FEDERATED FARMERS OF NEW ZEALAND

Federated Farmers of New Zealand

Submission on *MBIE Green Paper – Future Pathways*

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SUBMISSION TO MINISTRY OF BUSINESS INNOVATION AND EMPLOYMENT

To: Ministry of Business Innovation and Employment

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About Federated Farmers

Federated Farmers of New Zealand (Federated Farmers) has a long and proud history of representing the needs and interests of New Zealand's farmers for over 120 years.

Federated Farmers is a membership organisation, mandated by its members to advocate on their behalf and ensure representation of their views. Federated Farmers does not collect a compulsory levy under the Commodities Levy Act and is funded from voluntary memberships.

Federated Farmers represents rural and farming businesses throughout New Zealand and aims to empower farmers. Our key strategic priorities as an organisation are that we:

- Be the respected voice of farming.
- Foster an inspired leadership network.
- Support vibrant rural communities.

Federated Farmers represents the broad spectrum of the rural community, with six industry groups covering the specific interests of Sheep and Beef farmers ("Meat & Wool"), Dairy (including sub sections for Sharemilkers and Sharemilker employers), Arable, High Country, and Rural Butchers.

The Primary Sector

The primary sector provides just under $50 billion per annum in export receipts, with dairy being the single biggest contributor at over $18 billion followed by sheep and beef at over $10 billion.

Agricultural production, the processing and retail component of that production, and services to agriculture remain a core component of New Zealand's economy. At a national level: [1,2]

- Over 350,000 New Zealanders, or one in seven people, are employed in the food and fibre sectors.
- The food and fibre sectors contribute over $46.4 billion annually in export revenue.
- The food and fibre sectors collectively account for 11% of New Zealand's GDP.

[1] Figures are for the year ended June 2019. Situation and Outlook for Primary Industries. https://www.mpi.govt.nz/news-and-resources/economic-intelligence-unit/situation-and-Outlook-for-primary-industries/sopi-reports/

[2] Figures include Dairy, Meat and Wool, Forestry, Horticulture, Seafood, Arable, live animals, honey, and processed food.

Summary of Recommendations

Where there are identified opportunities for improvement that will benefit the sector and New Zealand as a whole, there should be clear and transparent processes to help expedite those opportunities. For example, where the methane-reduction tool Bovaer® has been identified and tested by science as a viable tool for reducing emissions – processes need to be in place to ensure that the government is supporting those opportunities.

That quantum of research funding provided to the primary sector recognise the significant benefit a small lift in its performance will make to the New Zealand economy and society given the immense contribution the primary sector currently makes to New Zealand (particularly in light of COVID-19)

That increases to the productivity and improvement to the environmental performance of the primary sector will be gained by lifting research investment alone the whole value change (pre and post farm/orchard gate)

That the primary sector is directly and actively involved in the process of research science and innovation where it impacts the sector.

That funding for research that impacts the primary sector includes and considers funding for delivery of research outputs to the sector.

That more funding opportunities are considered for research that is important to the primary sector.

GENERAL COMMENTS

1. Federated Farmers welcomes the opportunity to provide feedback to MBIE on the Te Ara Paerangi – Future Pathways Green Paper 2021.

2. B+LNZ Economic Service data has shown that New Zealand farms on-farm lamb production over the last 30 years have improved over 120%. Total stock units have decreased an estimated 6% since 2010 – the reduction largely due to the decline in the number of sheep. While stock unit is a broad measure of pasture demand, it could be argued that livestock in 2020 were better fed and more productive than in 2010.

3. Livestock productivity[3]

	Unit	1990-91	2019-20p	% change
Lambing performance	Lambs /100 ewe	102	129	+27%
Lamb weight	Kg/head	13.9	19	+37%
Lamb production	Kg/ewe	9.8	21.5	+120%
Wool production	Kg/head	5.3	5.1	-4%
Steer weight	Kg/head	297	312	+5%
Dairy production	KgMS/cow	259	385	+49%

Since 1991, the total number of sheep dropped from 57.9 million to 26.0 million in 2020-21 (-55%) while lamb production only decreased by 10% (from 395,000 tonnes to 355,000 tonnes in 2021).[4] There have also been huge improvements in dairy herd production over a similar timeframe.[5]

4. The ability of the sector to improve production (despite the drop in stock numbers) is based on the ability of the primary sector to quickly and efficiently adopt new technologies and advances in science. Research and Development is a core part of improved production on farm. Research that improves production (for example, animal genetics, forage improvement, milk production) all directly benefit New Zealand through our increased export earnings through GDP. Improved primary production has spill over benefits of improving the economic wellbeing of the wider rural communities, through supporting industries associated with the primary sector (transport companies, etc). Research is also crucial for improving all farm systems – including climate change mitigation.

5. A key component for improving environmental outcomes (in particular) at least cost is providing better investment in science and research. Improved government investment in science better enables the primary sector to deliver on economic aspirations and environmental goals while maintaining New Zealand's competitive advantage as a food exporter. Immediate areas for focus should include sharper analysis of national environmental state and trend data to yield insights relevant to prioritised policy, alongside research aimed at mitigating environmental effects and improving the efficiency of production.

[3] Source The BLNZ Compendium of Farm Facts: Beef + Lamb New Zealand Economic Service, Livestock Improvement Corporation Ltd, DairyNZ

[4] The BLNZ Compendium of Farm Facts: Beef + Lamb New Zealand Economic Service

[5] NZ_Dairy_Statistics_2020-21.pdf (d1r5hvvxe7dolz.cloudfront.net)

6. The Minister's Foreword indicates that she would like New Zealand to be more "productive, resilient and diverse". The primary sector is all of these – and a key part of our ability to improve production is the access and ability for research and development.

7. In the animal genetics space, New Zealand leads the world in its sheep breeding sector recording and collating on farm data that is used in a national genetic engine for calculation of improved breeding values for the benefit of improved genetic selection. Data and information are measured and collected directly by the industry. This is key ongoing research that impacts our GDP directly. Genetic improvement from the stud breeding industry (for example, meat yield) have had large impacts in production. The stud breeding industry must have a close relationship with science development to ensure that continuous improvement is maintained.

8. Science relies on the observation and recording of data that the primary sector (especially the stud sector) record. Many scientific discoveries have initiated from a farmer contacting a scientist to ask about a discovery or interesting thing they have found on farm (e.g., Inverdale fecundity gene)

9. Science underpins our primary industry, and it is of vital importance that the future pathways plan for science funding considers the wider picture of the importance of research funding to the sector.

10. Despite its importance, it currently can be a fraught process for the primary sector to gain adequate funding to continue this on-going research. Too often the cost (to scientists in terms of time) of generating funding applications that fail is a real impediment.

11. A competitive funding model is the antithesis of what is ideal for science, which thrives on open communication and the sharing of ideas and knowledge. Under this type of model, research institutions are incentivised not to share ideas and knowledge with other institutions.

12. Research that will benefit the industry seems to not be funded because it does not directly target the most recent Government objective. A lot of research work in the sector is ongoing – and funding the continuity of a programme is difficult.

13. There is a strong argument for Central Government to provide base funding for institutions to enable them to do the fundamental science which underpins other more directly applied research. A good example of this is basic soil science, including both soil mapping and the understanding of soil processes.

14. Research funding for the primary sector is also difficult where if funding is applied for by a research entity, they often will only apply for funding that is for the actual science research, not the delivery or application of research on farm. Too often research is developed, and the results are deemed to be "delivered" to industry via a talk at a conference. The pressure has been on industry to provide the funding (or co-funding short fall) to fill the gap for delivery. But the concept of 'line of sight to impact' needs to consider the full delivery to industry.

15. Federated Farmers likes the improved definition of research impact to mean "a change in the economy, society or environment, beyond contribution to knowledge and skills in research

organisations." However, a crucial part of this will be funding the ability to deliver that impact change. Any application for research should have a plan for how the research will be delivered and that cost embedded into the funding. Where the primary sector is involved, key connections with the sector should be involved.

16. The primary sector level of engagement with research that impacts the sector should be early on and involved at each stage in the process. Stakeholder engagement should not just be consultation, but direct and active involvement to ensure that the resulting outcomes are relevant and will have impact.

17. Primary sector funding is also a fraught and competitive space. It can seem like applications have to be 'exciting' to be considered for funding – the 'boring' science that generates benefits is harder and harder to fund, and because its competitive, the temptation in applications is to promise more than can be delivered for the amount requested.

18. As stated above, there is a strong argument for funding research institutions to cover this fundamental science, upon which the more 'exciting' research is often built. The reality is that this component of research (at least) needs to be funded by Central Government.

19. The intention of the Government is to improve the research spend to 2% of GDP (from the current 1.37%). Australia (as comparison) already spends over 2.2%. Research science is the key to our position as a developed nation. It should be prioritised, and it has to include the needs and requirements of the primary sector.

20. The model of research science in the primary sector is a good example of how the boundaries between knowledge and action can be softened. Good connections between science and the primary sector situates the experts within the communities and helps avoid siloed boundaries between on-farm practice and research. This connection also plays a key role in the science-policy interface.

21. This science – policy connection must be robust. Too often different research entities are forced into a highly competitive space for funding – which results in siloed institutions or every funding application requiring grants to develop their 'own' database which isn't connected or aligned with other data – so can't be compared, aligned, or accessed. These inefficiencies impede the sector in making the best improvements it can.

22. Capability development for scientists involved in the agricultural science area is crucial. At university level, students need clarity on what career options and opportunities exist in the primary sector. Tertiary institutions need to have good connections with the primary sector to help facilitate connections and help students with opportunities for career choice. Projects that have worked well have seen connections between university and industry where undergraduate courses involve a level of internship with primary sector agribusiness companies to provide opportunities for further study or career choice. The benefits also include the opportunity for the agribusiness to identify future candidates for employment and helps the universities with an understanding of the research needs of the industry.

23. The Impact of Research position paper in the Executive Summary highlights that "the Government has committed to significantly increasing economy-wide investment in research and development (R&D) to 2% of GDP by 2027 (from 1.37% in 2018). This increases the

imperative to demonstrate the tangible benefits that public research has for society, to maintain the social licence for increases in research funding among other priorities for new spending". Science research will drive our future prosperity and wellbeing – as emphasised by the Green Paper. Social licence is based on trust. Societal awareness and understanding of the benefits of science is a fundamental learning that should be a core part of our curriculum. Too often we are seeing decisions made that are based on politics and not science. We cannot have at this level a need to justify science based on social licence.

24. We have seen from projects working with rural schools and catchment groups that the science support for rural teachers is minimal. Projects that have succeeded are where the rural teachers have close connections with local scientists and industry to help provide professional development and understanding of key science concepts. This is a key understanding that will help the wider sector. This is especially important when scientific issues or questions are debated in the media. The involvement of science projects and programmes with schools brings an intergenerational and integrated level of learning that helps whole communities engage and understand science. Fundamental understanding of the importance research science must begin at our earliest stages – and our support must be inclusive.

25. Gene technology is also a priority area for investment. Government should consider reducing the current barriers to the development and use of gene editing and genetically modified organisms in New Zealand, particularly for improving water quality, reducing emissions, enhancing human health, and animal pest control. Other examples where this could be explored include pests and diseases (e.g., facial eczema). With our warming climate, facial eczema is potentially becoming more prevalent across larger areas of New Zealand.

26. With advances in gene editing, it is increasingly harder to determine what changes gene-editing has occurred on products/organism's entering the country. Our current barriers are not reflective of how much science and technology has moved on since they were put in place.

27. Concerns in respect of gene technology should be addressed head on, with a robust, justified, and transparent national regulatory process. Producers and consumers should be empowered to make an informed choice about the regulated use of the technology. The opportunity cost of the current prohibitively high barriers to gene technology will continue to grow as the technology matures and will represent an increasingly large cost to the economy and environment of New Zealand.

28. New Zealand is a world leader in animal production technologies – especially in terms of producing food with low agricultural emissions. Where there are identified opportunities for improvement that will benefit the sector and New Zealand as a whole, there should be clear and transparent processes to help expedite those opportunities. For example, where the methane-reduction tool Bovaer® has been identified and tested by science as a viable tool for reducing emissions – processes need to be in place to ensure that the government is supporting those opportunities.

29. The significant environmental challenges highlighted by the Minister need core science funding support. This research needs to be transparent (i.e., available), robust, and peer reviewed. Data is being collected across the country by territorial authorities and used for informing policy decisions at a regional level. Too often this research data and its analysis is not collected or

reported an any transparent way – but the ramifications of its use have serious impacts (cost) on the sector. This use of collected data may not fall under the MBIE Research Science and Innovation remit, but it is still data collection and analysis, and it is used and purported as science.

30. The proposed 2% of GDP level of R&D spend is proposed to be more sourced from the private sector. We are concerned that this goal will not be able to be met, especially given New Zealand's preponderance of small to medium sized enterprises and the composition of its economy. The cost of research with a CRI (for example) is already a serious impediment to private investment, especially for SMEs. Therefore, the 2% goal in funding should be met by increasing the Government contribution – not putting pressure on the private sector. This puts serious pressure and risk on the primary sector where the needs for research are the greatest (e.g., environment challenges). The incentives for private sector investment would have to be more aligned along co-funding or in-kind support – the requirement for direct cash investment in research is a serious impediment.

31. Research priority setting is generally a centralised process – but from the primary sector view, the process needs to ensure that decisions are monitored and checked. Also, that there are no overlaps in funding, or gaps. The system needs to ensure that there is enough flexibility to adapt to emerging problems, and that opportunities are recognised.

32. Primary sector engagement as a key stakeholder in research priorities that impact the sector is critical. The primary sector as a stakeholder should include having those responsibility and accountability mechanisms in the operation of research priorities.

33. The primary sector is reliant on science research in NZ – as it directly impacts the economic, environment, and social aspects of the sector. The research priorities should consider the needs and aspirations of the primary sector – and as for other stakeholders, ensure that the research is forward looking and using the best techniques and processes available. For relevant research that will make changes in the sector, the sector needs to be actively involved through the process. The sector should not just be involved in a consultation process – but their research needs, and priorities identified. Science research needs for the primary sector that include analysis of the priorities – in terms of impact assessment (for example, value to the sector (or the wider NZ) in terms of improvement). Including stakeholder representation early on and at all levels means that the research outcomes are truly reflective of the needs of the sector.

Conclusion

Federated Farmers of New Zealand thanks the Ministry of Business, Innovation and Employment for the Environment for the opportunity to provide feedback on this Discussion Document. We look forward to ongoing dialogue about the proposals and continuing to work constructively with the government on the best way forward.