Flintoffs Chartered Accountants Ltd

Submitter No:

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Environment Southland Submission

On Behalf of: Ian and Heather Smith, Erne Hill Farming Ltd Waimahaka.

Submitter: Doug Stanley, B Agri Sci (Massey).

My background involves 40 years in agribusiness services, mostly in Southland, with experience as a MAF Farm Advisor, Farm Management Consultant and Registered Valuer (Rural), a decade teaching farming and farm business management at Southland Polytechnic, and lastly 20 plus years as a partner with Flintoffs Chartered Accountants Ltd. I have a good understanding of the science and business of farming.

My submission focuses on two areas:

- **Compliance** Costs 1
- The direct economic impact of the new rules. 2

Compliance Costs

Compliance costs escalate when the rules are not clear, or where the information required for a land owner to correctly assess their compliance obligation is costly or difficult to obtain. These two things open the door to differences in interpretation, and to disputes with the enforcing agency. Disputes are costly for both parties, and destroy the will for a collaborative approach between the enforcing agency and land owner. Hence regardless of what we each think the rules should be, clarity is essential.

The issue of measuring slope, and the concept of mean slope.

Setback rules and cultivation rules refer to slope. And these are the rules that have potentially huge impact on many farming systems. However on rolling country slope is variable in three dimensions, and slope can only be measured for a plane. Hence it isn't clear how to correctly apply a point to point measurement of slope to this type of land. Hence because the acceptable method for the measurement of slope isn't clear, the rule isn't clear.

Suggested Solution.

To mitigate both the compliance cost and the potential for confusion and disputes, we submit that the rules should allow "mean slope" to be substituted for "slope" where mean slope is calculated on a paddock by paddock basis with appropriate software using Google Earth elevation data, or similar commercial variants thereof.

Except that with respect to the cultivation rule, any contiguous sub area of land within the paddock of greater than 1 ha exceeding the 20% cultivation parameter, is treated in isolation.

And that the relevant set back rules also apply to any contiguous sub area of greater than 2 ha.



Example of the map for an individual paddock, anything blue would be less than 20%, any thing yellow / red would be steeper than 20%.

Background:

My surveyor client advises that there are software solutions that process elevation data from Google Earth, and can produce the "mean slope" for an area. Elevation data is taken at varying resolutions, but may be down to 10m point spacing. The software compares the elevation of 3 adjoining points to create a plane, then it calculates the slope of the resulting triangle. These are averaged to arrive at mean slope for an area.

In terms of the 20 degree cultivation rule, small areas that might exceed 20 degrees but are individually minor, could then be included in a cultivated area without breaching the rule. To exclude these small areas can cause practical issues in terms of machine operation on contoured land.

Logically the volume of run off from steep land is proportional to the area of steep land (hence the size of the catchment). Small areas' by definition have a minor effect. So while the measurement of "mean slope" has an averaging effect, that shouldn't compromise the broad objectives of the plan.

The mean slope rule should include the caveat that within the averaged area any contiguous sub area of 1 ha or more with a mean slope exceeding 20 degrees must be excluded from cultivation. It should be practical in most situations to exclude areas of 1 ha or more from cultivation.

Similarly the required setback from waterways can be applied to mean slope where the setback distances apply to contiguous areas of 2 ha or more. The two ha limit allows more leniency and would encourage permanent fencing of setbacks. The leniency here will in effect be no more than minor, because runoff is proportional to catchment size, and 2ha is a small catchment.

Summary of Advantages.

4

- This information can be independently generated by surveyors at reasonable cost. 1
- This will allow a uniform setback from water courses on a paddock by paddock basis, 2 because a single slope figure can be generated for the paddock, subject to the 2ha threshold rule.
- With regard to cultivation, small areas of land (less than 1 ha) that might individually 3 exceed the slope parameter but are minor in the paddock overall, can be allowed for without causing a breach of the rules.

The direct economic impact of the new rules.

On the Smith's Waimahaka dairy farm they usually grow 60ha of winter feed brassica crop. The contour is rolling, and we calculate that the setback rule renders 25% of the property unable to be cultivated for winter crop. Nor is it practical to fence these margins so they can be grazed while the crop is growing, and presumably they shouldn't be grazed in the winter either or that would render the exercise pointless. Hence to provide 60 ha cultivatable on average 80 ha will be needed, with 20 ha required for the setback. The grazing from the 20ha is effectively lost for 12 months, so on this farm that equates to a reduction in carrying capacity of 50 cows, or 10%. Which in turn reduces the value of the farm by 10%.

The effect on financial viability is much more than 10%, because when 10% of revenue is lost at the margin, farm working expenses don't reduce in the same proportion. And overhead expenses don't change at all.

Hence profitability may be affected by as much as 100% in years where payout is under \$6/kg.

Hence while this may at times seem an abstract process for those tasked with creating the rules, have no doubt that the rules will impact on real people, in real farming businesses, and in some cases the rules will cause real hardship.

Write them carefully.

Doug Stanley June 2017

