in the matter of: Hurunui and Waiau River Regional Plan

and: submission in relation to proposed Plan Change 1 to the Hurunui and Waiau River Regional Plan

and: **Hurunui District Landcare Group**
Submitter

Statement of Jansen Travis on behalf of:

Hurunui District Landcare Group

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STATEMENT OF EVIDENCE OF JANSEN JOHN TRAVIS

Introduction

1 My name is Jansen John Travis

2 I am a director and practicing farm management consultant with Tambo NZ Ltd. Prior to this, I have worked in a range of roles in New Zealand Agribusiness including 7 years with Beef + Lamb New Zealand and its predecessor Meat & Wool New Zealand.

3 I graduated from Lincoln University in 2003 with a Bachelor of Agricultural Commerce degree majoring in valuation and farm management. I have 6 years' experience as a Farm Management Consultant.

4 I am a registered Member of NZIPIM (New Zealand Institute of Primary Industry Management).

5 Tambo NZ Ltd has a staff of eight that work across the full spectrum of pastoral farming. Specific expertise in building and helping farmers execute integrated farm systems that incorporate multiple crop and animal species, grounded on efficient use of soil and water resources in an environmentally sustainable manner.

6 Tambo NZ Ltd have a strong farmer client base in the Hurunui and Waiau river catchments and are very familiar with farm systems, land classes and land use potential.

7 This submission has been made on the request of the Hurunui District Landcare Group.

8 This submission aims to provide the reader with an understanding of the key drivers and limitations of dryland farming in the Hurunui district.

Background

9 'Dryland farmers', a term commonly used in the farming sector and between farming peers. It denotes a well-defined farm category.

10 Across regional New Zealand there are many dryland farms however; annual rainfall, spread of rainfall and evapotranspiration rates have the potential to limit landuse capability within this class of land.

11 'Dryland Farms' in the Hurunui district are defined as summer dry with cold winters - frosts typically exceeding 50 per annum. In contrast 'Dryland Farms' in the Waikato are referred to as summer safe, winter warm due to their reliable summer rainfall and mild temperatures during winter. Total dryland dairy farms in the Hurunui district can be counted on one hand and this is not the case in the Waikato.

12 The climate has a large bearing on landuse capability of dryland farms of which are regionally specific. The exception of this can occur in isolated pockets within the region.

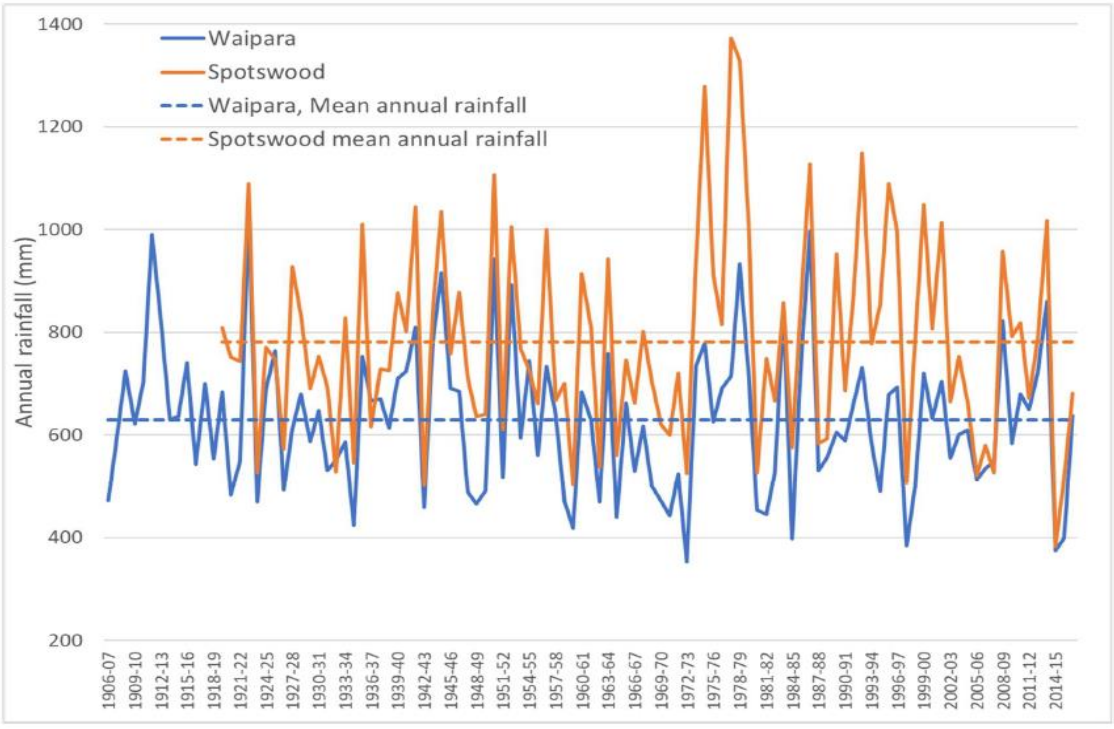
13 Further landuse limitations include, soil type, topography, aspect and elevation.

14 Land and water resources have a self-limiting effect on landuse potential. The term 'potential' used in this context has historically denoted intensification.

15 Within the Hurunui region, the Culverden basin is a good example where soils, topography, elevation and the introduction of irrigation to supply reliable water have not limited landuse potential.

Water Resource

Figure 1. Rainfall Records from two sites in the Hurunui and Waiau Catchments



16 Mean annual rainfall is not a reliable predictor of a water resource. The data shows up to 177% and as little as 51% of mean annual rainfall over this 100 year period.

17 Variability in rainfall is not a new phenonium and this region has a long history of drought events.

18 Low rainfall has a greater impact on farm operations than high rainfall.

19 Timing of rainfall within the season is as important as total rainfall

20 Reliable irrigation mitigates the effects of summer dry conditions and provides consistent crop and pasture production.

Managing Variability of Rainfall

21 Rainfall variability is managed through creating a number of contingencies within the farm plan. The contingencies typically focus on protecting capital livestock (Breeding) in times of low rainfall and expressing productivity potential in times of above average rainfall seasons.

22 Productivity potential may include; conditioning capital livestock, cutting supplement to maintain a feed contingency, finishing more animals, growing animals to higher weights or trading additional livestock

23 Within the Hurunui catchment variable rain during the summer months has the greatest potential impact on dryland properties.

24 Spring pasture production is deemed reliable and it is not uncommon for 60% of the annual pasture production to be grown in this period.

25 As a result, dryland farms typically carry a high ration of breeding sheep (ewes). When a ewe, lambs in the spring its feed demand triples that of its winter feed demand thus creating a better match to pasture supply.

26 In contrast, the feed demand profile of intensive finishing lambs or cattle is incremental to that of their liveweight increase. What this means is that a finishing animal may only have the ability to eat 120% of their winter diet in spring compared to a breeding ewe at 300%.

27 In a finishing system; large volumes of winter feed supplement are required to carry sufficient livestock numbers to utilise the spring flush.

28 The breeding ewe generates offspring that are typically weaned early summer and provide a flexible class of livestock that can be sold at this point.

29 Forage crop yields in a ‘good growing season’ may result in 200% of requirement or 50% in a dry or excessively wet season.

30 A component of trading livestock is common practice within dryland systems as these animals can readily be sold. This flexible lever is an important component within the system.

31 Irrigation underpins consistent productivity and confidence to invest in intensive models such as finishing or milking livestock.

Land Resource

32 Soil type across the Hurunui district varies considerably but can be categorised in to three key types when determining land use potential. Heavy, medium and light soils. In the context of livestock farming these categories reference the soils ability to hold moisture, what to plant and suitability for grazing different classes of livestock.

33 A proportion of soils within the Hurunui district are highly suited to horticulture production but without irrigation this is not a possibility.

34 Topography defined as slope of land class. Typically segmented by cultivatable and non-cultivatable in a farming context.

35 Non cultivatable land, has been 'improved' for the purposes of farming over many generations with the focus on subdivision, stock water reticulation and topdressing with fertiliser and seed.

36 Non cultivatable land typically described as low input/low output however noxious weed control can be costly as the intensity of grazing is not sufficient enough to effectively suppress re-growth.

37 Aspect and elevation can vary as much within a farm boundary to that across the Hurunui district. Limitations and opportunities pertain to pasture growth potential with emphasis on timing.

38 The summary of these physical attributes and areas of each land class are referred to the as the 'balance' of the property.

39 There is significant diversity of land resources across the Hurunui district and that within the farm boundary. Dryland farms in the Hurunui district are not homogenous by nature.

Managing the Land Resource

40 The livestock enterprise mix on dryland farm systems are typically matched to the 'balance' of the property. The farm systems are designed to best match the feed supply from different classes of land.

41 Winter pasture growth rates maybe less than 10% of peak spring growth rates. While breeding ewes provide the best fit, a combination of autumn saved pasture and winter crops will be required to feed animals at or above maintenance levels through the winter.

42 The winter crop plans focus on aligning suitable soil types that will support the livestock class grazing the crop. For example heavy cattle on light land.

43 Crop yield can be highly variable on dryland farms, to mitigate the effect of this, conservative yield estimates are made when forage crop planning.

44 Often small parcels of cultivatable land contribute significantly at critical times of the season to express the scale of the uncultivatable land.

45 Forage selection and timing of sowing are critical management decisions for reliability of production.

46 Dryland farm systems are not geared to 100% of potential, this is in contrast to irrigated land.

Dryland Farming Summary

47 The enterprise mix of dryland farm systems have changed very little of the past 100 years. What has changed significantly is individual animal performance is greater and less animals are farmed, essentially feeding less animals better.

48 Water and land resources limit landuse potential of dryland farms in the Hurunui district.

49 Climate has a significant bearing on land use potential. Dryland systems focus heavily on capturing the spring flush and breeding ewes are the most efficient in achieving this.

50 Irrigated properties are exposed to commodity price movements. Dryland properties are exposed to commodity price movements, seasonal variations, and productivity changes.

51 Dryland farm systems have complex land resources. Each class of land requires different management and be integrated in to a whole system approach.

52 The 'balance' of a dryland farm dictates the system operated. These systems have been finetuned through generations.

53 Choice of winter forage crops grown are made to suit the growing season of the soil, class of stock eating it and volume required. Any limitations to this will likely result in large yielding crops being grown on heavy soils not suitable for heavy grazing to achieve volume targets.

54 Intensification of hill country will likely be required to maintain the balance of a farm system if wintering crop restrictions are imposed.

55 A significant contingency is factored into forage cropping plans due to the unreliable nature of dryland farming.

56 When topography is not limiting, water is the single most limiting factor to land use change. Irrigation throughout Canterbury is proof of this.