BEFORE THE FRESHWATER COMMISSION

UNDER	the Resource Management Act 1991 (the **Act** or **RMA**)
IN THE MATTER	of an original submission on the Proposed Regional Policy Statement for Otago 2021 (**PRPS**)
BETWEEN	**OTAGO WATER RESOURCE USER GROUP** **Submitter FPI043** **FEDERATED FARMERS NZ INC** **Submitter FPI026 and FSFPI026** **DAIRY NZ** **Submitter FPI024 and FSFPI024**
AND	**OTAGO REGIONAL COUNCIL** **Local Authority**

EVIDENCE IN CHIEF OF BENJAMIN ROBERT PATTERSON: ADDITIONAL EVIDENCE FOR FRESHWATER PARTS

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EVIDENCE IN CHIEF OF BENJAMIN ROBERT PATTERSON: ADDITIONAL EVIDENCE FOR FRESHWATER PARTS

1. This brief of evidence is the same as the brief filed in relation to the Otago Regional Policy Statement 2021 - non freshwater parts. New evidence not previously provided to the non-freshwater panel is added in text that is shaded grey for ease of identification.

2. I have been given a copy of the Environment Courts code of conduct for expert witnesses. I have reviewed that document and confirm that this evidence has been prepared in accordance with it and that all opinions that I offer in this evidence are within my expertise. I have not omitted to refer to any relevant document or evidence except as expressly stated. I agree to comply with the code and in particular to assist the Commissions in resolving matters that are within my expertise.

Introduction

3. My full name is Benjamin Robert Patterson. I am known professionally as Benje Patterson.

4. I am a self-employed economist, who specialises in regional economics.

5. I have a high degree of familiarity with Otago's economy. For example, I am an economic advisor to the Otago Regional Economic Development (ORED) working group that considers economic development across all parts of Otago and have previously been contracted as an advisor to the Otago Regional Skills Leadership Group. In the primary sector, I have recent involvement in projects that consider food waste, primary sector labour demand, and the economic and social impacts of primary sector activity within water catchments.

6. I have worked professionally as an economist for more than 10 years. For the last three years I have been self-employed. Immediately prior

to that I was Senior Economist, Head Regions for a Wellington-based economic consultancy (Infometrics).

7. I am a member and research partner of Economic Development New Zealand, which is the industry body for economic development professionals in New Zealand.

8. I hold a Master of Arts (Economics and Politics) from the University of Freiburg, Germany, as well as a Postgraduate Diploma in Economics and a Bachelor of Commerce (majoring in Economics and Finance) from the University of Otago.

9. I have been asked by the Otago Water Resource User Group (OWRUG), Federated Farmers of New Zealand and DairyNZ to prepare evidence for these proceedings.

10. I confirm I have read the 'Code of Conduct for Expert Witnesses' contained in the Environment Court Practice Note 2014. I agree to comply with this Code of Conduct. Unless I state otherwise, all evidence in this written statement is within my sphere of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express. I have outlined all data, information, facts, and assumptions made in forming my opinions.

Scope of evidence

11. I have been asked to provide evidence in relation to the proposed Otago Regional Policy Statement 2021.

12. The focus of my analysis is to provide context regarding the contribution of the food and fibre sector to Otago's economy and labour market. I have considered both direct contributions, as well as flow-on effects.

13. I have also identified where food and fibre employment sits across Otago's five territorial authorities (Clutha, Central Otago, Dunedin, Queenstown-Lakes, Waitaki).

14. This analysis has been supplemented with comments regarding the context for change in water regulations that affect the food and fibre sector. These comments focus on local economic and social risks as the sector adapts, as well as the need to be cognisant of the cumulative effects of changes the sector is already facing as a result of other environmental regulatory processes.

15. In preparing this evidence I have also considered the evidence prepared by DairyNZ and Andrew Burtt who have prepared briefs of evidence relating to economic matters associated with the Dairy sector and Beef and Lamb.

Summary of key points

16. Food and fibre production and processing in Otago is estimated to directly account for 9.6% of Otago's GDP.

17. The flow-on effects into economic activity in other industries due to food and fibre production is estimated to support as much as another 6.0% of Otago's GDP.

18. There were 15,253 jobs directly within the food and fibre sector in Otago in the March 2021 year, with as many as another 8,985 jobs supported by the flow-on effects of food and fibre production. These job estimates include both employees and self-employed.

19. The level of direct employment in the sector is equivalent to 11.8% all jobs across Otago, while the jobs supported by the flow-on effects of food and fibre production are equivalent to as many as another 7.0% of jobs in Central Otago.

20. Within Otago's territorial authorities, direct food and fibre employment accounts for almost half of all jobs in Clutha (46.9%), while the sector accounts for 29.7% and 23.9% of all employment in Waitaki and Central Otago respectively. In comparison, the sector directly accounts for 4.3% of jobs in Queenstown-Lakes and 4.2% of jobs in Dunedin City.

21. Most of the employment in Waitaki and Clutha is orientated towards pastoral farming (dairy and sheep/beef), while employment in Central Otago is most heavily focussed on horticulture, with pastoral farming in Central Otago playing a supporting role.

22. The high shares of employment within some districts in Otago that is supported by food and fibre employment means that household incomes in some places are extremely vulnerable to any changes to employment conditions and profitability within the food and fibre sector.

23. Adapting to new water regulations is inevitable for the food and fibre sector, but it is important to highlight that a body of research shows the costs of adjustment may be significant.

24. The research suggests that the costs of adjusting to new water regulations tend to fall unevenly on different types of farming systems and geographically within the region. Waitaki and Clutha are likely to be hardest hit, followed by Central Otago. The effects in Dunedin and Queenstown-Lakes are likely to be less because the sector is smaller, relatively speaking.

25. Other research has cautioned that the speed of the required adjustment to water regulations will influence the magnitude and persistence of economic costs. If adjustments are permitted to occur over a longer time period then there are more opportunities to invest in the necessary changes in a way that poses smaller and less persistent costs on the local economy.

26. Adaptation to meet any regulatory change also requires access to capital to make the necessary investments to adjust farming models. Any access to capital from banks to support adaptations will be reliant on the underlying value of farming assets, which can be negatively affected by regulatory changes.

27. The costs and complexity of the food and fibre sector adapting to new water regulations cannot and should not be considered in isolation

from other environmental regulations (eg. farm management plans, and regulations pertaining to methane and carbon emissions). The costs of change can accumulate between regulations and there is also some element of path dependency to these additional costs. There also needs to be alignment between how regulations are implemented to ensure solutions to one regulation do not end up being counterproductive to another – for example, pivot irrigation is great for water pollution control, but increases production and therefore emissions.

28. Given that the development of the new Regional Policy Statement (and subsequent Regional Plan) is happening at the same time as many other regulatory change processes, it is important to be cognisant of concurrent change processes in its implementation. In particular, how farmers adjust and over what time period.

29. Throughout this process, it is important to consider that those affected are not just the farm owners, but also households who directly and indirectly rely on the food and fibre sector for employment. Wages in the food and fibre sector are skewed towards lower and middle-income earners than the rest of the Otago economy. People on low incomes are less resilient to changes in labour market conditions than high income earners, who typically have greater levels of net wealth to act as a buffer during times of transition between jobs.

DETAILED ANALYSIS

Defining the food and fibre sector

30. The definition of the food and fibre sector used in this brief of evidence is consistent with that used by the Ministry for Primary Industries and the Primary Sector Council. In a 2018 report[1], the food and fibre sector was defined as including primary sector production industries (other than mining) and related processing industries. It

[1] Dalziel, Paul, Caroline Saunders and John Saunders (2018). The New Zealand Food and Fibre Sector: A Situational Analysis. Client report prepared for the Primary Sector Council. Lincoln University: Agribusiness and Economics Research Unit.

also includes service industries along the value chain from producer to final consumer, including providers of transport, storage, distribution, marketing, and sales (so-called multiplier effects).

31. In practical terms, 'primary sector production industries (other than mining)' is best described by the ANZSIC06 industry classification entitled 'agriculture, forestry, and fishing', which includes:

    (a) Horticulture & Fruit Growing

    (b) Sheep, Beef Cattle & Grain Farming

    (c) Dairy Cattle Farming

    (d) Poultry, Deer & Other Livestock Farming

    (e) Forestry & Logging

    (f) Fishing & Aquaculture

    (g) Agriculture, Forestry & Fishing Support Services & Hunting.

Direct economic value-added (GDP) from food and fibre production and processing

32. Direct economic value-added (GDP) from food and fibre has been estimated from both a production (e.g. at a farm or orchard level) and a processing (e.g. a pack house or dairy factory) perspective. These two perspectives are also combined to give a total estimate of direct economic activity across the sector.

33. The production of food and fibre raw products at a farm level is estimated to have directly contributed $1.03 billion to Otago's GDP (economic value-added) across the March 2021 year. This statistic is derived from calculations using Infometrics 2021 Annual Economic Profile ('the Profile')[2].

[2] The Profile is a data product that has been commissioned from Infometrics and made publicly available by the councils of Clutha, Central Otago, Dunedin, Queenstown-Lakes, and Waitaki. Calculations using data in the profile can inform a detailed industry level understanding of economic activity and employment trends. It is important to note that Infometrics' definition of Otago is based on the

34. In addition to this $1.03 billion of GDP from food and fibre production at a farm level, there is also value added by further processing food and fibre products for end consumer markets. The economic value-added from food and fibre processing in Otago during the March 2021 year was approximately $365.3 million of GDP, according to calculations from the Infometrics Profile.

35. The summation of estimates within points 33 and **Error! Reference s ource not found.** suggests a total direct contribution of food and fibre production and processing of $1.39 billion to GDP during the March 2021 year.

36. As a proportion of GDP, this estimate of the direct economic value-added effects of food and fibre production and processing represents 9.6% of Otago's total GDP.

37. Otago's reliance on food and fibre is slightly higher than the rest of New Zealand. Food and fibre production and processing's share of GDP at a New Zealand level is 9.3% of GDP. Having a larger share of Otago's economy reliant on food and fibre means that the region is more vulnerable to any external changes that affect primary sector operations.

38. Over the 10 years to March 2021, GDP of food and fibre production and processing across Otago grew by an average of 1.7% per annum, compared to average GDP growth of 2.5% per annum across the Otago economy as a whole.

Flow-on GDP effects (multiplier effects)

39. Alongside the direct economic effects from the food and fibre sector, there are also broader flow-on effects that accrue to other industries.

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summation of the five territorial authorities across Otago (Clutha, Central Otago, Dunedin, Queenstown-Lakes, and Waitaki), which can lead to a slight discrepancy against Otago Regional Council boundaries because a small part of Waitaki falls in Canterbury region. Practically speaking this discrepancy is not material to any regional economic evidence presented as it only accounts for <3% of food and fibre employment across Otago.

These are so-called multiplier effects and accrue because of two reasons:

(a) Value added from the procurement of other goods and services as inputs into the food and fibre sector (known as indirect effects). For example, accessing accountancy and legal services, maintenance of machinery, temporarily contracting labour from labour supply agencies, etc.

(b) The recirculation of wages earned by workers in the food and fibre sector back into other industries within the district (known as induced or earnings effects). For example, an orchard worker spending some of their wages on retail or hospitality within the district.

40. Using economic multipliers which I have sourced from Infometrics, I calculate that food and fibre production in Otago supported up to $866.4 million of flow-on GDP effects across both indirect and earnings channels in the March 2021 year[3]. The use of economic multipliers from Infometrics ensures my calculations of flow-on effects draw on a consistent dataset to the direct economic effects from production outlined in point 33. This level of flow-on economic effects is equivalent to 6.0% of Otago's GDP.

41. My estimate in the previous point should be taken as a theoretical maximum of additional multiplier effects from food and fibre production, because in the absence of the sector, some of the resources that are benefiting could be applied to other uses. However, the redeployment of these resources would likely occur in a less productive manner than currently occurs, otherwise they would have already been focussed on servicing demand for other sectors or elsewhere in New Zealand.

[3] These economic multipliers are specific for Otago and factor in the differing multiplier effects of sub-parts of the food and fibre sector. For example, sheep and beef tends to have a smaller multiplier than dairy.

42. The flow-on effects of processing in the sector have not been estimated to avoid double-counting. Double-counting would occur because the key inputs into food and fibre processing are the raw products from food and fibre production at a farm level. These farm level production GDP effects were already directly captured in point 33 and so would be double counted if they were also considered to be an indirect GDP effect as a result of processing.

Employment in the food and fibre sector

43. Direct employment in the food and fibre sector, encompassing both production and processing activity, is estimated to have accounted for 15,253 filled jobs across Otago in the March 2021 year, according to calculations from the Infometrics Profile. Of this total direct employment, 10,347 jobs were in the production side of the sector, while 4,906 jobs were associated with processing of food and fibre for end markets.

44. Direct employment across the food and fibre sector is equivalent to 11.8% of total filled jobs across Otago. By comparison, the sector's share of employment at a national level is 10.1% of total filled jobs in New Zealand.

45. Direct employment across the food and fibre sector grew by an average of 0.4% per annum over the 10 years to March 2021, compared to 1.8% per annum growth in job numbers across Otago as a whole.

46. Using multiplier analysis, similar to that outlined in points **Error! R eference source not found.** to 42, I estimate that the flow-on employment effects in other industries as a result of food and fibre production could have been as many as 8,985 filled jobs in the March 2021 year. These flow-on employment effects are equivalent to 7.0% of all jobs in Otago.

Employment by types of food and fibre

47. It is possible to segment employment within food and fibre production into various sub-industries. This gives an idea of which types of food and fibre farming systems are most important for employment in the region.

48. The following table shows that the largest contributors to food and fibre production employment are sheep and beef (31.3% of jobs), followed by dairy farming (21.1%), agricultural support services (19.9%), and horticulture and fruit growing (17.7%).

Otago food and fibre production employment, source: Infometrics (2021)	
Sub-industry	**Share of total**
Sheep, Beef Cattle & Grain Farming	31.3%
Dairy Cattle Farming	21.2%
Agricultural Support Services & Hunting	19.9%
Horticulture & Fruit Growing	17.7%
Poultry, Deer & Other Livestock Farming	4.7%
Forestry & Logging	3.7%
Fishing & Aquaculture	1.6%
Total food and fibre production employment	**100.0%**

Location of employment

49. Drawing on more detailed geographical data, it is possible to segment direct employment across the food and fibre sector into different parts of Otago (to a territorial authority level of detail).

50. The following table shows that Clutha has the highest number of food and fibre jobs in Otago, with the district accounting for 4,405 of all direct food and fibre jobs in Otago during the March 2021 year. Both Waitaki and Central Otago are close behind, with 3,446 and 3,430 jobs respectively.

Locations of food and fibre employment within Otago, source: Infometrics (2021)		
Territorial authority	**Jobs**	**Share of Otago total**
Clutha District	4,405	28.9%
Waitaki District	3,446	22.6%
Central Otago District	3,430	22.5%
Dunedin City	2,722	17.8%
Queenstown-Lakes District	1,250	8.2%

Total direct food and fibre employment in Otago	**15,253**	**100.0%**

51. The level of food and fibre employment in Clutha, Waitaki, and Central Otago is pivotally important to overall employment prospects in these districts. The following tables shows that food and fibre employment accounts for almost half of all jobs in Clutha (46.9%), while the sector accounts for 29.7% and 23.9% of all employment in Waitaki and Central Otago respectively. Food and fibre employment in Queenstown-Lakes (4.3%) and Dunedin (4.2%) accounts for a lower share of these area's total employment. As a point of comparison, food and fibre employment accounts for 11.8% of jobs in Otago.

Food and fibre's share of employment in each territorial authority, source: Infometrics (2021)	
Territorial authority	**Sector's share of total employment in each area**
Clutha District	46.9%
Waitaki District	29.7%
Central Otago District	23.9%
Queenstown-Lakes District	4.3%
Dunedin City	4.2%
Otago Region	**11.8%**

52. Most of the employment in Waitaki and Clutha is orientated towards pastoral farming (dairy and sheep/beef), while employment in Central Otago is most heavily focussed on horticulture, with pastoral farming in Central Otago playing a supporting role.

Each sub-industry's share of food and fibre production jobs in a territorial authority, source: Infometrics (2021)						
Sub-industry	Clutha	Waitaki District	Central Otago	Queenstown-Lakes	Dunedin City	**Otago**
Sheep, Beef Cattle & Grain Farming	40.1%	30.9%	26.2%	29.6%	25.9%	**31.3%**
Dairy Cattle Farming	32.8%	40.0%	3.3%	8.0%	16.7%	**21.2%**

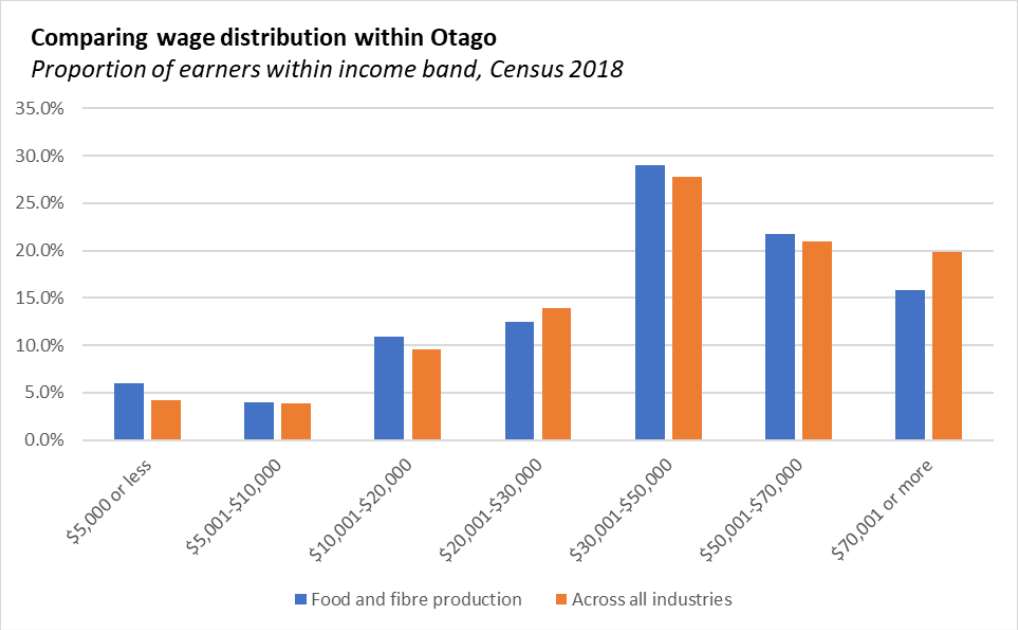
Agric Support Services & Hunting	18.0%	13.8%	25.8%	19.8%	19.6%	**19.9%**
Forestry & Logging	5.6%	1.2%	1.1%	1.5%	9.7%	**3.7%**
Horticulture & Fruit Growing	1.9%	7.0%	41.4%	28.4%	8.3%	**17.7%**
Poultry, Deer & Other	1.6%	4.3%	2.0%	9.3%	14.4%	**4.7%**
Fishing & Aquaculture	0.0%	2.8%	0.1%	3.3%	5.3%	**1.6%**
Total	100.0%	100.0%	100.0%	100.0%	100.0%	**100.0%**

Wages and resilience of food and fibre employees

53. The high shares of employment within some districts in Otago that is supported by food and fibre employment means that household incomes in some places are extremely vulnerable to any changes to employment conditions within the food and fibre sector.

54. Census 2018 also showed that wages in the food and fibre sector are skewed towards lower and middle-income earners compared to the rest of the Otago economy.

55. According to Census 2018, 20.9% of usually resident agriculture, forestry and fishing (food and fibre production) employees within Otago earned less than $20,000 per annum, compared to 19.3% across all sectors in Otago. A further 50.8% of Otago employees in the sector earned between $30,000 to $50,000 per annum, compared to 48.1% across all sectors. Just 15.8% of agriculture, forestry and fishing (food and fibre production) employees within Otago earned more than $70,000 per annum, compared to 20.5% across all sectors.



56. People on low incomes are less resilient to changes in labour market conditions than high income earners, who typically have greater levels of net wealth to act as a buffer during times of transition between jobs. A 2018 study4 by the New Zealand Work Research Institute, AUT for the Ministry of Business, Innovation and Employment found that lower income earners are more likely to face shorter employment spells than median income earners, and if low income earners ever go onto a benefit then the average duration over which they draw a benefit is longer than for median income earners. As evidence of low income earners' smaller net wealth levels, Census 2018 data highlights that just 48% of people usually resident in Otago, who earned $30,000 to $50,000 per annum, owned their own home (or held it in a family trust), compared to 68% of people earning more than $50,000 per annum.

General considerations for the food and fibre sector of adapting to water regulations

57. The food and fibre sector knows that its status quo manner of operating will not be able to persist, and that adapting to new water regulations is inevitable. However, it is important to highlight that a

[4] See 'Low pay in NZ', published January 2018, available here: https://www.mbie.govt.nz/assets/c92012e10c/low-pay-in-nz-january-2018.pdf

body of research shows the costs of adjustment may be significant. The research also demonstrates that these adjustment costs are likely to be spread unevenly across different farming system types, and that the speed of the required adjustment will influence the magnitude and persistence of effects.

58. For example, a peer reviewed 2020 report by the New Zealand Institute of Economic Research5 highlighted that the cost of adaptation to more stringent water quality regulations under the nationwide Essential Freshwater Package could result in an impairment of $208 to $568 million to New Zealand's GDP by 2030.

59. The NZIER report highlighted that these costs would be spread unevenly across New Zealand and that areas with recent dairy intensification would see the largest changes in economic activity. The report showed that Otago would fare better economically from adapting to more stringent water quality regulations than many other regions, but this result would be reliant on a movement of resources out of dairy farming and into arable farming.

60. A report by Infometrics6 into the costs on the Ashburton economy of adjusting to National Environmental Standards for Freshwater supported the general sentiment of the NZIER report. The Infometrics report found that the highest cost burdens in Ashburton would fall on the dairy, and sheep and beef sectors, with these falls partly offset by growth in forestry.

61. The Infometrics report also commented on the speed of adjustment, saying that the effects are "are highly sensitive to the length of time over which the land use changes take place. A transition over an extended period of time will give Ashburton's residents and

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[5] NZIER (2020), The economic effects of water quality proposals, available here: https://environment.govt.nz/assets/Publications/Files/economic-effects-of-water-quality-proposals-modelling-scenarios.pdf

[6] Infometrics (2021), Economic impact of freshwater environmental standards in Ashburton District, available here: https://www.ashburtondc.govt.nz/__data/assets/pdf_file/0022/44581/Freshwater-Nitrates-Economic-impact-report-Final_v1.pdf

businesses – their economy – a chance to adapt. The loss of jobs and reduction in farm values does present an opportunity for different industries to expand using the resources freed up by the changes. We would not expect the negative effects to persist over the long term; however, they may persist for several years if land use change is rapid."

Regional considerations for the food and fibre sector of adapting to water regulations

62. In the local Otago context, recent research was commissioned by Otago Regional Council from AbacusBio in 2021 into the financial viability of farms in Manuherekia under different minimum flow regimes. The research found that dairy and sheep and beef farms are most financially vulnerable to changes to minimum flows that constrain water takes7.

63. I then undertook an analysis of the AbacusBio report, to assess the macroeconomic consequences of AbacusBio's farm level financial modelling. This report found that AbacusBio's farm-level data would translate into a 5.2% impairment to Central Otago's GDP if minimum flows in the Manuherekia were raised from a status quo of around 820 l/s to a minimum flow of 1,500 l/s. In the event that minimum flows were increased to 3,000 l/s then the impairment to Central Otago's GDP would be 19%.

64. It is worth noting that the report8 also cautioned that the GDP impairment might ultimately prove smaller than what was implied by the AbacusBio modelling if Otago Regional Council were to undertake more work to understand how there could be land use changes.

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[7] AbacusBio (2021), Manuherikia Enterprise Model Methodology, available here: https://yoursay.orc.govt.nz/68998/widgets/338966/documents/203788#:~:text=The%20enterprise%20model%20is%20a,monthly%20feed%20surplus%20or%20deficit.

[8] Benje Patterson (2021), Economic impacts of minimum flows in the Manuherikia Catchment, available here: https://www.codc.govt.nz/repository/libraries/id:2apsqkk8g1cxbyoqohn0/hierarchy/services/economic-development/documents/Economic%20impacts%20of%20minimum%20flows%20in%20the%20Manuherikia_V5.pdf

These land use changes could occur as "…an adaptation by farmers to minimise the costs of a new water regime and find an economically higher yielding model." This adaptation by farmers, however, would take time and require access to capital to make the necessary investments to adjust farming models.

65. Any access to capital to support adaptations will be reliant on the underlying value of farming assets. A peer review of the AbacusBio report by Compass Agribusiness highlighted that changes to water availability poses risks to underlying land values. Compass Agribusiness said "from a banking perspective, it is critical to understand the impact of the minimum flows on land value, as reduced cashflows and reduction in asset value could potentially lead to businesses becoming insolvent or adjustments to business risk ratings, which increases their interest rate".

66. Being cognisant of this potential negative relationship between water regulations and agricultural land values, and how that in turn can constrain bank lending is fundamentally important. Ultimately anything that materially limits the sectors' access to capital could undermine the sectors' ability to adjust to more stringent regulations.

A broader context for change

67. Changes to water regulations are not the only looming change that the food and fibre sector will have to navigate. The sector will also need to respond to imminent changes in other types of environmental and emissions regulations, while at the same time navigating evolving expectations from consumers regarding businesses' environmental impacts. Already some 13% of New Zealanders9 claim that choosing brands that operates in a sustainable manner is the most important factor in their purchase decisions.

[9] Sustainable Business Council (2019), How New Zealanders assess the sustainability of brands, available at: https://www.sbc.org.nz/__data/assets/pdf_file/0004/183208/SBC_Porter-Novelli_Perceptive_In-good-company_Report_November-2019-for-web.pdf

68. The costs and complexity of the food and fibre sector adapting to new water regulations cannot and should not be considered in isolation from other looming environmental regulations (eg. farm management plans, and regulations pertaining to methane and carbon emissions). The costs of change can accumulate between regulations and there is also some element of path dependency to these additional costs. This point was highlighted by Dr Adolf Stroombergen in a peer review10 of the NZIER report cited earlier in this evidence about the costs of adjusting to the Essential Freshwater package. Dr Stroombergen said that "GHF [greenhouse gas] mitigation policy has a nonlinear interaction with water quality policies. This means that the incremental effect of each depends upon the order in which they are introduced". Dr Stroombergen also added that "…it would be worthwhile examining the interaction between the EFW [Essential Freshwater] packages and GHG mitigation policies".

69. Aside from other domestic regulatory considerations, it is also worth noting that there are regulatory changes internationally that may also have an effect on New Zealand's food and fibre sector. For example, the NZ-EU Free Trade Agreement (FTA) "contains ambitious outcomes on climate action and the Paris Agreement, including making these commitments legally binding and enforceable in the FTA".

70. Given that the development of the new Regional Policy Statement (and subsequent Regional Plan) is happening at the same time as many other regulatory change processes, it is important it be cognisant of concurrent change processes in its implementation. In particularly, the policy should be mindful of how farmers adjust and over what time period. Evidence in points 61 and 64 highlighted that if adjustments are permitted to occur over a longer time period then there are more opportunities to invest in the necessary changes in a

[10] Adolf Stroombergen (2020), High-level Review of Essential Freshwater Economic Impact Reports: NZIER Modelling, available here: https://environment.govt.nz/assets/Publications/Files/infometrics-review-NZIER-modelling.pdf

way that poses smaller and less persistent costs on the local economy. Points 65 and 66 added weight to this argument cautioning that adjustments also rely on access to capital from banks, which can be limited if the regulatory change process is implemented in a manner that greatly impairs land values.

71. But however the adjustment process occurs, we must be mindful that cost burdens will fall unevenly on different types of farming systems and geographically within the region. Research presented in points 59 to 62 showed that livestock farming systems (dairy, and sheep and beef) are likely to face the highest cost burden, while horticulture and arable farming systems will be less affected. Combining this finding, with the structure of the food and fibre sector within Otago (points **Error! Reference source not found.** to 51), suggests that Waitaki a nd Clutha are likely to be hardest hit, followed by Central Otago. The effects in Dunedin and Queenstown-Lakes will be less as a whole, but there will still be places within those territorial authorities where the effects are more acute, such as across the Taieri Plains.

72. Aside from the costs of adapting to the myriad of new regulations, the complexity of understanding how to change is a burden for individual farm owners. The burden of adjustment and compliance can be confronting, and not all options for change are equal. Individual farmers need help to navigate their way to meet their regulatory requirements in the best possible manner. The Ministry of Primary Industries has acknowledged this gap and invested an initial $545,000 to support Otago Catchment Communities with ‘extension services’ support to enable better on-farm practices11. But a commitment to ongoing support is needed – this need has been highlighted in the draft Waitaki Economic Development Strategy12 which has identified ‘farmer extension programmes’ as a key action.

[11] More on the MPI funding is available here: https://www.mpi.govt.nz/funding-rural-support/farming-funds-and-programmes/productive-and-sustainable-land-use/extension-services-programme-for-farmers/

[12] Draft strategy (7 June 2022) is available here: https://www.waitaki.govt.nz/files/assets/public/files/our-council/plans-reports-and-strategies/our-strategies/draft-economic-development-strategy-june-2022.pdf

73. Finally, throughout this process, it is important to consider that those affected are not just the farm owners, but also households who rely on the food and fibre sector for employment. Point 51 showed that food and fibre employment is a pivotally important contributor to total employment in Clutha, Waitaki, and Central Otago. Points 53 to 56 also highlighted that food and fibre sector employees are particularly vulnerable to change, as they tend to earn less than workers in other industries and are less likely to be homeowners.

B Patterson

Date: 28 June 2023