

Summary of the BakerAg research on Government's Essential Freshwater Proposals: *Economic Evaluation of the Government's Proposed 'Action for Healthy Waterways' Policy Package*



Summary

Beef + Lamb New Zealand commissioned rural consultancy BakerAg firm to undertake a comprehensive analysis of the Government's proposed freshwater policies.

BakerAg visited four different types of sheep and beef farms that have already achieved outstanding environmental outcomes and used on farm analysis and Geographic Information System mapping to calculate what each farmer would need to do to meet the proposed policies, and how much these changes would cost.

The true financial impact of the regulations proposed in the *Action for Healthy Waterways* consultation documents are considerably higher than those outlined in the MfE consultation document.

The major costs arise from the proposed fencing rules, sediment control, and the loss of farm system and land use flexibility created by the grand-parenting provisions in the proposals which restrict a farmer's ability to adapt their farming system and significantly impact on income opportunities, even where the farm is operating within environmental limits.

BakerAg estimated the following costs:

- Capital costs of compliance per sheep and beef farm varying from \$185,000 (mixed cropping farm) to \$680,000 (hill country sheep and beef farm).
- Annual costs of compliance ranging from \$35,000 to \$80,000. These represent 5.4% to 30% of these properties respective earnings before interest, tax, rent and manager's salary (EBITRm).
- Annual opportunity costs of "loss of future income" ranging from \$95,000 to \$184,000.

Capital Costs

The capital costs largely arise from fencing requirements of waterways and wetlands; additional water reticulation; erosion control; and initial consulting costs to do a certified farm plan and essential freshwater module, soil testing and OVERSEER nutrient budget.

The greatest capital cost, by far, is from fencing requirements. These arise from both the 360 regulation and requirements under the freshwater module to the farm plan (FW-FP).

The 360 regulations require fencing of "low slope" land (i.e. land with a slope of less than five degrees).

For "non-low slope land" (i.e. land slope greater than five degrees), the proposals have fencing requirements if the farm has a "carrying" capacity of 14 stock units (su) per hectare **and** per paddock carrying capacity of 18su per hectare.

While most extensive farming systems including hill country farming have stocking rates below 14su/ha/farm, the requirement to also meet the 18su/ha/paddock requirement means that many hill country farmers will be required to also fence their streams when stock are rotationally grazed. The fencing costs for sheep and beef farms on low-land would be less as many farmers have already fenced many parts of their property.

The FW-FP goes much further than the 360 regulations and requires an assessment and consideration of excluding stock from waterbodies as well as the establishment of setback distances from waterbodies. The definitions of stock and waterbodies are broad. BakerAg assessed the implications of the FM-FP using expert judgement in the field, and determined that the way the current policies are written would require sheep and beef farmers to fence a significant number of their waterways. It is likely that this was not the intent of the proposed policies (given statements in the consultation documents), however implementation of the rules once finalised will be as the rules are written irrespective of their original intent.

BakerAg found the greatest fencing/capital costs would fall on extensive hill country farms and that this would deliver minimal environmental improvements. It noted that the main environmental impacts on hill country properties is the overland flow of sediment and pathogens into waterways. BakerAg notes that the most effective way to manage these risks is through identification and management of critical source areas through a tailored Farm Environment Plan, rather than blanket fencing.

Annual costs

The main annual costs BakerAg identified include on-going fencing maintenance; implementation of annual actions to mitigate contaminant losses under the freshwater module; OVERSEER updates; auditor costs for the freshwater module; consents for winter grazing; and on-going water reticulation costs. Annual costs ranged from between \$35,000 to \$80,000. These represent 5.4% to 30% of these properties respective earnings before interest, tax, rent and manager's salary (EBITRm). BakerAg stated that annual costs over 10% of the farms EBITR are unsustainable and are likely to put farms out of business.

Impacts on future income from the loss of flexibility in farming systems

BakerAg assessed the impact on these case study farms which result from the proposed grandparenting provisions in the Freshwater Module; land-use change constraints and restrictions on hill country cropping, which all mean that low-emitting farmers will have no ability to change their farming systems or increase any of their modelled on-farm nitrogen, phosphorous or sediment emissions, even by a small amount. This includes adjusting stocking rates, policies, inputs or changing land use.

The cumulative impact of this suite of proposals on future income results arises from two main areas:

1. The inability of farms to change their stocking policies or farming systems to meet the costs of increasing regulation such as stock exclusion; and

2. The loss of future income opportunity in particular for low nitrogen emitting farms which through the proposals are held to their low baseline rates (7kgN/ha/yr to 18kgN/ha/yr)¹.

BakerAg calculates the lost income costs to be in the range of \$95,000 to \$184,000, for these farms even where the proposed increase in nitrogen emissions is small, and is irrespective of whether or not their waterbodies are impacted by nitrogen.

Flexibility and the ability to adapt and innovate has been an integral part of the resilience of the sector to date and this inability to change will significantly impact on farmers' ability to pay for up-front capital costs and annual costs.

Table 1: Summary* of the impacts of the “Action for Healthy Waterways” policy package on four case study farms

Farm	Effective Ha	Description	Up front capital costs	Kilometres of fencing (Km)	Annual costs	Annual costs per effective Ha	% Increase in farm working costs per effective Ha	Nitrogen (N) leaching kg N/Ha/Yr	Phosphorous (P) loss kg P/Ha/Yr	Annual opportunity costs or “Loss of future income”	Annual lost income from 5m stock exclusion set backs
A	622	Hill country sheep & beef breeding and semi finishing	\$643,508	35	\$79,514	\$128	21%	11 (2019)	0.7 (2019)	NC	\$18,389
B	819	Hill country sheep & beef breeding and finishing	\$566,712	27	\$72,468	\$88	14%	18 (2018)	0.7 (2018)	\$95,000	\$12,318
C	655	Mixed cropping, bull and lamb finishing	\$185,350	16	\$35,337	\$54	8%	17 (2018)	0.3 (2018)	\$117,520	\$17,415
D	900	Hill country sheep & beef breeding and finishing	\$680,485	24	\$80,304	\$89	29%	7 (2016)	1.9 (2016)	\$184,195	\$6,408

* A full explanation and calculations are in the body of the report and in appendix 2 to 5. NC: Not calculated

Conclusion

BakerAg’s estimated capital, operational, and opportunity costs for a hill country sheep and beef farm over 10 years ranges from \$2.4 million to \$3.4 million and are significantly higher than the Ministry for the Environment’s estimate of around \$148,500.

The BakerAg analysis is consistent with estimates by Local Government New Zealand, whose analysis forecast a 68 percent reduction in land under sheep and beef farming as a result of the essential freshwater policies.

About BakerAg

BakerAg is a leading independent rural consultancy firm, specialising in a range of services across the primary sector. www.bakerag.co.nz

