



New Zealand Deer Farmers Association

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Submission on Climate Change Response (Zero Carbon) Amendment Bill

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Introduction

1. The New Zealand Deer Farmers' Association (NZDFA) is a voluntary subscription based Incorporated Society (est1975) and acts as an industry-good body established to represent the interests of New Zealand deer farmers, families and staff and to promote and assist development the development of the deer farming industry in New Zealand.
2. The NZDFA has a formal and close working relationship with Deer Industry New Zealand initiated in 2002 with the development of the producer management portfolio that allows DINZ and DFA to be closely aligned in farm productivity gains and in closer association with deer farmer concerns. That relationship has been further bolstered with the creation of an Environmental Stewardship Manager within DINZ who works closely at NZDFA national and regional branch level.
3. The New Zealand Deer Farmers Association has ~1250 subscription paying members of an estimated ~1500 deer farmers and is nationally represented by a 4-person Executive Committee (including the NZDFA Chairman). The NZDFA through its Executive Committee fully supports the DINZ submission and has actively been engaged in commentary and consideration with the Zero Carbon Bill with other DINZ staff. For that reason, this DFA submission is essentially based on the DINZ submission.
4. New Zealand is the world's largest producer of farmed deer. The main products marketed from deer are venison and deer antler velvet and approximately 95% of products are exported. In the year ending 30 September 2018, deer products were worth \$322 million in export receipts to New Zealand.
5. DINZ levy payers and NZDFA members are producers and processors of venison and velvet. There are roughly 1,500 deer farmers and 16 processing plants that slaughter deer, of which 12 slaughter only deer.

6. The industry is the youngest pastoral-based industry in New Zealand (the first deer farm licence was issued in 1970) but provides diversified markets and additional revenue to and complementary land use with other pastoral farming industries. Indeed about 80% of deer farmers also farm other livestock species and/or arable crops.
7. NZDFA supports the ambition of the Climate Change Response (Zero Carbon) Amendment Bill (the “Bill”) to create a framework to achieve the Paris Agreement goal of “Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change” (Paris Agreement, UN 2015, Article 2).
8. However, NZDFA is concerned that the methane reduction targets in the Bill are overly ambitious
 - i) compared with other greenhouse gas reduction targets; as well as
 - ii) in relation to the ability for drystock farms to reduce methane through any other means than reducing stock numbers.
9. Further, the ambition of these reduction targets (10% reduction of methane by 2030 and 24-47% reduction by 2050) is restricted by the inability for the farmer to offset the impacts of methane emissions through on-farm sequestering carbon in trees and other woody vegetation.
10. NZDFA along with other pastoral industry bodies continues to invest in and otherwise support research and technologies to reduce livestock greenhouse gas emissions. When effective technologies are available NZDFA would also support increasing the level of ambition of any reduction target through an appropriate review process. Until then the reduction target for methane should be at a level of methane emissions that does not result in further warming.
11. The deer industry shares concerns with all the other pastoral-based industry bodies but has particular affinity with the drystock sector as:
 - i. Deer farms tend to be multi-species;
 - ii. Products derived from deer farms are similar (venison alongside beef and lamb, annual velvet harvesting alongside wool),
 - iii. Deer farms occupy the same land classes and run similar production systems (breeding, venison finishing/velvet) and have similar levels of inputs.
12. For this reason, this submission is confined to issues that will particularly impact on deer farming. NZDFA notes that DINZ supports submissions from the Meat Industry Association of New Zealand (MIA) and Beef + Lamb New Zealand (B+LNZ).

Recognition of Food Production

13. Like DINZ the NZDFA notes that the purpose of the Bill *“is to provide a framework by which New Zealand can develop and implement clear and stable climate change policies that contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels.”*
14. An important contextual detail of the Paris Agreement is the stated goal of *“Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience*

and low greenhouse gas emissions development, in a manner that does not threaten food production.

15. NZDFA wishes to see the importance of maintaining food production acknowledged more explicitly in the Bill.

Part 1 clauses 5L, 5Q, 5Z and 5ZN should be amended to include the text from the Paris Agreement that efforts to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels “do not threaten food production.”

16. This is very pertinent for deer farming (and drystock farming in general) as much of the land where deer farming occurs is unsuitable for large-scale arable cropping or horticultural and alternative land uses (based on the suitability of the land) would be forestry or native vegetation regeneration. Many deer farms already have a mix of land use (livestock, forestry, retirement, wetlands, small-scale cropping) that reflects the capabilities of the land and the range of products that can be generated from this (venison, velvet, timber, biodiversity, tourism, ecosystem services).

17. Methane reduction targets. NZDFA Overview. Methane reduction.

The target of 10 % reduction by 2030 and 24 – 47 % below the 2017 levels by 2050 is totally unrealistic and goes against science-based recommendations of 0.3 % per year to insure no increase in global warming.

18. The fact that trees sequester CO₂ and not methane is being used as the reason for separating them on farm. But it leaves farming in an un-survivable position of not being able to use trees on their property's to counter methane emissions, which means that they can only achieve this by reducing stock numbers. This will result in the inability of dry stock farming (including Deer) to remain viable especially in the more challenging environment in which many deer are farmed.

19. This scenario was recently modelled by Environment Southland in its 2017 Economic Project for Agriculture and Forestry. Part of the project was modelling the effect of a 10 % reduction in a farms current stocking rate to see its effect on nutrient mitigations. This stocking reduction resulted in a huge drop in profitability and clearly shows how unsustainable this policy would be for methane reduction.

20. Science is often touted as solving livestock emissions through genetics or a methane reducing vaccine. In spite of much excellent work in research and application neither of these has happened and there appears little is no likely hood that they will in the near future.

In a review summary the Pastoral Greenhouse Gas Research Consortium (PGgRc) (March 2019, REDUCING NEW ZEALAND'S AGRICULTURAL GREENHOUSE GASES: LOW GREENHOUSE GAS FEEDS) concluded

1. Enteric methane emissions are generally stable when expressed on a unit of intake basis.

2. It takes large changes in diet to bring about changes in enteric methane emissions.

3. Predicting emissions based on chemical analysis is highly problematic. For example, chicory and forage rape are similar in quality but chicory appears to have no influence on methane emissions while forage rape does.

4. Even where emissions are shown to be reduced (e.g. forage rape), the overall impact at the national scale will be small because the alternative feed makes up a minor component of the overall diet.

5. Although there is no direct link between feed quality and lower emissions at a plant level, continuing to use high quality feed can lower a farm system's emissions intensity (emissions per unit of product)

21. NZDFA believes a vaccine or methane inhibitor would have to be practical to use and have no residue issues with animal products. Genetically lower emitting animals could have very poor productivity attributes, and inevitably be unprofitable to farm.
22. Through New Zealand having a low population and industrial base means that agricultural emissions stand out. Most of our agricultural competitors are in large populous industrial economies in which agriculture is a very small percentage of GDP and is subsidized plus it is not even entered as part of their nation's emissions.
23. A point that is missed is that part of the Paris Accord is that world food production is safeguarded in the face of climate change. This current bill as it stands compromises New Zealand agriculture and with that regional economies and the country as a whole.
24. To that end in agreement with DINZ, NZDFA does not support the methane reduction targets as proposed in the Bill, namely that *gross* emissions of biogenic methane in a calendar year are:
 - i. 10% less than 2017 emissions by the calendar year beginning on 1 January 2030; and
 - ii. at least 24% to 47% less than 2017 emissions by the calendar year beginning on 1 January 2050 and for each subsequent calendar year.
25. **NZDFA supports the DINZ recommendations that the word “gross” be replaced by “net” so that the impact of all greenhouse gases can be fairly mitigated.** Given that carbon dioxide and nitrous oxide have a net zero target this seems to be favouring or at least allowing for the continued emission of fossil fuels (as long as there is an ability to offset these emissions), while effectively requiring livestock numbers to be reduced based on current technology available to drystock farmers.
26. NZDFA notes that DINZ in conjunction with other agricultural and horticultural industry organisations have proposed a government-iwi/Maori-industry agreement that will develop on-farm emissions and mitigations reporting. It would seem both logical and practical that a farm that can report on “both sides of the ledger” can then determine a net position across all gases. NZDFA supports this position.
27. In terms of the targets themselves supports the DINZ observation that there is a range of suggested methane reduction targets for 2050. The specified target range, 24% - 47% appears to be based on the IPCC Report Summary for Policy Makers as noted in the MIA's submission. DINZ has reiterated the following observation made by MIA:
 - i. The IPCC Report and one of the authors of the report state that the scenarios in the report should not be used as targets.
 - ii. The scenario with a 24% - 47% methane reduction also provides ranges for other gases which are not reflected in the Bill.
28. NZDFA notes that credible estimates of methane reduction targets that would result in no additional warming are recognised 10% - 22% (Parliamentary Commissioner for the Environment) and it is important to note that two prominent scientists (David Frame and Andy Reisinger) were in broad agreement that if long-lived gases were net zero by 2050, then methane reductions to achieve no additional warming were around 20 -25%.
29. There therefore appears to be large variance between the reduction targets as proposed in the Bill and other credible scientific opinion. **NZDFA like DINZ would prefer the**

process of determining appropriate methane reduction targets to be more transparent and have some scientific peer review of the analysis.

30. While the focus of the Bill is to set reduction targets that contribute to the Paris Agreement it is also appropriate to consider the ability for pastoral farms to make reductions without major land use change (i.e. farms in their entirety becoming plantation forests).
31. This analysis was conducted by the New Zealand Agricultural Greenhouse Gas Research Centre (NZAGRC) on behalf of the Biological Emissions Reference Group (BERG). DINZ as a member of BERG has noted the following details from the two technical reports that underpin the BERG synthesis report:
32. NZDFA notes the reference in the DINZ submission from Reisinger *et al.* (2017). *On-farm options to reduce agricultural GHG emissions in New Zealand*:
- i. “Options to reduce biological GHG emissions are more limited for the sheep & beef sector than for the dairy sector, given the lower management intensity. The main option consists of integrating forestry into farm operations. This can achieve significant emission reductions (beyond 100%) especially if forests are planted for conservation purposes.”
 - ii. “Reducing stocking rates while improving productivity per animal in intensive finishing systems results in minor (2-5%) emission reductions, but a potentially significant increase in profitability of 16-28%.”
 - iii. For the deer sector, emissions reduction options and their economic implications are quantified only coarsely due to the absence of relevant data and process models. The limited analysis suggested that reduced stocking rate could reduce emissions by around 10 % with some small improvement in profitability. DINZ considers this finding counter-intuitive and inconsistent with deer farmer perspectives (simplistically, reduced stocking rate and increased profitability implies that the farm is overstocked so that productivity is not maximised).
33. And, Reisinger *et al.* (2018). *Future options to reduce biological GHG emissions on-farm: critical assumptions and national-scale impact*.
- i. “When these individual options are combined into different mitigation ‘packages’, biological GHG emissions from New Zealand’s pastoral sector could about 12-24% below 2005 levels by 2030, and 9-40% below 1990 levels by 2050. The wide range in potential outcomes results from different assumptions that can be made about both efficacy and adoption rates of various mitigation options.”
 - ii. Given the significant technical and commercial challenges to realisation and implementation of some of the mitigation options, especially at the high end of assumptions, these figures illustrate the challenges for the pastoral sector to contribute to New Zealand’s overall mitigation targets under the Paris Agreement. All the modelled mitigation packages rely heavily on new technologies.”
34. NZDFA and DINZ considers that the key messages from these reports for drystock farms are that:
- i. Forestry and reduced stocking rates are the currently available methods to offset or reduce emissions, and

- ii. Future (and greater) reductions rely on new technology that is currently unavailable and may not be suited to extensive pastoral farming systems.

35. Alongside DINZ, NZDFA requests that the methane reduction targets are reconsidered by the committee with the following principles in mind:

- i. The target for emissions reduction is for New Zealand to achieve zero carbon by 2050, defined as zero contribution to increased warming by 2050, through a balance of emissions and removals.
- ii. Net emissions of greenhouse gases in a calendar year, other than biogenic methane, are zero.
- iii. Net emissions of biogenic methane achieve a level equivalent to zero carbon in the impact on temperature.

36. With regards to the 2030 methane reduction target (10%), DINZ queries why this is explicitly stated for methane but absent for carbon dioxide and nitrous oxide. Rather than commit to an arbitrary 2030 target, any ambition for methane (or other gases) reductions prior to 2050 could be expressed through the five-yearly budgets set by the Independent Climate Change Commission. **DINZ therefore requests that the 2030 reduction target for methane be removed.** This would be a fair and equitable treatment of all greenhouse gases.

Summary

37. **General NZDFA view.** For New Zealand to play its part in stopping global warming we need to have a policy that requires all sectors in our economy to mitigate their emissions, but the levels of annual mitigation need to be sustainable and use the tools they have available in each sector, not by using offsets at the expense of other industries.

If we economically distress the country with an unsustainable policy, we have failed ourselves and our ability to play our part in this global task.

NZDFA supports the intent of the Bill, particularly with respect to meeting obligations under the Paris Agreement.

38. Significant amendments to the Bill which would enable deer farmers to play a positive role in meeting these obligations are:

- i. Treating methane equitably with long-lived gases by allowing farmers to meet *net* methane reduction targets on-farm and removal of the 2030 target.
- ii. Undertaking a re-assessment of the 2050 methane reduction target in a manner that is transparent and subject to scientific rigour and peer review.

39. NZDFA supports the DINZ stance noting that deer farming is an environmentally suitable land use and offers complementary revenue streams, local employment and foreign exchange to other land uses. Legislating methane reduction targets that are unachievable for low input, low impact extensive livestock farms may result in land use change that is much less varied and not reflective of the land's natural capital and optimal use.

40. Carbon reduction

The NZDFA sees considerable challenge in the huge issue we face in agriculture related to Zero carbon and mitigating methane is as stated as Dry stock farmers we are unable to use any carbon credits to offset our methane emissions.

Many farms that have substantial plantings of trees planted since 1990 do however fall outside the required minimum area required. Some of these farms can have up to 8 % of their farm in trees through shelter belts and areas of native or exotics.

NZDFA is concerned that many medium and small farms can't achieve the scale required even though their percentage in trees could be much higher than larger farms.

In the NZDFA view these current minimum qualifying areas needs to be reassessed and rectified so these conservation plantings, smaller shelter belts, riparian margin plantings farmers have willingly committed to good work since 1990, is acknowledged and NZDFA believes this has to be used to offset methane emissions.

41. The NZDFA is increasingly concerned with a recently emerging issue related to land use change, particularly pertinent for much of the land that deer farmers occupy. NZDFA notes with concern that overseas and New Zealand companies are buying farmland to plant trees to offset their carbon emissions from the use of fossil fuels. This not only means they are competing with farmers for farmland with money made from outside industries, but they have the advantage over farmers by being able to use these trees to offset their own emissions without having to drastically change what they are doing.

NZDFA contends that in these cases, that are already quite significant and escalating, that the nett long-term effect is very serious for the longevity and viability of the rural communities and believe in effect agriculture would be subsidizing the rest of our economy.

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