be applied to public concern. I see this as being more a matter for the decision maker. I therefore do not make a recommendation at this stage.

Peter Reaburn
Consultant Planner