Fact sheet

Hill country sheep and beef farms

June 2018

There are over 5,500 sheep and beef farms on hill country in New Zealand; this around half of all sheep and beef farms. Of these, around 1,000 are on 'hard hill country' in the North Island.

Hill country sheep and beef farms are a mixture of flat (10%), rolling (32%) and steep (41%) land[1]. Both flat and some of the rolling country can be cultivated to grow feed crops, while steep land is suitable for grazing and over-sowing with improved pasture species. Overall, the development of flat, rolling country is vital to increase productivity within the hill country farm system. In addition, 3% of hill country sheep and beef farms land area is currently used for plantation forestry, and 14% is non-grazed native vegetation. Twenty-four per cent of all New Zealand's native vegetation cover is on sheep and beef farms with well over half of this on hill country sheep and beef farms. The Manuka component of this natural vegetation is important with all honey exports for the 2017 calendar year totalling $330m at Fob.

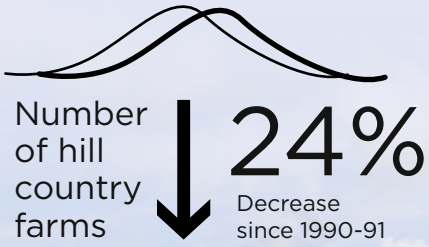
The number of hill country sheep and beef farms has dropped by 24% since 1990, as has the number of grazed hectares. For hard hill country farms, the area grazed has decreased by 27%. With sheep and beef farms converting to dairy on lowland country, the total reduction in sheep and beef grazing area since 1990-91 is 35%.

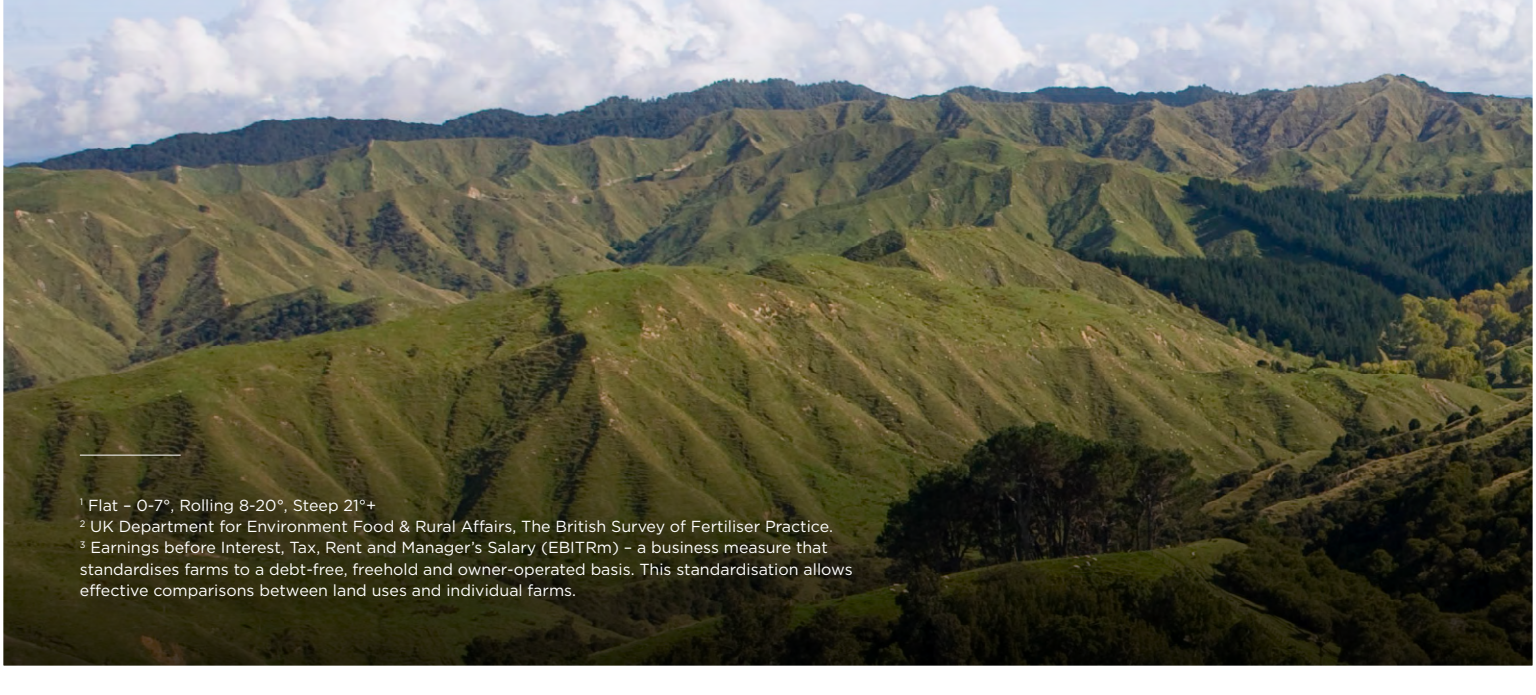
For all sheep and beef farms, stock numbers have reduced since 1990-91 from 58 million sheep to 27 million sheep in 2017-18. In the same time period beef cattle numbers have reduced from 4.6 million in 1990-91 to 3.6 million. With the dairy expansion onto lowland sheep and beef finishing country, hill country farms now provide just on 50% of prime lambs for export processing, well up from 29% in 1990-91. Hill country farms are also key suppliers of store livestock to lowland finishing farms that add further weight and value to these livestock.

Stocking rates for hill country farms are low. Hill country farms run 7.1 stock units per effective hectare; 4.0 of these are sheep stock units and 3.1 are cattle stock units. Effective hectares exclude non-grazed and forestry land.

Hill country sheep and beef farms use low and appropriate applications of nitrogen fertiliser. Hill country sheep and beef farms use on average 13.7 kg per ha of elemental Nitrogen (N) on pasture compared with 19.1 kg per ha for sheep and beef farms on finishing country. Hill country feed crops make up 2.6% of the effective farm area and N is applied at a rate of 60.4 kg per crop ha. This compares with the more intensive finishing sheep and beef farms where crop makes up 10% of the farm area and N is applied at 75.4 kg per crop ha. In comparison with the UK, non-dairy farms apply elemental N at a rate of 40 kg per ha of pasture and 94 kg per ha of crop area[2]. New Zealand diary nitrogen application is typically 150kg of N per hectare in multiple applications.

Hill Country Farm class	Number of hill country farms			Effective hectares (millions) of hill country farms		
	1990-91	2015-16	% change	1990-91	2015-16	% change
SI Hill Country	900	810	-10%	1,591	1,289	-19%
NI Hard Hill Country	1,650	1,065	-35%	1,383	1,006	-27%
NI Hill Country	4,700	3,640	-23%	2,441	1,835	-25%
All hill country	**7,250**	**5,515**	**-24%**	**5,416**	**4,130**	**-24%**





[1] Flat – 0-7°, Rolling 8-20°, Steep 21°+
[2] UK Department for Environment Food & Rural Affairs, The British Survey of Fertiliser Practice.
[3] Earnings before Interest, Tax, Rent and Manager's Salary (EBITRm) – a business measure that standardises farms to a debt-free, freehold and owner-operated basis. This standardisation allows effective comparisons between land uses and individual farms.

Hill country sheep and beef farms apply rates of elemental Phosphate (P) on pasture similar to lowland sheep and beef farming systems. Hill country sheep and beef farms apply on average 20 kg of P per ha on pasture top-dressed areas. Fifty-seven per cent of hill country pasture areas are top-dressed in any one year. This compares with lowland sheep and beef farms applying 19 kg of P per ha on pasture with 56% of their pasture areas top-dressed per year. Hill country feed crop areas (2.6% of effective area) apply P at 38 kg per ha. Lowland farms crop 10% of their effective area and similar to hill country apply crop P at 38 kg per ha. Dairy farms as a generalization apply elemental P at a rate of 30 to 40 kg per ha per year. As a further comparison UK non-dairy farms apply P at a rate of 3.5 kg per ha no doubt due to their older soils and mineral content. UK crop P application rates are 12.6 kg per ha.

Over the last three decades, sheep and beef livestock productivity has increased dramatically. Lambing percentages have grown from 100% to 126% - essentially producing 26 more lambs per 100 ewes than in 1990-91. The weight of lambs sold has increased by 30%, and prices have improved by 200% (in 2017-18 dollars). Steer weight has improved by 6%, and prices for beef have improved by 40%. These gains have been made through improved genetics, changes in breeds, better land and animal care, and improved marketing and market access.

In contrast, the wool clip per head is down slightly with breeding emphasis on meat production efficiency. In contrast to meat prices, wool prices are down 46% on 1990-91 prices in real terms. Wool in 1990-91 made up 31% of Gross Farm Revenue but only 7% in 2017-18.

Unsurprisingly, given reduced inputs and improved outputs through productivity and efficiency gains, the profitability of hill country sheep and beef farms has improved since 1990.

Sheep and beef farms have also generated significant eco-efficiency gains. Green-house gas emissions for the sheepmeat sector are down 40% on 1990 levels; for the beef cattle sector they are down 10% on 1990 levels.

Sheep and beef farms in 2017-18 generated $4.1 billion from wool, sheep and cattle sale receipts at the farm gate, and a further $3.4 billion of value was added beyond the farm gate for export and the local market, a total of $7.5 billion. This is spent in regions buying goods and service to operate farms and by the farm families on their living expenses and those in the service industries. Sheep and beef farms are a significant economic engine driving activity in the regions and the NZ economy.

Next steps for hill country sheep and beef farming

Hill country sheep and beef farming has made considerable progress in productivity, sustainability and in supporting its communities over the last three decades – but there is always more to be done.

B+LNZ is investing, alongside government, in an $8.3m Hill Country research programme. The purpose of this science programme is to focus on New Zealand Hill Country farming systems of the future by applying a new lens. That is, focus on developing our hill country production systems, whilst maintaining a suitable balance between production (what is taken from the land), and enhancing the health and well-being of our land.

B+LNZ's Environment Strategy and action plan sets out work that will further enhance the productivity and sustainability of hill country sheep and beef farms. The strategy focuses on water quality, greenhouse gases, biodiversity and soils, and action will include widespread use of Farm Environment Plans, catchment groups, and better evidence and data to support improved on-farm action.

Hill Country Farm class	Earnings before Interest, Tax, Rent and Manager's Salary (EBITRm)[3] Real 2017-18 $s per hectare			Hill Country Sheep and Beef Farm: Farm Profit before Tax Real 2017-18 $s		
	1990-91	2017-18	% change	1990-91	2017-18	% change
SI Hill Country	70.90	155.00	119%	59,000	160,000	173%
NI Hard Hill Country	152.90	337.70	121%	48,100	178,300	271%
NI Hill Country	264.00	471.30	78%	57,300	126,800	121%
All Hill Country	**171.40**	**329.50**	**92%**	**55,400**	**141,700**	**156%**

Sources: B+LNZ Sheep and Beef Farm Survey, NZIER, MBIE, Statistics NZ
Beef + Lamb New Zealand Insights (MW7724)