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Submitter 6523 / Further Submitter 2422

Proposed Auckland Unitary Plan

Topic 024 - Genetically Modified Organisms.

Statement of Submitter Evidence - Economic

A. INTRODUCTION AND SUMMARY.

1. My name is David Cooper. I have a Bachelor of Commerce in Economics and a Master of Arts in Politics.

2. I am a Senior Policy Advisor for Federated Farmers of New Zealand, where I have represented the needs and interests of our farming members for the past five and a half years.

3. Over that time I have gained substantial experience in the implementation of the Resource Management Act 1991 (RMA) and its effect on farmers, and in the interrelationship between national and regional planning documents. This experience has included preparing submissions and further submissions on district and regional planning matters, submitting to national policy documents, and assessing the robustness of economic analysis informing policies at these levels.

4. In this evidence I review and comment on the evidence provided by Dr John Small on behalf of Auckland Council in these proceedings. I also compare that evidence with similar evidence presented by Dr Small and Fraser Colegrave to the Hastings District Plan Hearings Committee hearing into the GMOs topic on 27 May 2015.

5. In summary, I do not consider that Dr Small's economic assessment is sufficient to lead to the conclusion that the costs of the proposed provisions in the Proposed Auckland Unitary Plan that regulate the use of GMOs are low. I believe this was

largely a foregone conclusion given Dr Small has not appropriately considered the marginal transaction costs resulting from the additional level of regulation to that provided by the EPA. This is relevant given regional and local bodies have the ability to provide input into Environmental Protection Agency (EPA) processes. Further, I consider the argument for an additional regulatory layer to that provided by the EPA relies to an extent on the assumption that GMOs will not spread readily between regions. Given Dr Small's assessment that there is a considerable risk of (first generation) GMOs spreading where release will occur outdoors, I would consider the relative effectiveness of regional versus national regulation requires a more robust assessment of the marginal costs and marginal benefits associated with that additional layer of regulation.

6. Further, Dr Small's accounting of the potential opportunity costs considers only the GMO developments that are currently available, failing to recognise some potential benefits. This is a notably narrow focus, and a comparison between Dr Small's approach and that of Fraser Colegrave in respect to a similar matter in Hastings underlines this point. To underline this view, I compare Fraser Colgrave's evidence for the Hastings District Plan Hearings Committee hearing into the GMOs topic on 27 May 2015. Colgrave's evidence provides a more in-depth assessment of the nature of premia for non-GM production and subsequently a more detailed economic assessment of the opportunity costs associated with this proposal. In addition Fraser Colgrave outlines a number of additional benefits from GM technology, particularly in terms of both the productivity benefits (less land, more effective production and reduced costs) and further benefits to consumers (nutritionally enhanced options) which are missing from Dr Small's assessment.

B. ASSESSMENT OF THE EVIDENCE PROVIDED BY DR JOHN SMALL, 13 AUGUST 2015

7. Dr Small states in his evidence that his approach is to analyse "the economic aspects of proposed measures that prohibit the outdoor release of genetically modified organisms (GMOs) and assign discretionary status to GMO field trials along with provisions for strict liability conditions". [1]

[1] Statement of Primary Evidence of John Small on behalf of Auckland Council, at 1.

8. Dr Small states that the driver for the current discussion includes a Working Group finding that "community concerns over the outdoor release of GMOs have a basis in fact and the risks are not adequately managed through legal provisions and agencies at the national level". [2]

9. Dr Small's evidence inherently acknowledges that regulation of GMOs may occur at either the national or regional level.

10. It stands to reason that if regulation is sufficient at the national level, then there is little additional benefit to regulation at the regional or local level. Therefore in my view, the primary questions from an economic perspective are 'what are the marginal or additional benefits of regulation of GMOs at the regional level?' and 'do these appropriately or sufficiently outweigh the marginal costs associated with this further, or regional, level of regulation?'.

11. In actuality, regional and local bodies have the ability to provide input into Environmental Protection Agency processes. Therefore, if the key concern driving the need for additional, regional or pan regional level of regulation, is that local concerns are not appropriately reflected in national regulation, a more rigorous assessment would focus on the marginal costs and benefits of providing better processes for input at that national level, or providing the EPA with tools to reflect different regional requirements or preferences, against those expected from the additional level of regulation.

12. This context has important implications to the analysis that follows. As Dr Small outlines in the Summary of Evidence, "there is considerable scientific uncertainty over the costs and benefits arising from outdoor cultivation of GMOs". This is without dispute.

13. However, Dr Small subsequently focusses solely on the costs associated with outdoor cultivation of GMOs, stating that the "ability of GMOs to reproduce means that the scale of unintended cost is unlimited". [3] This assessment provides important context to the remainder of the evidence.

14. The consequence is that the cost assessment which follows does not include a genuine assessment of costs; it is largely assumed that these are 'unlimited'. This sets a tremendous bar for any assessment of benefit to exceed. Furthermore, as

[2] Ibid., at 8.
[3] Ibid., at 2a.

discussed above, the material question should also consider the marginal or additional costs associated with having regionally specific regulation of GMOs in addition to national regulation.

15. As Dr Small outlines, the benefits of GMOs are similarly unknown. [4] While it stands to reason that the benefits of GMOs may also be 'unlimited' as has been expressed in relation to the costs, in terms of the matter currently at hand the material economic question is what marginal benefits will result from regional or pan-regional regulation underneath national regulation of GMOs.

16. In any respect, Dr Small's separate treatment of unknown costs and benefits is noteworthy, providing important context to the analysis which follows. Dr Small's subsequent discussion is around the broader estimated benefits arising from consumer preferences.[5] There is no attempt made to quantify or distinguish these benefits, however as discussed later in this evidence, this can be done and has a material impact on the perceived benefits.

17. I agree with Dr Small's assertion that the "main costs of concern are opportunity costs: foregoing net benefits that could be realised if not for the proposed measures". [6] However, additionally there will also be marginal costs associated with developing, administering, reviewing and implementing regional or pan-regional regulation within a national regulatory regime.

18. These costs will include the costs to the regulator, but also costs to the private sector, notably including the need for the private sector to develop and maintain an understanding of the impacts of and variances between differing regional regulations.

19. This is a material consideration in respect to Dr Small's assertion that the theory of 'investment under uncertainty' applies.[7] I agree that it does, and is a relevant consideration for this discussion. However, to my mind the material question is whether this principle drives a significantly more robust assessment of the costs and benefits of particular GMOs at the national level rather than the development of a secondary layer of regulation at the regional or pan-regional level.

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[4] Ibid., at 2a.
[5] Ibid., at 2 and 3.
[6] Ibid., at 4.
[7] Ibid., at 5.

20. The question is not whether the economic theory of 'investment under uncertainty' applies; the question is whether this justifies additional local or regional regulation. Dr Small does not address this matter directly or attempt to identify these costs. Instead it is assumed that more layers of regulation result in better regulation.

21. I agree with the underlying points made by Dr Small in respect to the economic importance of outdoor primary production and associated primary manufacturing to the Northern Peninsula of New Zealand. Further, I agree with Dr Small's underlying point, that the reliance of each region on economic production sensitive to GMOs may differ between and within regions, and that "GMO-related advances in their production could generate opportunity costs under the Proposal". [8]

22. However, as discussed above, this does not address the material question as to whether either the costs or the benefits of regulating against particular GMOs through a secondary layer of regulation at the regional or pan-regional level would outweigh better regional input into regulation at the national level.

23. An assessment of these additional costs would ideally include an assessment of the costs of developing, implementing and reviewing these regional regulations and the costs associated with the private sector's need to develop and maintain an understanding of the impacts of and variances between regional regulation.

24. Dr Small's assessment of the current state of bio-sciences in Auckland and Northland seeks to address the question of whether or not "the Proposal will enable the continuation and expansion of existing bio-science business activity in the region". [9] This is a cost side focus which rightly asserts that "existing bio-science business activity is essentially independent of any outdoor release of GMOs"; however it does not appropriately consider the potential for future opportunity costs through benefits foregone. It is entirely possible that bioscience may become more valuable to the regions if GMOs are available.

25. Dr Small addresses the legal context and the incentives this context may provide.[10] The legal context itself is outside my area of expertise; however I agree with Dr Small in terms of the additional liability to those operating field trials, and the

[8] Ibid., at 16 to 20. Hereinafter I use the words "the Proposal" in the same sense as I understand Dr Small to do, to describe the proposed provisions in the Proposed Auckland Unitary Plan that regulate the use of GMOs.
[9] Ibid., at 22.
[10] Ibid., at 23 to 34.

economic effect of this extra liability, as outlined. [11] However, were additional regulation in and of itself considered to provide net economic benefit then there would be significantly more regulation; and a disincentive to act may be considered both a cost and a benefit. Therefore these benefits must be considered against the additional costs arising from regulation, both to the regulator and to the private sector.

26. Dr Small addresses the question of whether a scheme for local management along the lines of that provided for by the Proposal may be considered to be 'doubling up'. In my opinion, from an economic perspective and for the reasons already outlined in this evidence, I consider the additional costs to both the regulators and to the private sector are the key considerations here.

27. In respect to the benefits likely to accrue through additional regulation, I note the opinion of Mark Christensen and Jonathan Nicolle of Anderson Lloyd Lawyers, that:

    a. *"Only with the approval of the EPA can a new organism be imported, developed, field tested or released. In essence, New Zealand's default status is 'GMO free' unless otherwise modified by a HSNO approval.*
    b. *Under that default position there is no need for provisions in plans seeking to control or manage the use of GMOs. Those controls are already in place under the HSNO and managed by the EPA. Any rules in plans would merely double up the protections already in place.*
    c. *Local authorities do not need rules in a plan to note their community's desire (or otherwise) to remain GMO free for certain applications. As part of its decision making process the EPA would be required to seek submissions from local authorities under section 54(4) of the HSNO. In their submissions local authorities would have the opportunity to set out their community's opposition of GMOs".* [12]

28. Subsequently I would consider, as outlined earlier in this evidence, that the material question from an economic perspective is whether the proposed additional level of regulation is an efficient manner of expressing local community concerns in addition

[11] Ibid., at 29.
[12] "Regulation of Genetically Modified Organisms Under the Resource Management Act 1991", Anderson Lloyd Lawyers, prepared by Mark Christensen and Jonathan Nicolle. Available at <http://www.andersonlloyd.co.nz/wp-content/uploads/2014/05/REGULATION-OF-GENETICALLY-MODIFIED-ORGANISMS-UNDER-THE-RESOURCE-MANAGEMENT-ACT-19912.pdf>

to current national regulation, which does, as outlined, provide scope for the consideration of local concerns.

29. As Dr Small underlines, an additional, more local regulatory process would potentially provide for a more considered assessment of local concerns. [13] However, Dr Small's evidence does not investigate or attempt to quantify this aspect. I would also consider the additional costs of developing, implementing and reviewing this additional level of regulation and the subsequent costs to the private sector would be material to any economic assessment.

30. In a discussion around GMO technology, Dr Small makes a very relevant point in respect to the nature of the technology. Dr Small argues this technology can be assumed to be 'general purpose technology' (GPT) and that the development of technology of this nature can be considered to follow 'generations'. [14]

31. Dr Small's evidence cites the work of Stewart and McLean (2005), noting that this work characterises the "first generation of GMO plants as having agronomic qualities (i.e. qualities that affect how they are grown), the second generation as having product quality characteristics, and the third generation as concerning industrial products and pharmaceutical drugs". [15]

32. The distinction between these generations is important because, as outlined by Dr Small, the first generation of this technology is largely released outdoors and is therefore less controlled than 2nd and 3rd generation, which occurs indoors. However, as outlined consistently through this evidence, I believe the material question from an economic perspective is whether these considerations are more efficiently dealt with (or addressed) at the national or regional level.

33. In respect to GMO technologies, which are outdoors and at a higher risk of spreading with clear potential for adverse effects, I believe it would be more economically efficient to consider, address and regulate for these concerns at the national level, with no need for an additional regional level of regulation. Indeed if the concern is the risk of propagation then regional regulation would be a distant second to effective national regulation.

[13] Statement of Primary Evidence of John Small on behalf of Auckland Council, at 34 c.
[14] Ibid., at 36 and 37.
[15] Ibid., at 37.

34. Dr Small discusses the potential alternatives to GMOs, noting that "marker assisted selection" ('MAS') is a non-GM technique that also has the ability to provide similar genetic improvement. [16] The consideration of MAS as an alternative, lower risk option to GMOs is a welcome discussion, and a feasible alternative to GMOs would certainly devalue the opportunity costs of regulating GMOs. Although again the existence of a feasible alternative to GMOs does not in itself provide any justification for a regional level of regulation in addition to national regulation of GMOs, as sought after through the Proposal.

35. Dr Small's discussion around the time to market is a relevant consideration in respect to the relative benefits of GMOs. [17] Accepting the perspective that GMOs contain a relatively higher level of (real and or perceived) risk, the potential development costs are higher. This then reduces, to a largely unquantifiable extent, the opportunity costs of regulating GMOs.

36. This is also a relevant consideration in respect to the timing of the Proposal and the mandatory review period, in that on the face of Dr Small's evidence many GMOs may require a longer time frame before they are ready for field testing. Again however, there is no consideration or assessment of whether these reasonable considerations justify, or do not justify, an additional level of regional regulation in addition to that afforded by the EPA. Furthermore, the additional costs associated with additional, potentially variable regulation between regions, is also relevant.

37. In outlining the economic approach taken to weighing up the costs and benefits of the proposed measures, Dr Small rightly states that it is the relative costs and benefits that matter between the feasible approaches. [18] I do not disagree with this approach overall.

38. However, I do disagree with Dr Small's assertion that only the relative costs and benefits to the residents of the Northland/Auckland region should be considered.[19] Regional economies are inter-reliant upon each other; and although local authorities are charged with acting in the best interests of their local populations, an economic cost benefit assessment of the Proposal should consider the total costs and benefits of that proposal. This approach limits the potential benefits of a permitted approach,

[16] Ibid., at 40 to 44.
[17] Ibid., at 45 to 49.
[18] Ibid., at 51.
[19] Ibid., at 54.

where this results in greater productivity or employment beyond Northland/Auckland.

39. There is a distinction to be made between a local authority developing and implementing regulation on behalf of and informed by its residents, and completely ignoring the implications of those decisions. Further, as the EPA has some provision for local authorities to inform national regulation the material question is whether the additional net benefits arising from a local regulatory approach outweigh the status quo.

40. I also disagree with use of the word 'perceived' in respect to net costs and benefits. [20] This is an economic assessment, and as perception is difficult, if not impossible, to quantify in any meaningful sense, then attempting to provide weighting to perception is a fraught exercise. This is particularly the case where a regulator has some duty to inform the public on the potential for risk, in respect to what is a contentious and emotional area.

41. I agree with Dr Small's discussion that an analysis of costs and benefits that occur over time needs to recognise that future values are worth less than current values.[21] However, I note this is also true in respect to a benefit which is realised earlier due to a more efficient regulatory regime.

42. I also agree in respect to Dr Small's discussion of option values, [22] although I note that, irrespective of how flexible the planning cycle is, if the additional regulation proposed unnecessarily imposes additional net costs then this is ultimately not an economic benefit. The material question is what marginal benefit the proposal adds to the existing regulation; in addition to how quickly the proposal could be amended should it be proven there are some unnecessary costs as a result of the proposal.

43. Flexibility in the planning approach taken is a very relevant consideration to discuss at this point. The current proposal is for a prohibited activity status. The discussion around flexibility in the planning cycle would ideally be widened to include a discussion around the actual nature and approach of the rule, within the regional planning approach. For example, a more robust assessment of the Proposal could include some discussion around the feasibility of the class (status) of a related activity and tailoring of the extent to which a resource consent may be required for

[20] Ibid., at 55.
[21] Ibid., at 56 to 61.
[22] Ibid., at 62 to 64.

that activity to be carried out. This could include an analysis of the costs or benefits related to the activity status attributed to GMOs in a regional plan. The classes of activity are provided for in sections 77A and 87A Resource Management, as Act 1991(RMA) described below.

a. Permitted;
b. Controlled;
c. Restricted Discretionary
d. Discretionary;
e. Non-complying; or
f. Prohibited.

44. The particular status under which GMOs would be regulated would have a material impact on the cost of that regulation. Where a GMO is prohibited, the opportunity costs will be significant should the potential benefits of development of a GMO significantly outweigh the expected costs. The appropriateness of the status afforded to a GMO under through local resource management regulation should also arguably consider the protection already afforded by the EPA assessment of GMOs. In short, the EPA provides an important regulatory context which could justify assessing whether a more permissive approach may be warranted, given the potential benefits and potential opportunity costs.

45. Dr Small discusses the irreversibility of a decision to release GMOs "because of the potential for interactions between, say, those plants and other plants and insects in the environment, and because of the inability to monitor and document and track all of those interactions over time".[23] While Dr Small's comments are made in the context of the regulatory options available to the Northland/Auckland region, I would consider the argument around the irreversibility of GM technology to be one which underlines the need to ensure the national processes for considering the potential release of GMOs are robust and fully informed.

46. Dr Small states that "there is no reliable way of preventing gene transfer between GM plants and other like plants". [24] If this is the case, the role of regional regulation in reducing this risk should be carefully considered. Given GM technology, the potential spread of transgenes and the unlikelihood of transgenes being retracted once does not respect regional borders I would expect that the more efficient and

[23] Ibid., at 66.
[24] Ibid.

effective level for regulation of potential GM risks to be at the national level, and that if national regulation is working sufficiently, then the ability to defer release through local measures (as proposed) would largely be to reflect local preferences (as distinct from the risks of GMO spread) or to provide incentives or disincentives to this release at the local level.

47. This perspective also relates to Dr Small's discussion on Real Option Value.[25] Again I do not disagree with Dr Small's statement of the position; I disagree that it is the timing of an irreversible decision that is of primary interest.[26] Given the particular risk profile of GMOs it appears to me that the presence of a real option, and the way this provides decision-makers with the flexibility to wait and review new information as it arrives, is a distant secondary concern to ensuring this approach is used at the national level given the potential irreversibility of the decision.

48. I would then consider the question to be one of what additional or marginal value a regional level of regulation would add to this approach at the national level, and indeed whether the avenues provided to the Auckland Northland regions to input into EPA processes is a more efficient or effective manner of addressing these concerns.

49. Dr Small follows this by discussing the precautionary principle and how this relates as a driver for an additional, regional level of regulation in addition to the national regulation provided by the EPA. Again, a material question is whether this same principle is or can be applied at the national level, and if so, what subsequent value is derived from an additional level of regulation.[27]

50. However, I also consider Dr Small's evidence strays from a proposed economic analysis of costs and benefits into something broader at this point. The argument around the precautionary principle is a valid one, but no attempt is made to quantify the costs or the efficiency of the subsequent argument for regulation at the regional level, nor is there any recognition of the requirement to apply the precautionary approach at national level, under HSNO .

51. Taken at face value, this argument could be used to justify many additional layers of regulation; one to protect each set or subset of potentially varying set of values or concerns. In essence the application of the precautionary principle sets an

[25] Ibid., at 68 to 74.
[26] Ibid., at 70.
[27] Ibid., at 75 to 79.

exceedingly high bar for the argument against additional regional regulation to surpass. To my view the questions remain whether the additional marginal benefits of regulating at both the regional level and national levels exceed the marginal costs, and/or whether this is the most efficient or effective way of regulating GMOs.

52. The subsequent discussion of options flows from the context provided in the preceding sections of the evidence, and as discussed above is largely decided by this point.[28] In essence the context provided by Dr Small is that:

    a. flexibility in planning (general purpose technology) is desired to match the need to identify and adapt planning processes in response to development,
    b. the scale of GMO release is significant and the impacts are long term,
    c. the uncertainty principle relates, as this is 'first generation' GMO there is limited ability to control release of this technology given the nature of GMOs and given that they are released outside,
    d. there are arguably viable alternatives (marker assisted selection),
    e. therefore the actual cost is the difference between the two options offered (the current Proposal or fewer restraints).

53. As addressed throughout this evidence, I would consider the appropriate question to be whether the marginal costs and marginal benefits associated with an additional level of regional regulation, as proposed, was necessary to achieve more effective or efficient regulation of GMOs, once the transaction costs and opportunity costs had been appropriately considered. This would require an additional consideration to the two scenarios proposed by Dr Small; namely a permitted activity approach with a focus on better informing the existing EPA processes around the regional concerns of Northland/Auckland in respect to GMOs.

54. In an assessment of the costs and benefits, Dr Small stipulates that he considers the opportunity costs of not using GMOs are restricted to "the extra profits that would accrue to landholders and/or GMO developers without the constraint on GMO-related activities". [29] This is inconsistent with Dr Small's comments in footnote 1 of the evidence, where Dr Small highlights that a direct economic output figure "materially understates the importance of outdoor primary production to the region because it omits all of the economic activity generated by income earned by suppliers to this

[28] Ibid., at 80 to 85.
[29] Ibid., at 87 a.

sector". I would expect that the downstream economic activity would also be a relevant consideration to Dr Small's analysis at this point.

55. Dr Small's discussion around transaction costs is similarly constrained.[30] Dr Small outlines a view that the rational farmer "will only pursue a plan change if she expects to profit from doing so".[31] This narrows the comparison to focus on direct marginal benefit (marginal profit), and only when said farmer seeks a plan change to release GMOs.

56. This is lacking in a number of areas. This completely ignores the transaction costs associated with planning development and review, to both the council and the private applicant. Critically, transaction costs should also include the monitoring, plan development, plan change, public consultation etc costs to councils. The approach also ignores the 'information costs' associated with the private sector having an understanding of the myriad different regulations at the regional level and how these interact with the national regulatory approach.

57. Further, farmers and other parties also oppose plan changes when they expect this will have a negative impact on their farming viability, either perceived or real; it is not simply the absence of a net expected profit from new production opportunities which drives additional planning costs, and planning approaches intended for one outcome can impact related outcomes. Finally, as above the analysis ignores the broader, downstream economic opportunities foregone.

58. I address my concerns in respect to Dr Small's treatment of opportunity costs [32] further in this evidence, when I compare Dr Small's approach with that of Fraser Colegrave in respect to a similar matter in Hastings. However, again the material question to my mind is the marginal benefits and costs of an additional level of regulation, given the factors discussed to this point.

59. Dr Small's summary concludes that ''the costs of the Proposal are low". [33] As discussed I believe this was largely a foregone conclusion given Dr Small has not appropriately considered the additional or marginal transaction costs resulting from the additional level of regulation to that provided by the EPA. Further, because Dr Small's accounting of the potential opportunity costs has considered only the GMO

[30] Ibid., at 88 to 91.
[31] Ibid., at 89.
[32] Ibid., at 92 to 100.
[33] Ibid., at 105.

development that is currently available, the assessment understates the potential benefits. This is a notably narrow focus.

60. Dr Small then turns to discussing benefits. [34] There is an important distinction between some of the benefits discussed here that I will discuss further in this evidence when I compare Dr Small's approach with that of Fraser Colegrave in respect to a similar matter in Hastings. However, overall I consider the question is again one of whether the additional regulatory protection afforded by the proposal outweighs the costs of this additional regulation.

61. As a general comment I note that the benefits outlined by Dr Small are predicated on the idea that a GMO will not spread between regions if adopted in another region (ie that regional borders and regional regulation offer some barrier to the spread of GMOs). This may be the case in respect to GMOs used where these can not spread, however Dr Small argues that the precautionary principle should apply because these are first generation GMOs where release will occur outdoors. Given this, as I argue earlier, the material question is whether the likely benefits of an additional, regional level of regulation in addition to the national regulatory approach outweigh better informing that national regulation.

62. Dr Small turns to discussing the 'risk avoidance benefits' of the Proposal. [35] Again I address this 'market focused' risk further in this evidence when I compare Dr Small's approach with that of Fraser Colegrave in respect to a similar matter in Hastings.

63. However, it is worth highlighting the nature of Dr Small's discussion within this section of this evidence, where the particular risk from outdoor cultivated GMOs are highlighted. Again I would consider the potential ease of GMO spreading and contamination (irrespective of territorial authority boundaries) to be an argument to strengthen GMO regulation at the national level, rather than developing individual and potentially varying regional approaches.

64. Dr Small partially addresses this concern where he states that the "Proposal may not totally eliminate the risk of such events originating from outside the region, but it removes the far greater risks that would arise from intentionally grown GM crops contaminating non-GM production". [36] However, I believe Dr Small is inconsistent in the application of this view throughout this evidence, and fails to sufficient justify the

[34] Ibid., at 106 to 120.
[35] Ibid., at 121 to 130.
[36] Ibid., at 125.

relative risks between intentionally grown crops potentially contaminating non-GM production versus regional incursions within this evidence. Further, as throughout I would consider the material question relates to whether these matters are more effectively addressed through national or regional regulation.

C. COMPARISION OF THE ECONOMIC APPROACHES USED BY FRASER COLGRAVE AND DR JOHN SMALL IN RESPECT TO THE HASTINGS DISTRICT PLAN

65. In this section I compare the economic analysis undertaken by Fraser Colegrave and compare this to that of Dr John Small in respect to the Hastings District Plan discussion around regulation of GMOs. I consider this comparison provides a pertinent context to Dr Small's evidence in relation to the Proposal.

66. Fraser Colgrave's analysis was a preliminary analysis aimed at assisting Hastings District Council staff in preparing a section 42 report under the RMA to inform proposed provisions for managing GMOs in the Hastings District. In particular, I consider that Colgrave's evidence delves deeper into the actual distinctions around the premium provided for GMO free production in the district, and includes a deeper analysis of the economic costs and benefits of GMO regulation, than is provided by Dr Small. I consider this is largely because the context for Colgrave's economic analysis is rather more objective than that of Dr Small, who, as I discuss in section B, significantly reduces the scope of the analysis and excludes what I would consider reasonable factors to consider.

67. Colgrave does not address the questions around whether or not an additional level of (regional) regulation is the most efficient or effective manner of addressing the concerns of those within the Hastings District. However, he does better focus on the material economic questions around the economic impact of banning/allowing GMOs within the Hastings District. This begins in the purpose where Colgrave outlines the four key research questions he is seeking to address through the analysis:

    f. What are the key benefits of banning GE crop production in the district?
    g. Will the proposed plan change guarantee these over the longer term?
    h. What will the benefits of enabling some GE-based crop production in the district?
    i. Will the proposed plan change effectively preclude these?

68. In particular, Colgrave appropriately acknowledges the benefits of the 'clean green' image through a rather more specific assessment than Small's high level, approach.[37] The material benefit of this more focussed and considered analysis is a more in-depth assessment of the nature of premia for non-GM production and subsequently a more detailed economic assessment of the opportunity costs associated with this principle.

69. Broadly, Colgrave achieves this more detailed analysis by highlighting there is currently no evidence for premiums for GM fruit and veges, other than soya beans and maize. [38] While consumer demand and values change over time and this lack of premium may change, this approach is consistent with Dr Small's assessment of the current market demand for these products.

70. Colgrave underlines that organic food retains a significant premium. However, as he goes on to state, there is an important distinction to be made between organic product, which "typically requires formal 'identity preservation' and hence such premia can seldom be earned simply by growing a crop in a region that is GM-free".[39]

71. Colgrave's analysis then focuses on Hawke's Bay regional specific data, where there is some ability to distinguish whether there is a premium for specific products. His conclusion is the 'marginal value add' from GMO is $6.5 million (0.04% of the value of the Hawke's Bay regions exports for that period).[40] However, as Colgrave notes this is likely to understate the benefits. [41] Indeed, there would need to be further assessment of the assumption that half of the actual premium earned would be to cover additional costs.

72. In addition, as discussed in respect to Dr Small's evidence earlier there is highly likely to be some foregone downstream economic benefit from processing or employment, and/or benefit derived outside of the Hawke's Bay region, which is missing from this assessment.

73. Colgrave also casts some doubt over the 'once it is gone, it is gone' approach adopted by Dr Small in his assertion that the 'precautionary approach' should apply

[37] Preliminary Economic Analysis of GMOs, Fraser Colgrave, Friday 22 May 2015, paras 1 to 19
[38] Ibid., at 3.
[39] Ibid., at 4.
[40] Ibid., at 7.
[41] Ibid., at 8.

to GMO release. Colgrave cites a Wall Street Journal article outlining some maize farmers in the United States who were growing GM corn, who subsequently switched to GM Free corn, and were still able to command a GM Free premium casting 'some doubt' over the economic impacts of banning all GM products in a region because it will impact this premium. [42]

74. Colgrave also notes "parts of Australia grow non-GM canola" but these areas are able to claim a premium for GM free canola grown in these parts too. [43] I am not suitably qualified or informed to comment on whether these instances are a reflection of what may be a similar situation for New Zealand grown production. However, it does highlight some additional work may be needed to justify the 'precautionary approach' adopted by Dr Small in respect to the evidence provided in this matter.

75. Colgrave also highlights that the market premiums associated with production often reflect higher costs, and so the additional value from sales of GM free produce should not be considered solely as profit in an economic assessment.[44] From a regional economic or regulatory perspective, it would be relevant to assess what these additional costs are. For instance, if the additional costs are associated with greater regional employment or the engagement of other services in the region, this may not be a material concern for regional regulators.

76. Colgrave also highlights some concerns around the assumption that organic producers can earn 'super profits' over the long run, although again the relevance of this to GMO markets would require further assessment. [45] On the other hand, as noted the value from non-GM marketing may increase; although whether or not the 'entire district needs to remain GE free' to achieve this is a further question.[46]

77. In terms of the impacts of the plan change proposed for Hastings specifically, Colgrave does address the apparent contradiction I have highlighted in respect to Dr Small's evidence earlier; that there is a significant risk to the spread of (particularly outdoor) GMO technology and this in turn brings into question the effectiveness or relevance of having separate regional or local regulatory regimes. Colgrave provides a view that the benefits of regulating GMOs are based on the rest of NZ

[42] Ibid., at 10.
[43] Ibid., at 11.
[44] Ibid., at 15.
[45] Ibid., at 16 and 17.
[46] Ibid., at 18 and 19.

taking a similar stance because of contamination risk.[47] It may be the case entirely that regional and sub regional responses are similar (or similar enough) in respect to their response to address this issue. However, even if this were the case it does raise the question of the feasibility of an additional level of regulation to that afforded by the EPA, and whether and to what extent the subsequent additional transaction and planning costs were outweighed by the benefits.

78. Colgrave further outlines the benefits of GM technology, particularly in terms of both the productivity benefits (less land, more effective production and reduced costs), but also around the further benefits to consumers (nutritionally enhanced options).[48] I have no expertise in this matter to assess the validity of these benefits, other than to note these are reasonable considerations to consider in terms of any assessment of the benefits or costs associated with restrictions on GM production.

79. In essence, I include reference to Colgrave's analysis to highlight what I consider are the two fundamental questions not appropriately addressed through Dr Small's analysis of the current Proposal. Particularly, whether or not the proposed plan change can guarantee the benefits of banning. This is particularly relevant as the discussion to hand is around the effectiveness of an additional regional and pan-regional level of regulation within the national regulatory approach. In addition, I consider Colgrave has better investigated the particular nature of the market for GM free production. This has provided a clearer, albeit incomplete attempt at defining this benefit for the Hawke's Bay.

80. I turn now to Dr Small's analysis for the Hastings District Plan. [49] The approach used by Dr Small is similar to that used in respect to the current Proposal, and so my comments on Dr Small's approach are also similar to those I have outlined in section B of this evidence.

81. In particular, Dr Small does not focus on addressing the fundamental question around whether the marginal benefits of an additional level of regulation at the regional level exceeds the likely costs, and unlike Colgrave, Dr Small does not delve into the particular nature of GM produce demand nor assess the conditions under which the various markets may consider production to be "GM Free".

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[47] Ibid., at 23.
[48] Ibid., at 27 to 33.
[49] Economic Benefits and Costs of GM Moratorium in Hawke's Bay, 26 May 2015, a report prepared for Pure Hawke's Bay, by Dr John Small.

82. In respect to the costs and benefits, I note that Dr Small's assessment that the main effects of GM production can be broadly differentiated into two sources is contradictory to the approach put forward by Colgrave. Dr Small asserts that these are, firstly, "Market preferences for non-GM products", a demand side concern, with "Potential for higher productivity from GM technology", a supply side concern. In contrast, Colgrave highlights that there is potential for GM production to provide consumers with nutritionally enhanced options; this is an additional demand side factor ignored by Dr Small, impacting the latter's discussion around the nature of demand and supply for GM production which follows subsequently. Dr Small puts forward no empirical evidence to justify the nature of the demand and supply curves outlined.

83. Dr Small discusses the nature of market preferences on page 5 of this paper. The second to last paragraph on this page outlines an argument put forward by NZBIO that consumers prefer GM free product, but that there is some price sensitivity; in essence that consumers will pay more, but only to a point.[50] The following, last paragraph on this page attempts to rebut this by offering US Department of Agriculture work outlining that consumer perceptions on GMOs are negative. Further discussion on page 6 similarly outlines the negative perception of GMOs.

84. While it is entirely relevant to outline the market perceptions of GMOs it is notable that discussion around the nature of this perception does not directly rebut the former argument, ie that while there is a preference for GM free product price remains a factor that consumers will consider. This remains an area where additional work may be required, and it is a material point in respect to Dr Small's assessment of the nature of demand for GM production throughout the rest of this analysis.

85. At page 7, under the heading production based benefits, Dr Small does not appear to provide any discussion of any actual or potential production based benefits. Instead there is an outline of the costs imposed on producers where there has been potential GM contamination or where GM free certification has been sought and not been successful. This is not a robust assessment of potential productivity benefits. The section ends by asserting that a specific Hawke's Bay regulatory response would help to address this in some way, without differentiating between whether this is more effectively administered locally or nationally.

[50] Ibid., at page 5.

86. As with my assessment of Dr Small's work in respect to the current Proposal, I consider that the scenarios outlined on page 15 of this analysis flow from the rather restricted context provided, and appear largely designed to arrive at a pre-determined destination, without a robust assessment of the impacts. I believe the work of Colgrave highlights some gaps in Dr Small's proposal, including:
    a. It is assumed that there are no consumer related benefits to the consumer; in contrast Colgrave identifies the potential for the consumer to benefit from nutritional enhancement,
    b. Dr Small's assessment does not delve into the nature of demand for GM free production, or attempt to define whether the demand for GM free relies on an entire region remaining GM free,
    c. Dr Small identifies some price sensitivity in relation to the demand for GM production, but does not appropriately reflect or address this in the assessment which follows,
    d. There is no assessment of the relative benefit of regulating the concerns outlined by Dr Small at the regional level, compared to the existing national approach.

87. The assessment that follows and the conclusion to this analysis are subsequently guided by the weighting applied to these relative costs and benefits. Dr Small subsequently concludes that the HB proposal is beneficial, however I would consider this would require a more robust assessment than Dr Small has put forward in this instance.

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