



**DEER INDUSTRY
NEW ZEALAND**

SUBMISSION TO
THE MINISTER OF AGRICULTURE

On the
AMENDMENT PROPOSAL TO
THE NATIONAL BOVINE TUBERCULOSIS
PEST MANAGEMENT STRATEGY

By
DEER INDUSTRY NEW ZEALAND

30 November 2009

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Hon David Carter
Minister of Agriculture
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PO Box 2526
WELLINGTON 6140

Attention: Belita Pereira

By email: belita.pereira@maf.govt.nz

Dear Minister Carter

**AMENDMENT PROPOSAL TO THE NATIONAL BOVINE TUBERCULOSIS PEST
MANAGEMENT STRATEGY**

Deer Industry New Zealand (DINZ) is the levy funded industry-good body established under the Deer Industry New Zealand Regulations 2004 pursuant to the Primary Products Marketing Act 1953. One of its key functions is to promote and assist the development of the New Zealand deer industry.

DINZ is a member of the Animal Health Board (AHB) as per Section four of the Constitution of the AHB.

DINZ appreciates the opportunity to provide a submission on the amendment proposal for the National Bovine Tuberculosis Pest Management Strategy (proposed strategy). DINZ notes that it wishes to be heard in the event that you decide to call a Board of Inquiry.

DINZ notes that New Zealand Deer Farmers' Association has provided a submission on the proposed strategy which focuses more on the deer farmers' perspective. DINZ supports NZDFA's submission.

At the outset, I would point out that DINZ was sufficiently concerned at the lack of a principle based approach to allocating funding between industries that it sought an independent view of a fair, principle based approach to industry funding of the proposed strategy from Martin, Jenkins and Associates Ltd (Martin Jenkins).¹ The Martin Jenkins report is entitled "A Principle Based Approach to Industry Funding of the Proposed National Bovine Tuberculosis Pest Management Strategy". It is attached in full as Attachment 1 and forms part of DINZ's submission.

With respect to the proposed strategy, DINZ submits the following:

1. DINZ congratulates the AHB on the formulation of the proposed strategy. The views and perspectives of the Members of the AHB, Crown and others interested in managing bovine Tb are varied so the achievement of forming a common strategy should not be underestimated.

¹ Martin Jenkins provided a principle based approach to the Members' Committee of Animal Health Board for the current strategy in 2002.

2. DINZ agrees that although the current strategy is well ahead of targets required to meet the 2013 target of 0.2% period prevalence, it is vital to remove bovine Tb from wild populations. As such, it supports the proposed strategy's core aims of preventing expansion of existing Vector Risk Areas, testing New Zealand's ability to eradicate bovine Tb while keeping infected herd numbers to a level to avoid significant production losses and protecting the quality image of New Zealand's beef, dairy and deer products.
3. DINZ supports the Primary Objectives set in point 8.1 of the proposed strategy. DINZ notes that measurement of achievement of objectives relating to removing bovine Tb from wild populations is not as straightforward as measuring herd period prevalence. Accountability and industry support rely on clear, simple metrics.

A. DINZ requests that AHB provides clear, simple metrics to report on the proposed strategy's outcomes.

4. DINZ notes that the AHB recognises that regional councils cannot be obliged to contribute funding to the proposed strategy. DINZ has not sought legal advice, but notes that the then Minister of Agriculture indicated by letter dated 19 September 2003 that he wished DINZ to enter into a contractual arrangement so as to provide certainty of funding to the AHB. On that basis, DINZ signed a Funding Agreement with the AHB.

DINZ agrees that AHB requires certainty of funding to implement the proposed strategy efficiently and effectively.

DINZ acknowledges that regional councils collect the contribution on behalf of landowners, but notes that all other funders also collect their contributions on behalf of others. DINZ notes that regional councils also benefit from vector control through improved environmental and economic outcomes.

B. DINZ submits that all Members of the AHB, including regional councils should be obliged to support the proposed strategy by putting mechanisms in place to ensure certainty of funding. DINZ submits that the current situation is inequitable and should be remedied.

5. DINZ wishes to record its view that biodiversity benefits are likely to be significantly underrepresented at \$11.2 million per annum (point 16.3.3) in the proposed strategy. DINZ notes the difficulty of quantifying biodiversity benefits (e.g. none appears quantified in the New Zealand Biodiversity Strategy (2000)), but anecdotal comments support very strong benefits to flora and fauna of AHB's work.
6. DINZ confirms AHB's feedback from farmer consultation (point 3.2) that "For deer farmers the most common statements were calls for reduced frequency or intensity of on-farm Tb testing of deer."

C. DINZ requests consideration of ways to lower disease control testing frequency and costs.

7. DINZ notes that the proposed strategy indicates that “AHB may provide support for vector control operations...where contributions of funding or resources are available from other parties”.

D. DINZ submits that these locally initiated projects may become more important to farmers who wish to manage vectors in their area while AHB is more focused on specific areas targeted for eradication and believes reasonable support should be provided to these projects on fair and reasonable terms.

8. DINZ is very concerned at the allocation of costs of the proposed strategy.

Point 17 proposes that the current level of Tb strategy funding be maintained under the proposed strategy along with current funding shares between the Crown, the dairy, beef and deer industries.

The proposed strategy notes the funding principles set out in [Section 61](#)² of the Biosecurity Act. In summary, they require that a proposal for a National Pest Management Strategy should specify:

- The extent to which persons or classes of persons benefit from the strategy
- The extent to which persons or classes of persons create, continue or exacerbate the problems to be resolved by the strategy
- A rationale for allocation of costs.

The proposed strategy states in relation to the above three points, “Current TB strategy funding is guided by the funding principles set out in Section 61 of the Biosecurity Act.”

DINZ notes that these are not funding principles. In fact, they are matters which must be specified in the proposal.

DINZ submits that the proposed strategy is significantly different to the current strategy. The proposed strategy has substantively different objectives, strategies and benefits. For example:

- the primary objective of the proposed strategy is “establishing the feasibility of eradication of endemic TB...” compared to the current strategy which is about reducing infected herd numbers
- production benefits are emphasised in the proposed strategy more than the current strategy (as well as trade benefits).

Despite effectively being a new strategy, the proposed strategy does not discuss the extent to which persons or classes of persons benefit from the proposed strategy or exacerbate the problem of bovine Tb. Nor does the proposed strategy provide a rationale for the allocation of costs. The proposed strategy (point 17) establishes that Crown, the dairy, beef and deer industries and regions should pay as beneficiaries and/or exacerbators, but there is no rationale for the allocation of costs other than ‘that’s how it is in the current strategy’ between Crown, the dairy, beef and deer industries and regions. A particularly challenging issue is a rationale for the allocation of costs between industries. The proposed strategy is silent on this issue. It is inadequate to group the dairy, beef and deer industries as a “single class of persons” if they are to contribute as separate industries to the proposed strategy.

² Section 61 was substituted, as from 26 November 1997, by section [36](#) Biosecurity Amendment Act 1997, but the same wording applies.

E. DINZ submits that the proposed strategy does not adequately identify the extent to which persons or classes of persons benefit from the proposed strategy or exacerbate the problem of bovine Tb. DINZ submits that the proposed strategy must specify the extent to which Crown, the dairy industry, the beef industry, the deer industry and regions exacerbate and/or benefit from the proposed strategy and specify a rationale for the allocation of costs. DINZ further submits that an adequate rationale for the allocation of costs is particularly important between the dairy, beef and deer industries.

A rationale for the allocation of costs should be based on a set of funding principles. Not considering funding principles puts the proposed strategy at serious risk of producing suboptimal outcomes.

DINZ would like to suggest a way forward. As previously mentioned, DINZ was sufficiently concerned at the lack of a principle based approach to allocating funding between industries that it sought an independent view of a fair, principle based approach to industry funding of the proposed strategy from Martin Jenkins.

The Martin Jenkins' Report identifies three funding principles which DINZ supports:

- Maximise the effectiveness of the proposed strategy because different approaches to cost allocation and funding may:
 - encourage behaviours and actions compatible with the strategy's outcomes
 - place pressure on the AHB to ensure that its strategy is focused on achieving outcomes and objectives that are valued by producers.
- Minimise administration costs because different approaches to cost allocation and funding may result in different administrative and compliance costs and
- Achieve ongoing support from farmers – because different approaches to funding may or may not be acceptable to funding partners over time. The approach taken needs to be accepted as 'fair' over the long term by those who fund it. Persons in equal situations, whether beneficiaries or exacerbators, should be treated equally. The criteria on which allocation and funding decisions are based should be transparent, objective and relevant to the purposes of the strategy. Costs should be allocated between them in proportion to the benefits that they will receive from it.

F. DINZ submits that funding shares should be determined based on three funding principles of maximising effectiveness (encourage correct behaviours, place pressure on AHB to ensure valued outcomes, minimising administration costs, and achieving ongoing support from farmers (fairness - equal treatment, transparency, objectivity, relevant to purposes of the strategy and based on benefits received).

Allocation of Vector Control Costs

The AHB expects that the proposed strategy will result in two main benefits for farmers:

- all beef, dairy and venison producers should continue to benefit from mitigation of TB related trade risks
- farmers (particularly in areas where TB is eradicated) should benefit from lower production costs of TB.

Drawing on the Martin Jenkins' report (page 10): *"the strategy exists for economic purposes. Put simply, TB infection reduces the desirability and value of meat and dairy products to consumers and increases production costs of meat and dairy products.*

While facilitation of trade continues to be an important benefit of the proposed strategy, it also places emphasis on reducing production costs to farmers of TB testing, movement control, and the culling of infected animals. For this reason we conclude that it is necessary to consider alternatives to export earnings as a basis for allocating strategy costs.

In is our view the strategy's benefits (and the costs that would occur in their absence) are realised mainly by farmers in their farm gate earnings. These earnings capture the strategy's contribution to the benefit of mitigating trade risks (satisfying consumers and regulatory agencies of the quality of New Zealand's dairy, beef and venison products) as well as production costs as follows:

- *trade risk arising from TB is managed by an effective TB Strategy. This leads to markets remaining open, leading to higher farm gate earnings than if markets closed due to a high prevalence of TB in New Zealand in the absence of a TB Strategy*
- *production losses (due to culling diseased animals and low growth rates/milk production) are lowered due to an effective TB Strategy leading to higher farm gate earnings than if production losses were high due to high TB prevalence in New Zealand in the absence of a TB Strategy.*

For these reasons, we propose that the strategy's benefits ultimately accrue to farmers and impact on their farm-gate earnings and that the strategy's funding should be linked to gross farm gate revenue rather than export earnings or direct disease control costs or other production coefficients such as herd size."

DINZ strongly supports Martin Jenkins' recommended position on the allocation of industry's vector control costs on the basis of Farm Gate Returns. It covers both key benefits of trade risk mitigation and production benefit.

Based on figures from the AHB's 2008/09 Business Plan, Martin Jenkins has estimated this would result in industry funding shares of:

Sector	Share of Indivisible Costs based on Farm Gate Revenue
Beef	\$5,683,200
Dairy	\$19,148,800
Deer	\$768,000

Source: Martin Jenkins, principle based approach to Industry Funding of the Proposed National Bovine Tuberculosis Pest Management Strategy, November 2009.

G. DINZ submits that Farm Gate Revenues be used to determine the extent to which industry contributors benefit from the proposed strategy and as a rationale for the allocation of costs. DINZ submits that an allocation based on Farm Gate Returns reflects where industry benefits (trade risk mitigation and production) of the proposed strategy will accrue. DINZ submits that applying funding shares based on the current strategy (which themselves were arbitrary) have no basis for determining the extent to which industry contributors will benefit from the proposed strategy and provide no rationale for the allocation of costs.

Allocation of Disease Control Costs

DINZ is concerned that the lack of consideration of principles to determine rational funding shares in the proposed strategy will result in a mismatch between those benefitting from the strategy and those funding it. A mismatch would result in dissatisfaction from individual funders because of a lack of fairness, undermining support for the proposed strategy and decreasing its effectiveness.

A serious illustration of this is in the allocation of disease control costs. The proposed strategy (point 17) recommends disease control costs being apportioned to individual sectors because they can be easily measured. The Martin Jenkins' Report (pages 10 to 13) points out that the proposed strategy seeks to progressively eradicate Tb from particular parts of the country. This should result in lower production costs to those parts of the country and similar or higher production costs to those not targeted for eradication. This will mean some regions will benefit more than others which potentially undermines the current 'national' approach to managing bovine Tb. Because there is not an even proportion of beef, dairy and deer operations across all regions, this will result in some sectors gaining more benefits (lower production costs and lower testing costs) purely due to them being serendipitously in an area targeted for eradication. This lowers their disease control costs, but not those of others outside the region.

The Martin Jenkins' Report argues that the rational approach under a principle based approach to determining funding allocations to disease control funding would be to nationalise disease control costs and allocate them among industries using the same methodology as indivisible costs. This would mean that production benefits would be shared fairly among industries and individual regions. DINZ sees logic in this approach, but also notes that there would be challenges.

The deer industry currently prefers that individual deer farmers manage their own testing costs whereas the beef and dairy industries have testing requirements under industry-wide contracts and are paid as part of their levies/industry contributions to the AHB.

A change to nationalised funding would be a significant change for the deer industry, and would need to be debated among the deer industry to understand what the practical implications would be. For example, by employing their own tester, a farmer can arrange for that person to do other jobs on the same visit. Also, nationalised funding may subsidise less efficient producers.

If a Board of Inquiry is called, the deer industry would use the intervening time to establish its position on nationalising disease control costs.

H. DINZ submits that a principle based approach should be used to determine a fair allocation of disease control costs between industries. DINZ submits that the rationale for allocation in the current strategy will be unfair on those regions not targeted for eradication; and unfair on those industries with a relatively lower proportion of animals in areas targeted for eradication. DINZ notes that the deer industry will require an opportunity to debate the merits of moving to a collective approach to disease testing.

9. DINZ notes that although the proposed strategy does not propose increasing the sum spent on Tb control, \$82 million per year is a very large investment for all funders. DINZ supports Ministry of Agriculture and Forestry's review of AHB's expenditure. DINZ is confident that AHB has an operational culture of managing costs closely. However, DINZ exhorts AHB to be particularly vigilant and look for ways the lower costs and increase effectiveness; and to report to members on what has been considered.

In closing, DINZ and the deer industry remain supportive of the AHB and its work on bovine Tb. Generally speaking, deer farmers are passionate about being successful in the battle against bovine Tb and they accept that they must contribute their fair share to AHB's activities. However, they are of the view that if current funding is simply rolled over, they will be paying more than their fair share. They have estimated that their contribution to AHB per kilogram of venison produced will more than double over the next two years. They believe this is unfair and DINZ agrees.

DINZ appreciates your efforts, Minister, in securing continued Crown funding in challenging economic times. DINZ would prefer to be signing-off the proposed strategy perhaps with minor amendments. However given the concerns stated above, DINZ is not in a position to provide support for the proposed strategy.

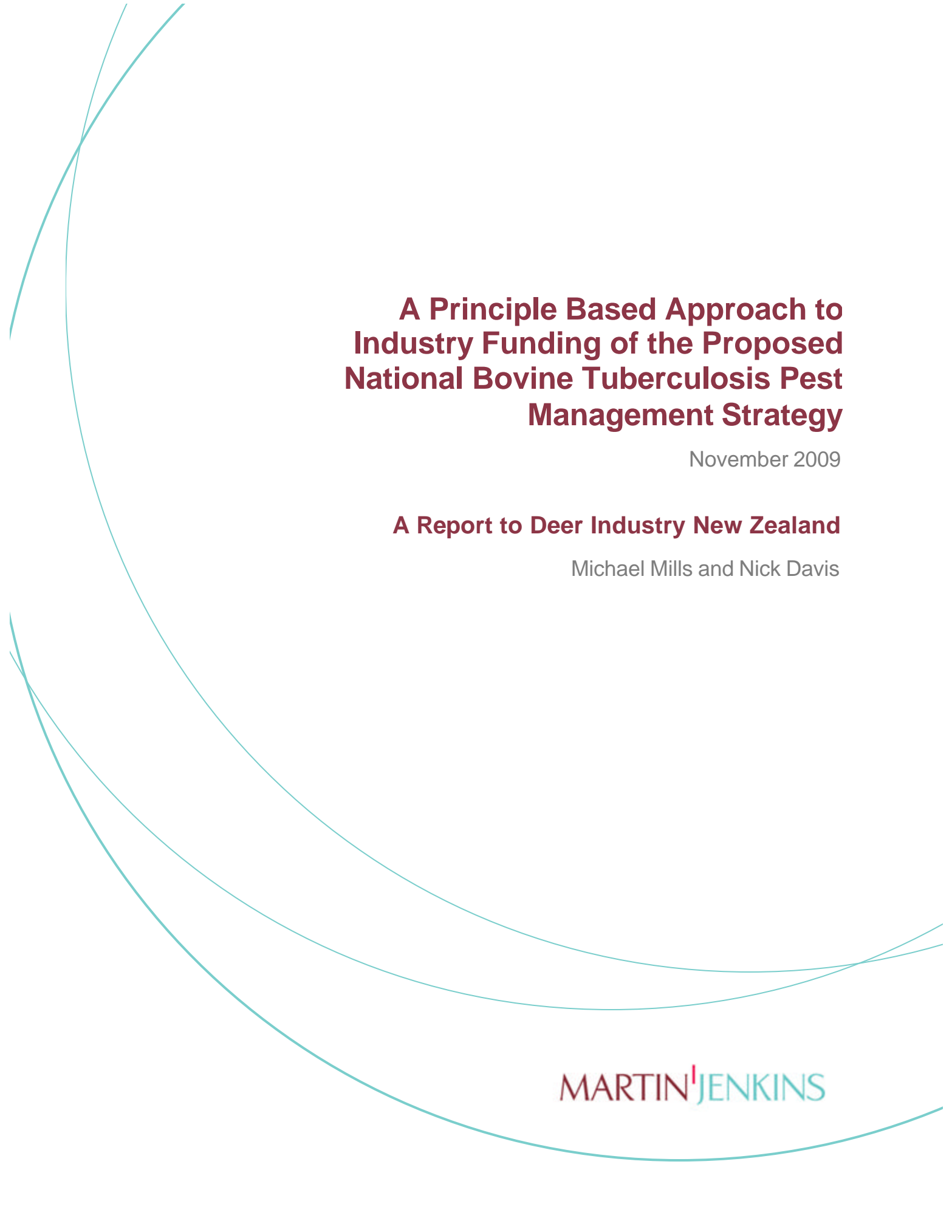
DINZ remains open to finding a constructive, satisfactory path forward with funding partners either through a board of enquiry process or outside it.

Yours sincerely



Mark O'Connor
Chief Executive Officer
Deer Industry New Zealand

Attachment 1



A Principle Based Approach to Industry Funding of the Proposed National Bovine Tuberculosis Pest Management Strategy

November 2009

A Report to Deer Industry New Zealand

Michael Mills and Nick Davis

MARTIN^IJENKINS

Preface

This report has been prepared for Deer Industry New Zealand by Michael Mills and Nick Davis from MartinJenkins (Martin, Jenkins & Associates Limited).

MartinJenkins is a New Zealand-based consulting firm providing strategic management support to clients in the public, private and not-for-profit sectors.

Our over-riding goal is to build the effectiveness of the organisations we work with. We do this by providing strategic advice and practical support for implementation in the areas of:

- organisational strategy, design and change
- public policy and issues management
- evaluation and research
- financial and economic analysis
- human resource management

MartinJenkins was established in 1993, and is privately owned and directed by Doug Martin, Kevin Jenkins, Michael Mills and Nick Davis.

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Background

The deer, beef cattle and dairy industries jointly fund, with the Crown and regional councils, the Animal Health Board's (AHB's) strategy to control and reduce the spread and incidence of bovine Tuberculosis (TB) in New Zealand, so as to:

- protect overseas market access for New Zealand's beef, dairy and venison exports
- avoid livestock production losses and associated losses to industry.

This strategy is provided for under the Biosecurity Act 1993 (the Act). Part Five of the Act requires that the AHB in proposing the strategy must (amongst other matters) specify how the costs of implementing the strategy will be funded.

The AHB is proposing to extend the current strategy from its expiry date of July 2013 out to July 2025. The proposed extension includes changes to the strategy's purpose and objectives that would allow for a relaxation of the targeted prevalence rate for TB (from 0.2% to 0.4%) while also seeking to progressively eradicate TB from particular geographic areas.

The annual cost of the extended strategy is initially proposed to be \$82 million per year (the same as the current year cost of the current strategy), including \$50.5 million per year for possum and other wildlife vector control inclusive of management costs. The AHB has proposed that the existing funding arrangements should continue unchanged.

Under existing arrangements both beneficiaries and exacerbators fund the strategy. Their contributions for 2007/08 are detailed in table 1 below.

Table 1: Sector Contributions 2007/08 Excluding Interest (\$000)

Sector	Cattle Levies	Industry Grants	Crown Funding	Regional Funding	Other Income ¹	Total
Deer	-	1,973	-	-	4	1,977
Beef	19,955	-	-	-	72	20,027
Dairy	5,956	16,977	-	-	58	22,991
Crown	-	-	30,671	-	-	30,671
Regions	-	-	-	6,256	-	6,256
Total	25,911	18,950	30,671	6,256	134	81,922

Source: Animal Health Board, Annual Report 2008

Note:¹Other income includes reactor proceeds, gains on disposal of assets and Animal ID scheme income

The detail of the proposed strategy has been agreed between the deer, beef cattle and dairy sectors. Deer Industry New Zealand (DINZ) supports the strategy, but wishes to ensure that industry partners' cost shares are equitable.

To this end DINZ engaged MartinJenkins to advise it on the efficacy of the proposed approach to funding - particularly the principles and methods for allocating vector control and other indivisible costs between industry partners.

Previous consideration

Previous decisions on how to allocate the strategy's indivisible costs between sectors have been contentious and difficult.

Past decisions have involved an agreed set of principles and criteria augmented by varying degrees of negotiation and compromise.

Over time the basis for cost allocation has moved from an approach based on allocation in proportion to the direct 'on farm' costs of disease control surveillance and testing to an approach based on allocation in proportion to the expected benefits to industry.

Pre 1996

Prior to 1996, costs were allocated on the basis of an input/output formula agreed between the beef and dairy sectors. Under this approach costs that were not attributable to a particular sector (indivisible costs) were allocated on the basis of attributable (divisible) costs.

The implication of this funding arrangement was that sectors contributed to the strategy in proportion to their actual 'on farm' disease control costs.

1996 arbitrated decision

In 1995 the New Zealand Dairy Board and the New Zealand Meat producers' Board, and the New Zealand Game Industry Board agreed to engage an arbitrator to determine the allocation of costs for the next five years of the strategy.

Underlying the need for arbitration was disagreement between the sectors as to the purpose of the strategy:

- the dairy and cattle industry submitted that control of TB is based on a mix of public health grounds, animal welfare grounds and trade policy considerations
- the Game Industry Board submitted that the dominant purpose of the strategy is economic, being the protection of the country's ability to market agricultural products.

This difference of view gave rise to differences on how to allocate costs and fund the strategy:

- dairy and cattle were of the view that the strategy should be funded on the basis of the input/output formula
- deer disagreed and was of the view that funding should be based on each sector's earnings at risk.

The outcome of the 1996 arbitration was a determination that:

- divisible common (attributable) costs should lie where they fall
- that for indivisible (non attributable) costs:
 - 40% should be allocated on the basis of the input/output formula
 - 60% should be allocated on the basis of gross agricultural production immediately preceding the year to which costs are to be allocated.

This decision was significant in that it gave tentative recognition to the fact that the benefits of the strategy to producers (and risks that it seeks to mitigate) accrue to all producers across all three sectors and are not directly linked to on farm disease control activity.

2002 review

In 2002 the AHB Members Committee commissioned MartinJenkins to advise it on principles to inform allocation and funding decisions. The MartinJenkins report concluded that decisions regarding the allocation and funding of costs should consider whether the proposed approach:

- encourages behaviours compatible with the purpose and objectives of the strategy
- encourages cost effective management of the strategy
- is practical and administratively efficient
- is fair, in that those benefiting from the strategy should share its costs in proportion to the risks that they would otherwise face if it did not exist.

The MartinJenkins report recommended that AHB members agree to the guiding principle that

“those who stand to directly benefit from the strategy should primarily meet its costs in proportion to the risks that they would otherwise face”, on the basis that this guiding principle is most likely to lead to efficient and equitable outcomes over the long term.

2003 Board of Inquiry

Matters of cost allocation and funding were considered by a Ministerial Board of Inquiry in 2003. The Board supported the above principle based approach to cost allocation and funding. It also supported the MartinJenkins proposed approach to funding that would have resulted in:

- indivisible costs being shared between beneficiaries
- each sector funding costs in proportion to the export risk faced by the sector in the strategy's absence
- in the absence of any agreed information on the export risks faced by each sector, the allocation of costs should be on the basis of each sector's share of total export revenues.

The Board's recommendation was predicated on a view that the purpose of the strategy is to protect primary producers from the impacts of trade shocks attributable to increased rates of TB, and that the benefits of this strategy accrue equally to all producers regardless of whether or not their herds are currently free of infection.

In reaching its conclusion the Board noted that the approach would result in a substantial increase to the dairy sector's contribution and reductions in the contributions from the beef and deer sectors. In practice, a negotiated compromise was reached between the sectors that had the effect of avoiding the full effects of this adjustment.

2008 MAF Consideration

The Ministry of Agriculture and Forestry (MAF) circulated a discussion document in 2008 that canvassed principles for funding the strategy.

It proposed an approach to cost allocation and funding based on the recommendations of the Biosecurity Funding Review. Cabinet considered these recommendations in 2005, and noted that:

A given biosecurity service is most appropriately funded by the group(s) best placed to do at least one of the following:

- 1 change its behaviour to reduce the costs of the service or the risks that give rise to the need for the service*
- 2 assess whether the benefits of the service at its current level of provision outweigh the costs and consequently influence the level of service provided; and / or*
- 3 determine whether the service at its current level of provision is being delivered most cost-effectively.*

In applying these principles MAF concluded that:

- there are strong reasons under each of the three principles for industry funding of disease control costs
- it is best to apportion disease control costs to individual industries
- vector control costs should be funded from a mix of funding from the Crown, other landowners / regional councils, and industry
- industry's share of vector control costs should be apportioned across the three industry sectors on the basis of the value of production protected, or loss in value avoided, by undertaking vector control.

MAF also cautioned that farmers may become less willing to fund the strategy as TB prevalence declines and particular regions achieve TB freedom .

Particular care must also be taken to ensure that a TB strategy is efficient over time. When TB prevalence was high, all funding parties could closely see the benefits of the TB strategy. As national [official] TB freedom in livestock approaches, the number of farmers who question their contribution to the strategy may increase. If TB freedom is considered regionally, then these factors are amplified: why should farmers in a TB free region contribute to TB control for farmers in other regions, particularly those with whom they are in competition...Furthermore, if regions withdraw once they have received TB freedom the completion of any strategy could be undermined. Remaining regions will not just be contributing to the achievement of their own freedom, but preventing reintroduction into TB free areas. This latter benefit is something that TB free areas may want to contribute to.

A principle based approach to cost allocation and funding

Aside from the financial consequences, the approach taken to cost allocation and funding is important to the Strategy's:

- **Effectiveness** – because different approaches to cost allocation and funding may:
 - encourage behaviours and actions compatible with the strategy's outcomes. For instance, if the approach taken to funding results in increased awareness of the need for individual actions in support of TB control, then the strategy may be more likely to succeed and to cost less over time
 - place pressure on the AHB to ensure that its strategy is focussed on achieving outcomes and objectives that are valued by producers. For instance, the process of considering whether costs should be allocated in proportion to trade risks has resulted in consideration of the likely magnitude of these risks and (we assume) the most cost effective method of mitigating these risks
- **Administrative cost** – because different approaches to cost allocation and funding may result in different administrative and compliance costs. For instance, an approach to cost allocation that sought to recover vector control costs directly from individual land owners would be more expensive to administer than the current approach that recovers costs from the Crown, regional councils and industry associations
- **Ongoing support from farmers** – because different approaches to funding may or may not be acceptable to funding partners over time. The approach taken needs to be accepted as 'fair' over the long term by those who fund it. Persons in equal situations, whether beneficiaries or exacerbators, should be treated equally. The criteria on which allocation and funding decisions are based should be transparent, objective and relevant to the purposes of the strategy. Costs should be allocated between them in proportion to the benefits that they will receive from it.

Application of these principles requires consideration of:

- the strategy's purposes (does it primarily exist to reduce production costs or to mitigate trade risks or both)
- the expected costs and benefits and who will share in them. Also the period of time over which benefits and costs will be realised (will those who realise the benefits also face the costs. Will the benefits be realised at the same time as the costs)
- the relative influence or ability of individual farmers, industry groups and landowners to prevent the spread of TB.

Purposes

The purpose of the proposed strategy differs from the current purpose. While still focussed on facilitation of trade (and mitigation of trade risks) it also places increased emphasis on reducing production costs of TB to farmers.

The AHB describes the purposes of the:

- **Current strategy** - being “to reduce levels of bovine tuberculosis in cattle and deer herds in the shortest feasible time so as to safeguard New Zealand overseas markets for beef, dairy and venison products”. The AHB also states that the strategy “serves to protect human and animal health and productivity”, but in saying this, notes “that most of the gains in health protection have been captured already”. The objective stated by the AHB to achieve this purpose is “to reduce the numbers of TB infected cattle and deer herds to 0.2% annual period prevalence by 2012/13”
- **Proposed Strategy** - being “to provide for effective control of bovine tuberculosis in cattle and deer herds so as to avoid livestock production losses and associated costs to industry, and to protect overseas market access for New Zealand’s beef, dairy and venison exports”. The objectives of the proposed strategy to achieve this are:
 - by 30 June 2025, to have eradicated TB from wild animal populations from at least 2.5 million hectares of TB Vector Risk Area, with consequent reclassification of this land as TB Vector Free Area
 - maintain the national TB infected herd period prevalence rate at no more than 0.4% throughout the term of the strategy. We note that this prevalence rate is higher than the current target rate of 0.2%
 - prevent the establishment of TB in possum populations in Vector Free Areas during the term of the strategy.

Expected benefits and costs

The AHB expects that the proposed strategy will result in two main benefits for farmers:

- all beef, dairy and venison producers should continue to benefit from mitigation of TB related trade risks
- farmers in areas where TB is eradicated should benefit from lower disease control and production costs (once eradication is achieved).

The costs of achieving these benefits will include:

- increased vector control costs in some locations in order to achieve eradication. The AHB initially proposes to achieve eradication on the north-western third (Huhungaroa and Rangitoto Ranges) of the Central North Island VRA, and the Hokonui Hills in Southland.

Because it is proposed to constrain funding to existing levels we assume that the additional resources needed to achieve eradication will be found through savings in other areas

- the costs of any trade risks associated with relaxing the prevalence target from 0.2% to 0.4% (not considered material). We assume that it is necessary to relax this national target in order to free resources from national level vector control for eradication activity in targeted areas
- additional disease control costs in some parts of the country including:
 - additional movement control measures, including new requirements for identification of animals and post movement testing, to herds in areas with higher risk of infection from wildlife TB vectors
 - extension of the High Risk Herd classification to herds where the TB history indicates the herd is likely to contain immuno-compromised infected animals which are failing to react to standard TB diagnostic tests
 - further controls to movement of stock from infected cattle herds.

Influencers

How much the strategy costs over its life will depend on its effectiveness in: eradicating vector animals within vector areas, controlling the spread of TB between vector areas, and containing and eliminating TB from infected cattle and deer herds.

The strategy's effectiveness will therefore be sensitive to:

- the actions of farmers in controlling TB and its spread from infected herds
- the actions of other landowners in controlling possums and other vector animals on their lands.

Because farmers, individually and collectively, face the costs of their actions as exacerbators and share in the benefits of the strategy's success, they face strong incentives (individually and collectively) to contain and eliminate the spread of TB in herds and on lands they control.

Discussion

Link to farm gate earnings

The strategy exists for economic purposes . Put simply, TB infection reduces the desirability and value of meat and dairy products to consumers and increases production costs of meat and dairy products.

While facilitation of trade continues to be an important benefit of the proposed strategy it also places emphasis on reducing production costs to farmers of TB testing , movement control, and the culling of infected animals. For this reason we conclude that it is necessary to consider alternatives to export earnings as a basis for allocating strategy costs.

It is our view the strategy's benefits (and the costs that would occur in their absence) are realised mainly by farmers in their farm gate earnings. These earnings capture the strategy's contribution to the benefit of mitigating trade risks (satisfying consumers and regulatory agencies of the quality of New Zealand's dairy, beef and venison products) as well as production costs as follows:.

- trade risk arising from TB is managed by an effective TB Strategy. This leads to markets remaining open, leading to higher farm gate earnings than if markets closed due to a high prevalence of TB in New Zealand in the absence of a TB Strategy
- production losses (due to culling diseased animals and low growth rates/milk production) are lowered due to an effective TB Strategy leading to higher farm gate earnings than if production losses were high due to high TB prevalence in New Zealand in the absence of a TB Strategy.

For these reasons, we propose that the strategy's benefits ultimately accrue to farmers and impact on their farm-gate earnings and that the strategy's funding should be linked to gross farm gate revenue rather than export earnings or direct disease control costs or other production coefficients such as herd size .

Other implications of proposed strategy changes

The proposed strategy departs from the existing strategy in that as well as controlling TB it also seeks to progressively eradicate TB from particular parts of the country. The benefit of the proposed change is that as well as providing necessary assurances to consumers and regulatory agencies it should also result, over time, in lower production costs to farmers in areas where TB is successfully eradicated.

The strategy provides for progressive TB eradication across different parts of New Zealand over time (subject to proof that eradication can be achieved cost effectively).

Because of this, if the proposed strategy is funded on the current basis (as proposed by the AHB) it will result in an inequitable distribution of costs and benefits across farmers and individual industry sectors (dairy, beef and deer) over time depending on where in New Zealand a farmer farms or a proportion of a sector is. It is likely that over time:

- all farmers and industry sectors will continue to share in the benefits of mitigating trade risks
- farmers and industry sectors in parts of New Zealand targeted for eradication will realise benefits of reduced disease control and production costs (and will pay proportionately less of the strategy's total cost)
- farmers in areas not targeted for eradication will continue to face existing disease control and production costs (and will pay proportionately more of the strategy's total cost for a smaller share of its benefits)
- farmers in some high risk areas will face increased disease control and production costs (and will pay proportionally much more of the strategy's total cost for a smaller share of its benefits).

Because deer, beef and dairy cattle are more likely to be farmed in some parts of the country than others, the extent to which sectors will share in the strategy's benefits will depend on where their herds are located and the location of areas targeted for eradication or more intensive disease control activities. Benefits will be greatest (and costs lowest) for sectors with herds in areas targeted for early eradication.

To illustrate this point, table 2 shows how the distribution of deer, dairy and beef cattle herds vary across regions from the national distribution. Proportionately, for instance, there are more deer compared to dairy and beef cattle in Southland than other regions, more dairy cattle in Taranaki and more beef cattle in Gisborne.

Table 2: Distribution of Dairy, Beef Cattle and Deer by Region (2008)

Region	Dairy	Beef Cattle	Deer	All
Northland	43%	56%	1%	100%
Auckland	43%	53%	4%	100%
Waikato	72%	24%	4%	100%
Bay of Plenty	67%	22%	11%	100%
Gisborne	5%	88%	7%	100%
Hawke's Bay	15%	73%	12%	100%
Taranaki	81%	19%	1%	100%
Manawatu-Wanganui	39%	53%	8%	100%
Wellington	40%	54%	7%	100%
Total North Island	53%	42%	5%	100%
Tasman	51%	36%	14%	100%
West Coast	69%	16%	16%	100%
Canterbury	49%	31%	20%	100%
Otago	34%	42%	24%	100%
Southland	52%	20%	28%	100%
Total South Island	47%	30%	22%	100%
Total New Zealand	51%	38%	11%	100%

Source Statistics New Zealand, 2008 Agricultural Production Survey

Notes: Data for Nelson, Marlborough and the Chatham Islands withheld by Statistics New Zealand for confidentiality reasons. The 2008 Agricultural Production Survey was a sample survey and therefore estimates are subject to sample error

Implications

Because of differences in regional distribution of herds, regional inequities will occur in the sharing of strategy costs and benefits between farmers and sectors if the allocation of strategy costs is linked to on farm disease control costs .

As noted in the MAF discussion paper, such inequities would have the potential to erode future funding support for the strategy from farmers. If so, this in turn would compromise the strategy's overall effectiveness. This is because inequities in the sharing of costs and benefits between farmers and sectors could result in a dynamic whereby:

- farmers who achieve early TB freedom question the need for their ongoing funding of vector control activities needed to eradicate TB in other parts of New Zealand
- farmers in parts of the country not targeted for early eradication question the benefits of the strategy to them .

If support for the strategy were to erode and its effectiveness were to be compromised, the long term result would be an increase in TB prevalence to a level that might trigger trade risks to the cost of all farmers.

Conclusions and Funding Implications

Our general conclusions are that:

On allocation of indivisible costs

The indivisible costs of the strategy to industry should be funded on the basis of each sector's relative farm gate revenue. This is because:

- from an industry perspective the strategy's benefits arise from:
 - trade benefits. These occur because the strategy enables farmers to make assurances to processors, regulatory agencies and end consumers that their dairy, beef and venison products are safe from TB infection
 - production benefits. These will occur if the strategy is successful in eradicating TB from particular parts of the county mitigating production losses and the need for and cost to farmers of current disease control measures
- trade benefits accrue to all producers of deer, beef cattle and dairy products, regardless of whether or not their own particular herds are TB free. Globally, when assessing risks of TB infection consumers and regulatory agencies currently look to a country's TB prevalence rate and the systems and procedures that in has in place for detecting TB infected animals and products prior to export
- farm gate earnings capture these benefits. If the strategy is successful, total farm gate earnings will increase in comparison to if there were no TB Strategy
- the proportion of farm gate earnings retained by farmers is sensitive to production losses resulting from culling diseased animals and lower growth rates and milk production
- any linking of indivisible, especially vector control costs, to on farm disease control costs could result in an inequitable allocation of strategy costs and benefits. This is because deer, beef and dairy animals are unevenly distributed across the county. Disease control costs relate to this distribution, rather than the benefits that accrue to all farmers.

On allocation of direct disease control costs

Consideration should be given to allocating direct on farm costs of disease control across farmers and between sectors. This is because:

- the proposed strategy includes a stronger focus on purposes related to mitigation of production losses and disease control costs. To this end it seeks to pilot a new approach that, if successful, would result in the total eradication of TB in particular parts of New Zealand. We conclude that:

- from an equity perspective , disease control costs should be allocated in such a way that early benefits associated with reduced disease control costs accrue to all farmers through reduced funding costs, not only to farmers or sectors located in areas where eradication is achieved
- achieving such equity in the sharing of strategy costs and benefits is necessary to ensure ongoing farmer and sectoral support for the strategy necessary for its long term effectiveness
- for this reason, we propose that disease control be funded at a national level (rather than individual farmer) on the same basis as vector control costs (in proportion to farm gate earnings).

Funding implications

Vector control costs

Our proposed approach to funding industry's share of vector control costs would be to allocate them between sectors in proportion to each sector's relative farm gate earnings - on the basis that this is the best available proxy for both trade and productivity benefits expected of the strategy.

Relative farm gate earnings for beef, dairy and deer products are shown in tables 3 and 4 below. Points to note are that the relative earnings across sectors vary year to year, especially between beef and dairy. Between 2007 and 2009 earnings for deer farmers have varied between 3.3% and 2.1% of all combined earnings . Earnings for deer farmers are forecast to be 3.0% for 2009 / 2010. For this reason and to avoid annual changes in the allocation of strategy costs it would be worth considering an approach based on an average of farm gate earnings over the previous strategy period, with potential for an adjustment across sectors at the end of the strategy period to reconcile actual versus historical earnings .

Table 3: Estimated and forecast farm gate revenue (\$millions)

Sector	2007	2008	2009	2010 ¹
Beef	2,167	2,069	2,608	2,357
Dairy	5,220	9,949	8,503	7,952
Deer	249	256	320	322

Source: Data on Gross Agriculture revenue and Expenditure provided in 'Situation and Outlook for New Zealand Agriculture and Forestry' provided by the Ministry of Agriculture and Forestry

Notes: ¹ Forecast

Table 4: Estimated and forecast farm gate revenue (sector share of total revenue for dairy, beef and deer)

Sector	2007	2008	2009	2010
Beef	28.4%	16.9%	22.8%	22.2%
Dairy	68.4%	81.1%	74.1%	74.8%
Deer	3.3%	2.1%	2.8%	3.0%

Source: Derived from data on Gross Agriculture revenue and Expenditure provided in 'Situation and Outlook for New Zealand Agriculture and Forestry' provided by the Ministry of Agriculture and Forestry

The implication of allocating vector control costs between sectors in proportion to relative farm gate revenue is that the cost to the deer industry would decrease by \$432,000 (36%) per annum. The difference between the AHB's proposed allocation of indivisible costs and an allocation based on farm gate revenue is shown in the table 5 below for 2010.

Table 5: Indivisible Cost: AHB proposed compared to farm gate revenue based approach

Sector	AHB Proposed	Farm Gate Revenue Based
Beef	\$8,800,000	\$5,683,200
Dairy	\$15,600,000	\$19,148,800
Deer	\$1,200,000	\$768,000
All	\$25,600,000	\$25,600,000

Source: Figures derived from data contained in Animal Health Board Budget and Business Plan 2008/09, and farm gate revenue estimates and forecasts provided by the Ministry of Agriculture and Forestry

Disease Control

We recommended that the deer industry allocate the direct costs of disease control to its farmers nationally. This is necessary because the changed strategy will likely result (if successful) in reduced disease control costs to farmers in some areas ahead of others, although ongoing disease control by some will be necessary to ensure ongoing benefits to all farmers.

We also recommend that consideration be given to de-linking the funding of disease control costs (including both divisible and indivisible costs) from actual on farm disease control costs. A de-linked approach would allocate disease control costs on the same basis as vector control costs.

The rationale for these recommendations is that disease control contributes to both trade and production benefits and gross farm gate earnings capture these benefits (and costs if the strategy fails).

Table 6 below compares the implications of our proposed approach to allocation of disease control costs on the basis of farm gate earnings to the AHB's current proposed allocation.

Table 6: Current compared to proposed approaches to disease control cost allocation compared (2008)

Sector	Proportion of total disease control costs allocated by sector	
	^(a) Current allocation	^(c) Farm gate revenue allocation
Beef	55%	22.2%
Dairy	33%	74.8%
Deer	12%	3.0%
All	100%	100%

Source: Based on data from: (a) data on estimated disease control costs for 2010 from Animal Health Board, Budget and Business Plan 2009/10 plus data on direct disease control costs to deer farmers provided by DINZ; (b) export earnings data provided by the Ministry of Agriculture and Forestry; and (c) data from the Statistics New Zealand 2008 Agricultural Production Survey

Notes: Information necessary to derive the current allocation of total disease control costs between sectors was unavailable at the time of preparing this report.

Recommendations

We recommend that Deer Industry New Zealand note our conclusions that:

- 1 Industry's share of vector control costs should be allocated across the deer, beef cattle and dairy sectors in proportion to the value of each sector's farm gate revenue - on the basis that strategy costs should be allocated in proportion to expected benefits which are trade and production benefits captured by farmers in their farm gate revenue
- 2 Direct disease control costs to deer farmers should be allocated across all deer farmers nationally, in order to avoid inequities that would otherwise arise from changes to the strategy that seek to achieve eradication in some areas ahead of others
- 3 Funding of the strategy's disease control costs (direct and indirect) should be de-linked from on farm disease control costs and instead based on each sector's share of farm gate revenue – on the basis disease control is an essential element of the strategy necessary to realise trade and production benefits and to avoid potential inequities associated with changes to the strategy to pursue eradication of TB in some parts of the country ahead of others