



SUBMISSION

On

Te hau mārohi ki anamata

**Transitioning to a low-emissions and climate-resilient future: Have your say and
shape the emissions reduction plan**

to

Ministry for the Environment

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About the Fertiliser Association of New Zealand

1. The Fertiliser Association of New Zealand (the Association), is an industry association funded by member companies, to address issues of common public good. Member companies include Ballance Agri-Nutrients Ltd and Ravensdown Ltd. Both are farmer co-operatives with some 40,000 farmer shareholders. Between them, our members supply the majority of all fertiliser used in New Zealand. As co-operatives, they are not driven by maximising the value of product sales to farmer shareholders, but by delivering best value to farmer shareholders.
2. Our members currently have the largest team of on-farm advisers – around 200 – of any of the primary sector groups. Their staff are all well trained, assisting farmers and growers to make informed, evidence-based decisions for their farm systems.
3. The Association member companies have invested significantly in products, systems and procedures which support responsible nutrient management to support a viable primary industry within environmental limits. Combined, they have invested \$30 million in research in the past 3 years.

Key considerations for New Zealand's approach to agricultural emissions reductions

4. The Paris Commitment seeks to address atmospheric temperature change. It requires an absolute reduction in GHG emissions, while also providing for climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production. [Article 2.1]
5. It is not possible in New Zealand or elsewhere, to have biological farm production for food and fibre without biological greenhouse gas emissions. They can however be minimised. Food security will be achieved through the production systems which provide lowest possible emissions per unit of food production. In addition, to achieve absolute reductions it will require increased production efficiencies, reduced waste and improved distribution systems for food products.
6. New Zealand agriculture has a very important role to play in achieving global reductions in agricultural emissions. It is a first world country with a dependence of the primary industries for its economy. While reducing domestic agricultural emissions is important, New Zealand will make its biggest impact on global GHG reductions by developing and demonstrating agricultural mitigations which provide for viable food production methods at much reduced emissions and, most crucially, supporting these methods to be adopted globally.
7. Current efforts for low emissions production systems could be accelerated if the Government continues to invest in new technologies and is able to progress regulations that provide a pathway to market for new emissions reduction technologies.
8. Without a clear regulatory pathway for technologies, the business case for investment in development of new technologies is hindered significantly. Currently there remains a great deal of confusion and uncertainty about the regulatory way forward, which impacts negatively on confidence to invest.
9. Improved regulatory pathways to bring the emerging products to market is critical to facilitating investment in these technologies which provide options to support productive agriculture with reduced emissions.
10. We will also need to work internationally with trading nations to ensure acceptance of novel technologies.
11. The Fertiliser Association supports the He Waka Eke Noa process to develop an enduring pricing system which provides for evolution of farm production systems with reduced emissions.
12. Mineral fertilisers are essential for supporting farm production for domestic food production and export income. [see our [submission](#) to Parliamentary Select Committee for the Environment]

13. Organic composts and recycled nutrient source have an important role in nutrient supply, but given farmyard effluent and manures are already returned to the land for their nutrient value, there is an extremely limited opportunity to meet nutrient demands through the circular economy alone.
14. Absolute reductions while providing for food security will come from moderation of land-use activities, making best use of available land for food production in combination with efficiency gains in production and new technologies.
15. Output based approaches (which recognise and target the farm system losses) provide better signals than input controls to drive change and overcome entry barriers to low emissions systems and products.
16. Within the fertiliser industry, mitigation technologies already exist and are being applied in the form of urease inhibitors which enable farmers to use less fertiliser product. The uptake and use of urease coated fertilisers since 2000 has been very successful. Close to half of urea product sold in New Zealand is now coated with urease inhibitor to reduce volatilisation losses. To our knowledge this is the highest uptake of this mitigation compared to any other nation. It enables farmers to choose to use less product, with lower GHG emissions, while achieving the same production goals.
17. Nitrification inhibitors are already proven as significant mitigation technologies, but are subject to regulatory framework being established and market acceptance.
18. Livestock emissions reductions have been achieved through improved genetics, improved feed systems and there are significant technological solutions in train, such as methanogens and vaccines which show promise, if not already available. Regulatory pathways are still not finalised.
19. Government support and conditions to increased efforts in research remains essential to achieving absolute reduction in GHG emissions while ensuring food security. However, without a clear regulatory pathway for technologies, the business case for investment in development of new technologies is hindered significantly.
20. Extension services should take advantage of and build on existing qualified networks within the agricultural community. One-to-one engagement with farming community will have the greatest impact on farmer understanding and decision making. The fertiliser industry has invested significantly in training courses for all rural professionals providing nutrient management advice. Along with other primary sector groups there is a nationally consistent nutrient management certification scheme which includes requirements for professional development and currency in new information and technologies.
21. Facilitating these networks for rapid uptake of climate change mitigations requires investment and commitment to building respect and confidence in primary sector partnerships.

Submission Detail addresses the following sections

Funding and Finance

- Q24. What are the main barriers or gaps that affect the flow of private capital into low-emissions investment in Aotearoa?
- Q25. What constraints have Māori and Māori collectives experienced in accessing finance for climate change response activities?
- Q26. What else should the Government prioritise in directing public and private finance into low-emissions investment and activity?
- Q27. Is there anything else you wish to share in relation to funding and financing?

Science Research and Innovation

- Q36. What are the big challenges, particularly around technology, that a mission-based approach could help solve?
- Q37. How can the research, science and innovation system better support sectors such as energy, waste or hard-to-abate industries?
- Q38. What opportunities are there in areas where Aotearoa has a unique global advantage in low-emissions abatement?
- Q39. How can Aotearoa grow frontier firms to have an impact on the global green economy? Are there additional requirements needed to ensure the growth of Māori frontier firms? How can we best support and learn from mātauranga Māori in the science and innovation systems, to lower emissions?
- Q40. What are the opportunities for innovation that could generate the greatest reduction in emissions? What emissions reduction could we expect from these innovations, and how could we quantify it?
- Q41. Are there any other views you wish to share in relation to research, science and innovation?

Behaviour Change (He Waka Eke Noa)

- Q42. What information, tools or forums would encourage you to take greater action on climate change?
- Q43. What messages and/or sources of information would you trust to inform you on the need and benefits of reducing your individual and/or your businesses emissions?
- Q44. Are there other views you wish to share in relation to behaviour change?

Circular Economy

- Q45. Recognising our strengths, challenges, and opportunities, what do you think our circular economy could look like in 2030, 2040, and 2050, and what do we need to do to get there?
- Q46. How would you define the bioeconomy and what should be in scope of a bioeconomy agenda? What opportunities do you see in the bioeconomy for Aotearoa?
- Q47. What should a circular economy strategy for Aotearoa include? Do you agree the bioeconomy should be included within a circular economy strategy?
- Q48. What are your views of the potential proposals we have outlined? What work could we progress or start immediately on a circular economy and/or bioeconomy before drawing up a comprehensive strategy?
- Q49. What do you see as the main barriers to taking a circular approach, or expanding the bioeconomy in Aotearoa?

Q50. The Commission notes the need for cross-sector regulations and investments that would help us move to a more circular economy. Which regulations and investments should we prioritise (and why)?

Q51. Are there any other views you wish to share in relation to a circular economy and/or bioeconomy?

Agriculture

Q83. How could the Government better support and target farm advisory and extension services to support farmers and growers to reduce their emissions? a. How could the Government support the specific needs of Māori-collective land owners?

Q84. What could the Government do to encourage uptake of on-farm mitigation practices, ahead of implementing a pricing mechanism for agricultural emissions?

Q85. What research and development on mitigations should Government and the sector be supporting?

Q86. How could the Government help industry and Māori agribusinesses show their environmental credentials for low-emissions food and fibre products to international customers?

Q87. How could the Government help reduce barriers to changing land use to lower emissions farming systems and products? What tools and information would be most useful to support decision-making on land use?

Q88. Are there any other views you wish to share in relation to agriculture?

Clear regulatory pathway to market, for developing new technologies

22. Lack of regulatory pathway is a barrier to private funding investment in innovation in investment in agricultural innovation. The clear regulatory pathway is required to support international engagement on the use of effective mitigation products. This will address the risk of use of such technologies becoming a barrier to market. International markets need to be comfortable with and support the New Zealand approach (e.g. CODEX standards, removal of trade barriers through, acceptance of inhibitor products and low level product residues.)
23. The lack of updated regulations poses two key issues. It:
 - a. Prevents investment in the development of new agricultural technologies. If there is no pathway to market, firms will struggle to justify investment.
 - b. Prevents conversations with our trading partners about how New Zealand will ensure new technologies are safe for consumers of our products. Until the regulations are settled, we cannot start to give comfort to our trading partners about our approval approaches around new technologies (e.g. CODEX standards).
24. Progressing this quickly is a critical step in advancing the process of investment that could deliver solutions for New Zealand farmers and growers. Responses and systems need to be flexible and streamlined to enable more rapid investment and progress.
25. Government funding streams need to be aligned and carefully consider pathways to market, so we get practical outcomes from the money invested. New Zealand needs to accelerate the development, commercialisation and delivery of mitigation options. The Government needs to explore how it works with agricultural partners intentionally and with expedience.
26. The Government should consider how to work strategically and effectively with private sector partners to most rapidly deliver new technologies. This requires flexibility and speed of process to enable more effective and trusted private investment and partnerships.

Consistent and enduring signals to support investment

27. Enduring signals are important for business planning, investment, and behaviour change. Policy predictability helps with consistency and clarity in regulatory requirements to support planning and investment. Businesses' investments will be made in the context of investment cycles and

replacement rates for infrastructure. Consistent and enduring signals would support business decision-making and investments.

28. Urgent action is needed to 'bend the curve'. The Association supports the approach of identifying time-critical policies and other necessary policies to enable support for farmers and growers to work towards the required targets, while ensuring security in food production. Approaches need to be enabling. Currently there is uncertainty about some of the technologies and the breakthroughs that will reduce emissions. However, we still need to create the policy settings and systems on the assumption that investment will deliver the technology to reduce emissions.
29. The Government consulted on regulations of inhibitors in February-April 2020. Therefore, we believe these changes, which can be made through an Order in Council, can and must be prioritised and completed with urgency.
30. Much work has been done already. Our members, Ballance Agri-Nutrients and Ravensdown, are major investors in innovation. Combined, they have invested \$30 million in research in the past 3 years. The industry could contribute even more to emissions reduction solutions or introduce them more quickly, if this barrier was addressed.
31. There needs to be care that mission-based approaches do not miss the opportunity posed by integration. Hydrogen energy solutions in Taranaki are built around the Kapuni nitrogen fertiliser manufacturing plant. Increasingly, internationally, green fertiliser manufacturing facilities are seen as a core opportunity for partnering transport energy resilience.

Support for the He Waka Eke Noa process

32. We support the He Waka Eke Noa process to develop an enduring system which provides for certainty in investment and development of farm production systems with reduced emissions.

Integrated systems approach

33. Solutions for emissions reductions may have a negative impact on water quality. We support the need for integrated solutions across emissions mitigation, climate resilience, water quality, land-use and biodiversity. A cohesive government policy approach across climate and water polices is also needed to ensure that signals reinforce each other.
34. There is a great deal of information available and it quickly gets out of date. There are often news articles about new technologies emerging, and it's hard to know what information to trust. The Government-supported "Ag matters" website is a great start, but some information is out of date already and the site could be improved to provide an easier user experience.
35. Water policies have already resulted in an ongoing reduction in emissions. Investment in technologies and advice is already enabling farmers/growers to use more mitigations.
36. Government should be able to demonstrate how it is bringing together policies that affect land use to provide an efficient and effective approach to managing environmental risks in agriculture. It will require integrated assessments about the implications/co-benefits of policies across water, climate change and biodiversity.
37. Forestry conversions are only a temporary mitigation to greenhouse gas emissions and are not a solution to providing food security. However, there is a clear role for farm forestry in areas with low food production potential to assist with sequestration and to support biodiversity objectives. This will need to be well managed to avoid excessively large-scale conversion of agricultural production land to forestry.
38. The Association supports a fully coordinated approach between central and local government so that responsibilities are clear, and we avoid duplicating and conflicting processes. In addition, the Association recommends central government:

- Supports local government to apply national policies in a consistent way throughout the country.
 - Considers the best way to support local government with the additional responsibilities of supporting emissions reduction plans, distributional impacts and climate change resilience. Local councils, especially small bodies, may need additional support to respond to increasing environmental legislation/regulations. Central government should consider how it can provide practical support including, for example, secondments or dedicated support staff. This could also contribute to better policies through feedback and understanding of policy implementation in central government.
39. We note that Māori are playing an increasingly important role in the agriculture sector. This is true across many areas, including as landowners, growers and farmers, enterprise owners, processors, innovators, and leaders. The Association supports policies that will support Māori development and contribution to the agriculture sector across all these areas.
40. Precision agriculture technologies provide for greater levels of accountability, efficiency and control. It enables improved production with reduced emissions. It provides for market focussed reporting. Market drivers, seeking environmental accountability are the most powerful drivers for behaviour change.
41. Infra structure and support for rural infrastructure and technologies to enable precision agriculture will be critical to enable efficiencies necessary for emissions reductions in absolute terms and in terms of emissions efficient food security.

Circular economy

42. Biological emissions are a part of the farm system nutrient cycle.
43. Organic composts and recycled nutrient source have an important role in nutrient supply, but given farmyard effluent and manures are already returned to the land for their nutrient value, there is an extremely limited opportunity to meet nutrient demands through the circular economy alone.
44. For example: The total nitrogen requirement for New Zealand agriculture is greater than 420,000 tonnes. An MPI report estimated total organic amendments to soil at just 4,271 tonnes N, derived from six sources¹:
- dairy processing wastewater
 - compost
 - meat processing wastewater/sludge
 - grape marc
 - vegetable processing wastewater
 - sewage sludge
45. The roles and opportunities for bioeconomy need to be very clear and well planned. There are conflicting demands for biological waste streams to be recycled and utilised for clean energy demands, manufactured products such as building and construction or as composts and nutrient sources. The outputs for recycled product will always be less than inputs. A closed system cannot meet demands for total inputs, and still export saleable products.
46. To be 'fit for purpose' it is common that recycled products require a high level of supervision and security to ensure products are safe, well processed and uncontaminated. Where large volumes of

¹ MPI (2014) Reporting to 2006 IPCC Guidelines for N₂O emissions from additional sources of organic N, prepared for the Agriculture Greenhouse Gas Inventory. Tony van der Weerden, Cecile de Klein, Frank Kelliher and Mike Rollo

low value waste products are involved, generally the processing needs to be close to both raw material and also close to the final end user.

47. Transporting high volume products across distance can generate emissions. There is need for consideration of how the material and its point of use can be closely aligned. There is a need for coordinated activities across the Waste Strategy and energy and transport.
48. Recycled products for nutrient supply will always have a role, however, mineral fertilisers will remain essential for supporting farm production for domestic food production and export income.
49. New Zealand's strength in primary production provides a platform for bioeconomic development. However, the lack of clearly defined vision or cohesive support for bioeconomic development create barriers to realising the full potential. For a bioeconomy in New Zealand to flourish, a primary sector model that is cohesive and more integrated with wider industries is needed to develop new niche industries and attract finance.

Information transfer and extension

50. Extension services should take advantage of and build on existing qualified networks within the agricultural community. One-to-one engagement with the farming community has the greatest impact in farmer understanding and decision making. Facilitating these networks for rapid uptake of climate change mitigations requires investment and commitment to building respect and confidence in primary sector partnerships.
51. Fertiliser industry has invested significantly in training courses for all rural professionals providing nutrient management advice. Working alongside other primary sector groups there is a nationally consistent nutrient management certification scheme which includes requirements for professional development and currency in new information and technologies.
52. Industry is working closely with farmers to make sure that they understand the nutrient cycles and for fertilisers are considering the right product, the right application rate, at the right time and the right place when making decisions. Farmers and growers are increasingly conscious of their stewardship responsibilities and are working to increase the efficiency of the products used while at the same time minimising adverse environmental impacts.
53. Our vision is for New Zealand's food producers to be the best and most skilled users of nutrients in the world and being recognised and rewarded for their skill and commitment to producing food within an acceptable environmental footprint.
54. While big gains in biological emission reductions might not be immediately possible, awaiting further technological breakthrough, incremental but compounding gains do collectively contribute to meaningful reductions. Gains from continuous improvement will be important, especially in the absence of new technologies. Understanding the importance of compounding incremental gains will be important in getting buy-in to climate change action from farmers and growers.
55. Livestock emissions reductions have been achieved through improved genetics, improved feed systems and there are significant technological solutions in train, such a methanogens and vaccines which show promise if not already available.
56. Within New Zealand, agricultural food production is portrayed as an unacceptable industry contributing to biological greenhouse gas emissions. If we want to see an engaged agricultural sector, the sector needs to be able to see themselves as part of the solution rather than being criticised for the essential role it plays in ensuring food security and contributing to the national economy.

Supplying New Technologies

57. New Zealand agriculture has a very important role to play in achieving global reductions in agricultural emissions. It is a first world country with a dependence of the primary industries for its economy. NZ will make its biggest impact on global GHG reductions by developing and

demonstrating NZ agricultural mitigations which provide for viable food production methods at much reduced emissions and, most crucially, supporting these methods to be adopted globally.

58. Facilitating regulatory pathways for uptake of new technologies is an essential government role. Without a clear regulatory pathway for technologies, the business case for investment in development of new technologies is hindered significantly. We will need to work internationally with trading nations to ensure acceptance of novel technologies for agricultural emissions.

Concluding Comment:

59. Thank you for the opportunity to provide commentary and feedback on the Emissions Reduction Plan Discussion Document.

Fertiliser Association of New Zealand

24th November 2021