

## Regulatory Impact Statement

### **Aquaculture Legislation Reform Paper: Fisheries (Aquaculture Compensation) Regulations**

#### **Agency Disclosure Statement**

1. This Regulatory Impact Statement (RIS) has been prepared by the Ministry for Primary Industries (MPI). It summarises analysis of options to comply with s186ZR(1)(a) and s186ZR(1)(b) of the Fisheries Act 1996, which require:
  - a methodology for determining whether aquaculture or commercial fishing delivers materially greater economic value to New Zealand (s186ZR(1)(a)); and
  - a methodology for calculating the loss in value of affected quota due to the aquaculture activities authorised by the coastal permit (s 186ZR(1)(b)).
2. MPI has undertaken consultation, sought expert advice, and analysed a range of options for the methodologies. All feedback from the Commercial Fishing Industry and Aquaculture Industry has been considered in preparing the RIS.
3. As a result of the feedback, MPI has moved away from recommending a fully prescriptive or “fixed” approach to determine economic value and compensation as initially suggested in the consultation documents. The analysis of the benefits and risks of the options indicates that a more flexible approach is appropriate for both methodologies. This will enable the arbitrator to account for uncertainties, caveats and limitations in the data and analysis presented by the parties.
4. The preferred approach best meets the objectives of the aquaculture reforms and enables the arbitrator to minimise the time and costs of arbitration.
5. The preferred approach will also increase the potential to reach a satisfactory outcome and thereby reduce the risk of the arbitrator’s decision being litigated.
6. A more flexible approach is consistent with the Arbitration Act 1996, which allows the arbitrator to determine the arbitration process and allocate costs.
7. I am confident that the RIS aligns with the commitments in the Government Statement of Regulation.

Iain Cossar  
Director of Sector Performance Policy  
**Ministry for Primary Industries**

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## Executive summary

1. This RIS assesses options for methodologies to satisfy the requirements of s186ZR(1)(a) and s186ZR(1)(b) of the Fisheries Act 1996, which require:
  - a methodology for determining whether aquaculture or commercial fishing is of materially greater economic value to New Zealand (s186ZR(1)(a))
  - a methodology for calculating the loss in value of affected quota due to the aquaculture activities authorised by the coastal permit (s186ZR(1)(b)).
2. Officials are satisfied that using a proxy will allow for a simple cost effective approach to determining the value of fisheries and aquaculture for comparison, and that the best proxy would be export revenue generated from use of the affected water space. If the arbitrator is not satisfied with the extent and reliability of the data, they will be able to call for further evidence.
3. Officials agree with submitters that a threshold should be set in the regulations to define 'materially greater economic value to New Zealand'. Officials consider that if the value of aquaculture is determined to be five times the value of fishing it would clearly be 'of materially greater economic benefit to New Zealand' taking into account uncertainties in terms of data and projections of future value.
4. Officials recommend a semi-prescriptive approach to determining compensation for the loss in value of affected quota under s186ZR(1)(b). This approach would require the arbitrator to consider inflation adjusted published quota trade prices and/or ACE prices (with the appropriate discount factor applied) to determine quota value. The approach would also allow further evidence from the parties if the arbitrator was not satisfied with the extent and reliability of the data and analysis.
5. The Arbitration Act 1996 provides that the arbitration process and allocation of costs will be determined by the arbitrator.
6. The preferred options meet the Government's objectives for aquaculture reform, and use mechanisms that are already available in the Arbitration Act to provide an efficient and fair arbitration process.

## Introduction

7. The Fisheries Act requires that aquaculture proposals cannot proceed if the Director-General of the Ministry for Primary Industries (MPI) makes a reservation, that is, if he finds that the aquaculture activity would have an undue adverse effect (UAE) on commercial, recreational or customary fishing.
8. Amendments to the Fisheries Act in 2004 provided that where a reservation is made in relation to commercial fishing, the proposal may proceed if the permit holder concludes an aquaculture agreement with the owners of quota of the affected fish stock(s).
9. The recent aquaculture reforms introduced the option for coastal permit holders to request binding independent arbitration in the event that an aquaculture agreement has not been reached with quota owners of fish stocks subject to a reservation.

10. Once arbitration has been initiated by the aquaculture applicant, the arbitrator must first determine whether the proposed aquaculture activities, or the commercial fishing in relation to the reservation, is of materially greater economic value to New Zealand.
11. If the arbitrator determines that the proposed aquaculture activity is of materially greater economic value to New Zealand, they must then determine the compensation to be awarded to affected quota owners (s186ZP(5)). The compensation payable must be determined by the methodology specified in regulations made under s186ZR(1)(b).

## Key problem summary

12. Sections 186ZN-186ZR of the Fisheries Act (the Act) as recently amended outline the process for determining compensation to quota owners through arbitration. Section 186ZR(1) of the Act provides for regulations to be made that set out methodologies to be used for determining whether the affected fishing or the proposed aquaculture activity is of greater economic value to New Zealand, and the value of compensation.
13. This RIS outlines the benefits and risks of the options identified for the methodologies.

## Criteria for analysis

14. The methodologies must be aligned to the objectives of the reforms, which are to:
  - i. reduce cost, delays and uncertainty of the aquaculture regulatory process;
  - ii. promote investment in aquaculture development; and
  - iii. enable integrated decision-making.
15. MPI considers that the wider reform objectives ii and iii above are not directly relevant to the assessment of the options in the regulations, as investment and administrative decisions have already been made by the time that arbitration takes place. As such, the options have not been assessed against these objectives.
16. In addition to these objectives, we propose to assess the options against additional criteria:
  - i. accuracy – reduces the risk of delivering distorted results due to data anomalies and use of invalid data or analysis; and
  - ii. satisfaction – increases the likelihood of parties being satisfied that the process is fair, and reduces the risk of the process being stalled by avoidable litigation.
17. The tables in Appendix 1 sets out the options for the valuation and compensation methodologies to be specified in the regulations. The options are rated using up to three ticks or crosses according to how well they contribute to the reform objectives and satisfy the additional criteria.

## Regulatory impact analysis – analysis of options

### Methodology for determining economic value to New Zealand

18. The Fisheries Act requires the regulations to define a methodology for determining whether aquaculture or commercial fishing provides materially greater economic value to New Zealand. The arbitrator must first determine the value of each activity, then, if aquaculture is of greater value, the arbitrator must determine if the difference is material.
19. This section summarises the assessment of options for determining the economic value of the two activities to New Zealand. The following section then discusses options for defining 'materially greater' economic value to New Zealand.

#### *I: Options for approach*

20. In developing options, officials first considered whether a full economic analysis was needed, or whether a proxy for economic value for each activity could be used.

#### **Option 1: Full analysis**

21. Under this option, the arbitrator would consider any and all evidence to determine the economic benefit of both activities.

<i>Benefits</i>	<i>Risks and drawbacks</i>
<ul style="list-style-type: none"><li>• More acceptable to quota owners as they argued in submissions that the use of proxy is not adequate to assess the economic value of fishing.</li></ul>	<ul style="list-style-type: none"><li>• Less predictable than a proxy.</li><li>• Would mean a lengthier and therefore more costly arbitration process to allow analysis of all the data (at \$4500-\$6500 per day for a senior arbitrator).</li><li>• Parties could stall the process by submitting large amounts of evidence.</li><li>• Higher risk of litigation of the arbitrator's decision as the arbitrator has more discretion.</li></ul>

#### **Option 2: Use of a proxy to determine economic value (preferred)**

22. Under this option, the arbitrator would be required to use a proxy to determine the economic value of each activity.
23. A full analysis would be costly and time consuming, therefore, use of a proxy is the preferred option. On that basis, further options were developed for the proxy to be used.

<i>Benefits</i>	<i>Risks and drawbacks</i>
<ul style="list-style-type: none"><li>• Simpler to apply than full analysis, and therefore quicker and more cost effective.</li><li>• More transparent and predictable.</li></ul>	<ul style="list-style-type: none"><li>• Quota owners argued in submissions that use of a proxy is not adequate to fully assess the economic value of fishing.</li></ul>

**Allowing consideration of additional evidence**

- 24. Many of the concerns raised by submitters would be mitigated by providing that the arbitrator could review wider evidence if they were not satisfied with the extent and reliability of the data and analysis provided by the parties through the use of a proxy. The regulations would not limit the type of evidence that could be presented; this would be left to the arbitrator to decide.
- 25. Allowing for additional evidence would provide the arbitrator more flexibility which could lead to more consistent outcomes across differing circumstances.

***II: Options for proxy***

**Option 1: Export revenues as a proxy for economic value to New Zealand (preferred)**

- 26. Option 1 would use export revenues for aquaculture and fishing as a proxy for the economic value of both activities to New Zealand.
- 27. Many submitters from the Seafood Industry argued that revenues provide an incomplete picture of economic value to New Zealand.
- 28. Export revenue is the preferred proxy since it would provide a fast and low cost mechanism for establishing the values of the two activities. Revenue is relatively simple to validate and is not as influenced by tax concerns or business structures as other options, such as profitability.
- 29. In addition, there is an accepted correlation between revenue and contribution to Gross Domestic Product, as reflected in the Value Added Index.

<i>Benefits</i>	<i>Risks and drawbacks</i>
<ul style="list-style-type: none"> <li>• Revenues analysis would not require consideration of cost data, which would be necessary under other options.</li> <li>• Revenue data would not impose additional cost on the parties as it is publicly available.</li> <li>• Use of revenues as a proxy could reduce the time and cost to aquaculture applicants and quota owners.</li> <li>• Revenues can be verified against other sources: aquaculture revenue can be verified by multiplying production by export price. Fishing revenue can be verified by multiplying impacted catch by export price. In contrast, data on asset values, and information on enterprise-specific costs and profits is not readily available.</li> <li>• Revenue avoids the variability of internal business decisions: profitability may be a function of business decisions about investment, pay, or managerial discretion.</li> <li>• Revenue is less affected by choices about business structures that can affect asset values.</li> </ul>	<ul style="list-style-type: none"> <li>• Export revenue data cannot be used in all circumstances as not all fish stocks are exported.</li> <li>• Revenues may not be a true reflection of value for species that are mainly sold domestically.</li> <li>• In circumstances where there is low quality data, the use of revenues alone may not provide a robust indication of economic value to New Zealand.</li> </ul>

### Option 2: Asset values as a proxy for economic value

30. The asset value of commercial fishing activity in an area of the proposed aquaculture activity can be described as the potential impact on the quota value of the affected fish stocks. Ideally quota value would be estimated through a market-generated price. However, in the absence of sufficient quota trading that generates a reliable market price, quota value can be described (using Annual Catch Entitlement (ACE) as a proxy) as the net present value (NPV) of all future economic returns from fishing (i.e. the NPV of ACE prices).
31. There is currently little available market data on the asset value of aquaculture due to a lack of reported sale prices and low numbers of sales. This makes comparison of the asset values of commercial fishing and aquaculture problematic.

<i>Benefits</i>	<i>Risks and drawbacks</i>
<ul style="list-style-type: none"> <li>• Submitters supported this option over the use of revenues as a proxy.</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of robust asset value data for aquaculture space means that further work would be required to value aquaculture space resulting in additional cost to the aquaculture industry and/or the Government.</li> <li>• Asset values are affected by choices about business structures, and so less reliable than revenues.</li> <li>• The base data (ACE trade prices, quota trade prices) varies in quantity and quality for different fish stocks, so may not be a fair representation of the asset values of quota owners in all cases.</li> </ul>

### Option 3: Profits as a proxy for economic value

32. Option 3 would use profits as a proxy for economic value to New Zealand.

<i>Benefits</i>	<i>Risks and drawbacks</i>
<ul style="list-style-type: none"> <li>• More reflective of economic impact than revenues.</li> <li>• Possibly more acceptable to quota owners who submitted that revenues do not reflect different cost structures of the two industries.</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient information on costs for both sectors to determine profits.</li> <li>• Profits are strongly affected by business decisions about investment, employee pay, or managerial discretion.</li> <li>• Profits are more affected than revenues by tax and other liabilities of individual companies and trusts.</li> </ul>

### III: Options for definition of ‘materially greater value to New Zealand’

33. A further consideration is whether the regulations should define ‘materially greater economic value to New Zealand’. There is no standard definition of ‘materially greater economic value to New Zealand’ to refer to.

#### Option 1: No threshold

34. Option 1 would leave the definition of ‘materially greater economic value to New Zealand’ up to the arbitrator.

<i>Benefits</i>	<i>Risks and drawbacks</i>
<ul style="list-style-type: none"> <li>• Avoidance of unforeseen consequences that may result from including a definition in the regulation.</li> <li>• Arbitrator could set a high threshold if the data and analysis is considered to be poor – this would afford greater protection to quota holders.</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of direction for arbitrator could result in inconsistent interpretation across different arbitrators – this could trigger litigation.</li> <li>• More time and cost required to make decision.</li> <li>• Less certainty and predictability for all parties.</li> </ul>

#### Option 2: Threshold of 5:1 (preferred)

35. Option 2 would establish a ratio of 5:1 to be set as the threshold level above which the value of aquaculture is deemed to be materially greater than the value of fishing lost in the affected area.
36. MPI considers that a ratio of 5:1 is appropriate because it is a high enough threshold to provide a high level of certainty that the test of materially greater economic value has been met, even where there may be uncertainties in relation to data and analysis. At the same time it would not be so high as to act as a disincentive to aquaculture development.

<i>Benefits</i>	<i>Risks and drawbacks</i>
<ul style="list-style-type: none"> <li>• May allow more aquaculture development than a higher threshold while maintaining certainty for quota holders that fishing will not be displaced by marginal aquaculture activities.</li> <li>• A 5:1 threshold will take into account any uncertainty in relation to data and analysis when applying a proxy.</li> </ul>	<ul style="list-style-type: none"> <li>• Quota owners may be concerned that threshold is not high enough, while the aquaculture industry may consider the threshold too high, which may hinder aquaculture development.</li> </ul>

#### Option 3: Threshold of 6 (or more):1

37. Option 3 would establish a ratio of 6 (or more):1 to be set as the threshold level above which the value of aquaculture is deemed to be materially greater than the value of fishing lost in the affected area.

<i>Benefits</i>	<i>Risks and drawbacks</i>
<ul style="list-style-type: none"> <li>Likely to be seen by quota holders as affording greater protection of quota value than the other options.</li> </ul>	<ul style="list-style-type: none"> <li>Aquaculture industry likely to be concerned that the threshold is too high.</li> <li>May result in less aquaculture development than a lower threshold.</li> </ul>

## Methodology for compensation

### IV: Options for methodology for compensation

38. Sections 186ZR(3)(a) and 186ZR(3)(b) of the Act set out the requirements for the methodology to be applied when calculating the compensation to quota owners under s186ZR(1)(b).
39. These sections require that the methodology provides for compensation to be calculated in proportion to the impact on fishing, including:
  - Loss in value of affected quota
  - Increased fishing costs, consequential disruption costs and solatium
  - Any complementary uses that might exist for the site.
40. Section 186ZR(3)(b) provides the calculation of compensation to reference any recent transfers of quota or associated ACE.
41. The following options outline different levels of prescription that should be included in the regulations.

#### Option 1: Fixed approach to compensation

42. The fixed approach would require the arbitrator to refer to the loss in annual average catch from the UAE Test, and reference to any recent transfers of quota and ACE for the stock in accordance with s186ZR(3)(b).
43. The fixed approach would prescribe the data source(s), discount rate, summary statistic, timeframe, price deflator to adjust for inflation etc., to determine the amount of compensation that should be paid for loss in quota value. The arbitrator would not have any flexibility to deviate from the regulations or seek further information from the parties.
44. For example, the regulations could require the arbitrator to calculate quota value using the most recent 10 year mean quota trade price, adjusted for inflation using a 9% price deflator with reference to the 5 year mean ACE price (discounted using a 9% discount rate).
45. Under a fixed approach, the methodology would specify a standard multiplier of 1.2 for consequential disruption costs and solatium. This multiplier for the solatium is consistent with research carried out at Lincoln University<sup>1</sup>. The disruption costs have been set at the same level. Four out of the five submitters who commented on compensation preferred a fixed approach for these aspects of compensation.

<sup>1</sup> *Solatium Payments for Public Works – An international comparison*. Property Group, Lincoln University. Date unknown.



46. Adjustments for complementary uses for the site would be based on evidence presented to the arbitrator, consistent with s186ZQ(2) of the Act.

<i>Benefits</i>	<i>Risks and drawbacks</i>
<ul style="list-style-type: none"> <li>• Faster and less costly process to determine compensation.</li> <li>• More certainty for participants.</li> <li>• Transparent and replicable.</li> <li>• Greater predictability of the outcomes of the arbitration resulting in greater influence on the aquaculture agreements bargaining process.</li> </ul>	<ul style="list-style-type: none"> <li>• The arbitrator may not have sufficient flexibility to determine fair compensation in the event that they were not satisfied with the data and analysis available.</li> <li>• Risk that fixed methods to determine quota value (e.g. timeframe, discount rate, price deflator) will become out of date and result in a less durable regulation.</li> <li>• Fixed disruption costs and solatium payment will result in some quota owners being overcompensated and others undercompensated, but given that this is a small proportion of the compensation payment, it is not likely to be considered significant.</li> </ul>

**Option 2: Semi - prescriptive approach to compensation (preferred)**

47. Under the semi-prescriptive approach the data source(s), summary statistic, timeframe etc., would not be prescribed and the arbitrator could seek further information if not satisfied with the extent and reliability of the data and analysis provided.
48. The only fixed matters in the regulations would be the figure for the impact on annual average catch from the UAE Test, and reference to any recent transfers of quota and ACE for the stock in accordance with s186ZR(3)(b).
49. The regulations would only require that the figures be inflation adjusted where appropriate and that ACE prices be discounted using an appropriate discount rate chosen by the arbitrator. Prices would be deflated to current values using a price deflator, but the percentage would not be fixed in the regulations.
50. Like the fixed approach, the semi-prescriptive approach would specify a fixed multiplier of 1.2 for consequential disruption costs and solatium.
51. As for Option 1, complementary uses for the site would be based on evidence presented to the arbitrator.

<i>Benefits</i>	<i>Risks and drawbacks</i>
<ul style="list-style-type: none"> <li>• Less prescription likely to provide for a more durable regulation.</li> <li>• May be perceived as more fair, and therefore increase satisfaction and reduce the risk of litigation.</li> <li>• Flexibility to determine fair compensation when the quality of data and analysis is low.</li> <li>• Potential to be more accurate than a fixed approach as further evidence can be considered.</li> </ul>	<ul style="list-style-type: none"> <li>• Risk that greater arbitrator discretion will result in inconsistent outcomes.</li> <li>• The presentation and analysis of further evidence will increase the time required for the arbitration process.</li> <li>• Fixed disruption costs and solatium payment will result in some quota owners being overcompensated and others undercompensated, but given the small proportion of the compensation payment, not likely to be considered significant.</li> </ul>

**Option 3: Fully- flexible approach to compensation**

52. Under a fully-flexible approach, each of the three elements of compensation could be determined in any way the arbitrator sees fit based on submissions by participants, as long as the approach is consistent with the principles for determining compensation set out in law and any other parameters set in the law or regulations.

<i>Benefits</i>	<i>Risks and drawbacks</i>
<ul style="list-style-type: none"> <li>• The preferred option of quota owners; so would be received favourably by them.</li> <li>• Less prescription results in a more durable regulation.</li> </ul>	<ul style="list-style-type: none"> <li>• Would require more time to complete the arbitration process than a fixed or semi-prescriptive approach.</li> <li>• Risk that greater discretion for arbitrator will result in more litigation of decisions regarding evidence presented.</li> <li>• Less predictability and higher uncertainty for all parties.</li> </ul>

**Consultation and engagement**

53. Options for aspects of the arbitration and compensation methodology were consulted on between 24 August and 28 September 2011. To support this process MPI released a consultation document and questionnaire. Briefings were also provided to Aquaculture New Zealand, Seafood Industry Council, Te Ohu Kaimoana (TOKM) and technical advisors to the Iwi Leaders Group.

54. Thirty submissions were received.

55. The majority of aquaculture submitters supported a fixed approach to the determination of economic value to New Zealand under s 186ZR(1)(a) of the Act. Four of six aquaculture submitters supported comparing assets values as a proxy.

56. TOKM supported a semi-flexible (now titled ‘semi-prescriptive’) approach based on comparing asset values, but allowing additional information to be presented where there is low certainty associated with the available information; although TOKM notes this would not be warranted if the available data shows a large differential between the values of aquaculture and fishing.

57. The majority of commercial fishers (12 of 14) support a broad and enabling approach to both valuation and compensation. Their preference is to give the arbitrator full discretion to consider the best available information for both decisions.
58. Aquaculture submitters supported a fixed or semi-prescriptive approach to determining compensation payable, as they prefer a fast, predictable and low cost approach to compensation.
59. Discussions were held with officials from the Treasury and the Ministry for Economic Development during the development of this paper.
60. Input was also received from a member of the Arbitrators and Mediators Institute of New Zealand (AMINZ) and Dispute Resolution Services Ltd on arbitration procedure and from the New Zealand Institute of Economic Research (NZIER) on valuation considerations.
61. Consistent with commitments made to Iwi Leaders, officials have engaged closely with technical advisors to the Iwi Leaders Group in formulating the analysis in this paper.

## Implementation

62. Following the enactment of the regulations, MPI intends to provide ongoing guidance to the Seafood Industry and arbitrators. This may include a template arbitration agreement.
63. MPI will provide background information on what the regulations mean, and how the process fits within the wider UAE test process. Background reference material will also be posted on the MPI website, to assist all parties in reaching aquaculture agreements or arbitration. For example, links to relevant data and analysis that may assist the negotiation and arbitration process, examples of best available data to assist the arbitrator.

## Monitoring and evaluation

64. MPI will monitor the use of independent arbitration and provide support where issues have been identified and improvements can be made to support the arbitration process.

## Conclusion and recommendations

65. MPI recommends that:

### *Determining economic value*

- a proxy rather than full economic analysis form the basis for determining the economic value of fishing and aquaculture to New Zealand (option I.2);
- export revenues be used as the proxy for economic value to New Zealand (option II.1);
- the arbitrator be able to accept further evidence if they consider it warranted;
- the economic value of an aquaculture proposal to New Zealand be defined as being materially greater than the economic value of commercial fishing that would be displaced when it is assessed as being at least five times greater (option III.2);

### *Determining compensation*

- a semi-prescriptive approach to compensation should be taken in the regulations;
- recent quota and ACE trade prices be used to determine quota value, providing that the arbitrator may consider other information as they see fit;
- figures should be inflation adjusted where appropriate and ACE prices should be discounted using an appropriate discount rate chosen by the arbitrator.
- a set multiplier of 1.2 be used to determine the value of consequential disruption and solatium payments;
- adjustments for complementary uses for the site would be based on evidence presented to the arbitrator.

## Appendix 1: Assessment of options

**Table I: Options for approach to determining economic value to New Zealand**

Option	Contribution to reform objectives	Additional criteria		Key risks and drawbacks
	Reduces costs, delays and uncertainty	Accuracy	Satisfaction	
<b>Option 1: Full analysis</b>	XXX	✓✓✓	✓✓✓	<ul style="list-style-type: none"> <li>Less predictable than a proxy.</li> <li>Lengthier and more costly arbitration process (\$4500-\$6500 per day for a senior arbitrator)</li> <li>Parties could stall the process by submitting large amounts of evidence.</li> <li>Higher risk of litigation of the arbitrator's decision as arbitrator has more discretion.</li> </ul>
<b>Option 2: Use of a proxy</b> (and allowing for additional evidence to be presented)	✓✓✓	✓✓✓	✓✓	<ul style="list-style-type: none"> <li>Quota owners argued in submissions that use of a proxy is not adequate to fully assess the economic value of fishing.</li> </ul>

**Table II: Options for proxy**

Option	Contribution to reform objectives	Additional criteria		Key risks and drawbacks
	Reduces costs, delays and uncertainty	Accuracy	Satisfaction	
<b>Option 1: Revenue</b>	✓✓✓	X	X	<ul style="list-style-type: none"> <li>Revenue data cannot be used in all circumstances as not all fish stocks are exported</li> <li>Revenues may not be a true reflection of value for species that are mainly sold domestically.</li> <li>In circumstances where there is low quality data, the use of revenues alone may not provide a robust indication of economic value to New Zealand.</li> </ul>
<b>Option 2: Asset values</b>	X	X	X	<ul style="list-style-type: none"> <li>Further work would be required to value aquaculture space resulting in additional cost to the aquaculture industry and/or the government.</li> <li>Asset values are affected by choices about business structures, and so less reliable as a proxy than revenues.</li> <li>The base data (ACE trade prices, quota trade prices) varies in quantity and quality for different fish stocks, so may not be a fair representation of the asset values of quota owners in all cases.</li> </ul>
<b>Option 3: Profits</b>	X	X	✓	<ul style="list-style-type: none"> <li>Insufficient information on costs for both sectors.</li> <li>Profits are strongly affected by business decisions about investment, employee pay, or managerial discretion.</li> <li>Profits are more affected than revenues by tax and other liabilities of individual companies and trusts.</li> </ul>

**Table III: Options for definition of ‘Materially Greater Economic Value to New Zealand’**

Option	Contribution to reform objectives	Additional criteria		Key risks and drawbacks
	Reduces costs, delays and uncertainty	Accuracy	Satisfaction	
<b>Option 1: No materiality threshold defined</b>	✗	✗	✘✘	<ul style="list-style-type: none"> <li>Lack of direction for arbitrator could result in inconsistent interpretation across different arbitrators – this could trigger litigation.</li> <li>More time and cost required to make decision.</li> <li>Less certainty and predictability for all parties.</li> </ul>
<b>Option 2: Materiality threshold of 5:1</b>	✓✓✓	✓	✗	<ul style="list-style-type: none"> <li>Quota owners may be concerned that threshold is not high enough, while the aquaculture industry may consider the threshold too high, which may hinder aquaculture development.</li> </ul>
<b>Option 3: Materiality threshold 6 (or more):1</b>	✓✓✓	✓	✘✘	<ul style="list-style-type: none"> <li>Aquaculture industry likely to be concerned that threshold is too high.</li> <li>May result in less aquaculture development than a lower threshold.</li> </ul>

**Table IV: Options for methodology for compensation**

Option	Contribution to reform objectives	Additional criteria		Key risks and drawbacks
	Reduces costs, delays and uncertainty	Accuracy	Satisfaction	
<b>Option 1: Fixed approach</b> <ul style="list-style-type: none"> <li>Quota and ACE prices – data, timeframe, summary statistic and price deflator fully prescribed in regulation</li> <li>Fixed multiplier for disruption costs</li> <li>Fixed multiplier for solatium payment</li> <li>Complementary uses evidence-based</li> </ul>	✓✓	✗	✗	<ul style="list-style-type: none"> <li>The arbitrator may not have sufficient flexibility to determine fair compensation in the event that they were not satisfied with the data and analysis available.</li> <li>Risk that fixed methods to determine quota value (e.g. timeframe, discount rate, price deflator) will become out of date and result in a less durable regulation.</li> <li>Fixed disruption costs and solatium payment will result in some quota owners being overcompensated and others undercompensated, but given that this is a small proportion of the compensation payment, it is not likely to be considered significant.</li> </ul>
<b>Option 2: Semi-prescriptive approach</b> <ul style="list-style-type: none"> <li>Quota and ACE prices – data, timeframe, summary statistic and price deflator at the discretion of arbitrator</li> <li>Fixed multiplier for solatium payment</li> <li>Complementary uses evidence-based</li> <li>Disruption costs based on evidence</li> </ul>	✓✓	✓✓✓	✓✓✓	<ul style="list-style-type: none"> <li>Risk that greater arbitrator discretion will result in inconsistent outcomes.</li> <li>The presentation and analysis of further evidence will increase the time required for the arbitration process.</li> <li>Fixed disruption costs and solatium payment will result in some quota owners being overcompensated and others undercompensated, but given the small proportion of the compensation payment, not likely to be considered significant.</li> </ul>

<p><b>Option 3: Fully flexible approach</b></p> <ul style="list-style-type: none"> <li>○ All aspects of compensation fully evidence-based (including solatium, disruption costs etc).</li> </ul>	✘	✓✓✓	✓✓✓	<ul style="list-style-type: none"> <li>• Would require more time to complete the arbitration process than a fixed or semi-prescriptive approach.</li> <li>• Risk that greater discretion for arbitrator will result in more litigation of decisions regarding evidence presented.</li> <li>• Less predictability and higher uncertainty for all parties.</li> </ul>
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