

Sustainable Land Use Initiative in the Horizons Region

The goals of SLUI are to reduce erosion rates to close to natural levels, build resilience in the rural sector and regional economy, protect lowland communities from upstream hill country erosion and improve water quality in the Region's rivers. Now that the programme has been running for 12 years it provides an opportunity to look back on learnings and progress.

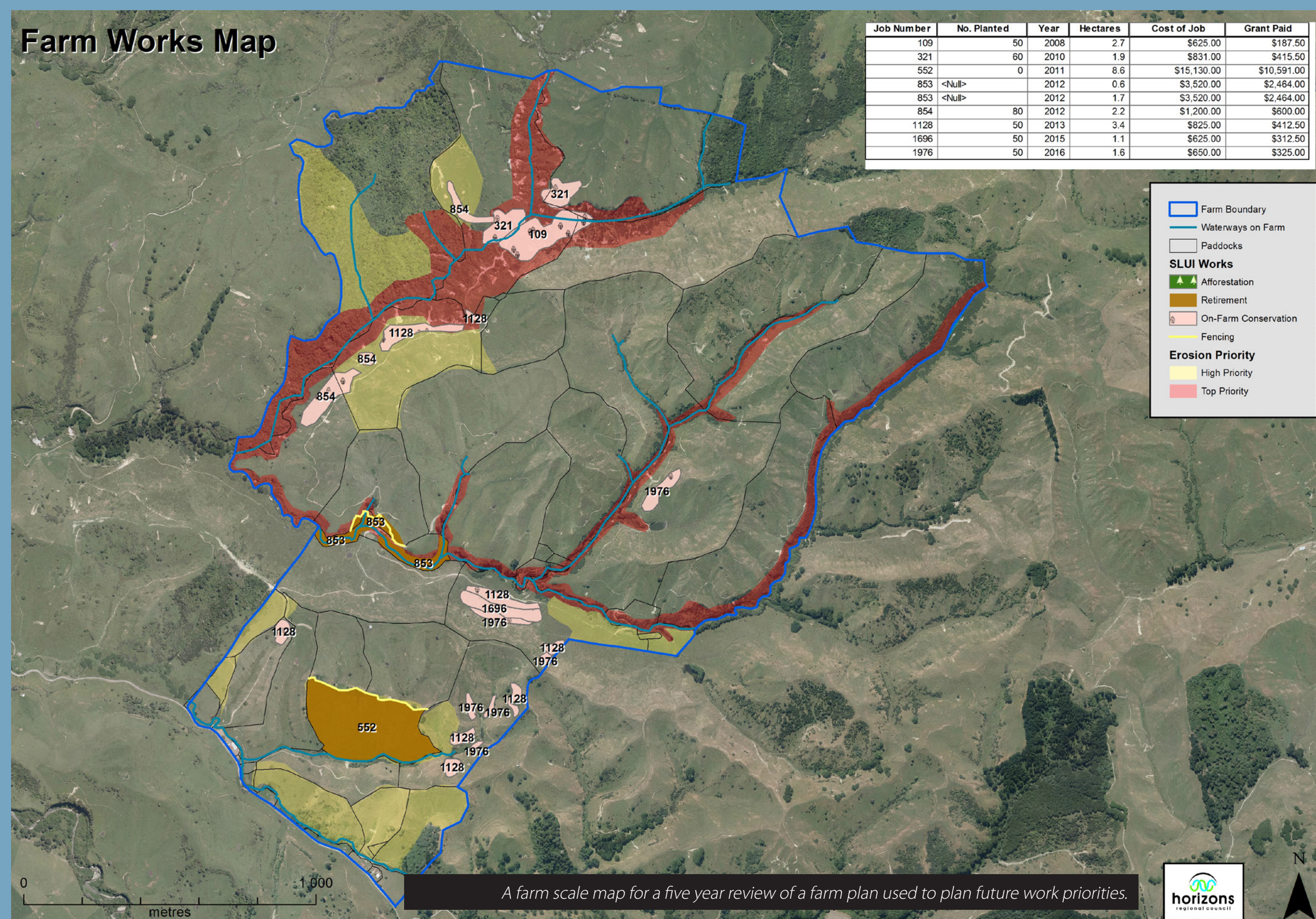
Resource Information

Land is classified by the likelihood of sediment delivery to water from farm-scale resource mapping. Using GIS this information can be extracted at any time at regional, district, catchment or farm scale.

LandType	Not Erodible	Erodible	High Priority	Top Priority	Total
Pasture land with no works	86,093	188,095	88,421	24,266	386,875
Existing trees with no works	3,172	25,951	22,799	31,670	83,592
Works on pasture land	922	7,571	6,309	4,774	19,576
Works on existing trees	206	2,230	2,742	5,761	10,939
Total	90,362	223,847	120,271	66,472	500,952

Regional picture in September 2017 of different land priorities mapped, classified by existing protective vegetation at the time of mapping and works completed since then.

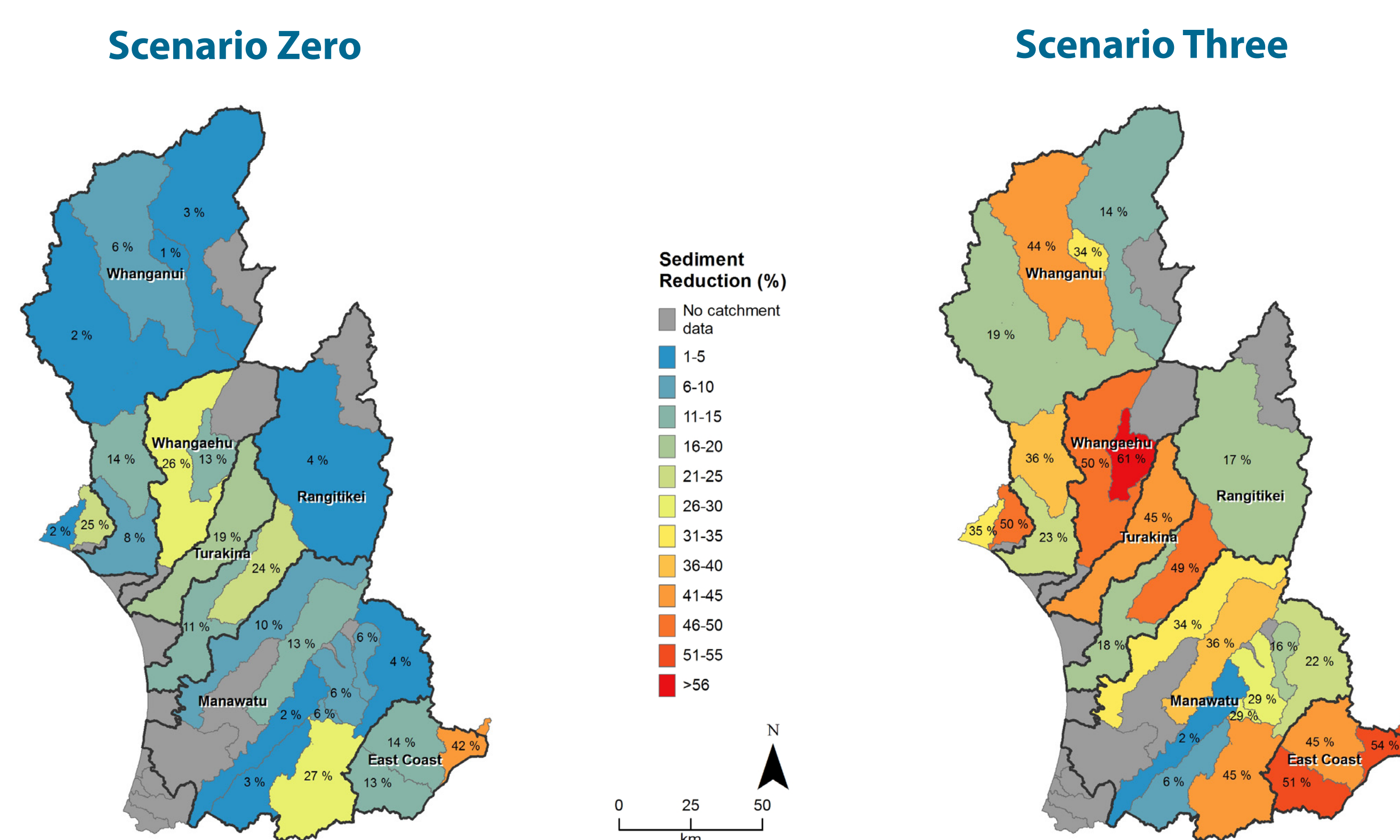
- 500,982 ha of land mapped in SLUI
- 13% of the land mapped is classed as top priority land. This is land with a potential for very high sediment delivery to water and suited for retirement or afforestation works. 35% of the programmes works are on this land type.
- 44% of the land mapped is classed as erodible land. This is classic class 6 hill country suited for pole planting. 32% of the programmes works are on this land type, mainly on land mapped as pasture.



Erosion Reduction

- In 2014 Landcare Research modelled sediment reduction at maturity of works, based on the area of farms mapped in each catchment.
- Scenario Zero: SLUI stopping in 2014, with no new farm plans, showed a regional reduction of sediment load by 9%.
- Scenario Three: SLUI continuing until 2043, at the same rate as it was in 2014, showed a regional reduction of sediment load by 27%.
- We are currently working with Landcare Research to develop a farm-scale model for SedNet which will be able to model individual farms sediment reductions from works completed.

Sediment Reduction Change (%) in Water Management Zones



Water Quality & Flood Protection

In evidence given to the One Plan, Allan Cook, Horizons Group Manager of Operations at the time, expressed concern about the long-term flood protection of some of our rivers aggradation reaches.

In the lower Manawatu River 1.6 million m3 of silt had been deposited over 10 years on a 32km stretch of river. Removal of this material was estimated to cost \$800,000 per year, progressively declining the design standard of flood protection. Mr Cook stated that these silt removal measures were only 'buying time' until a more sustainable solution is found, and was convinced that ultimately the sustainability of the flood protection schemes would hinge on our ability to achieve a long-term reduction in the rate of erosion.

Over **10,000** ha of afforestation and **3,700** ha of retirement

on mapped pasture land in the SLUI programme have been conservatively modelled to have prevented

250 TONNES of nitrogen entering our Region's waterways

This is the equivalent of around

500 TONNES of urea.



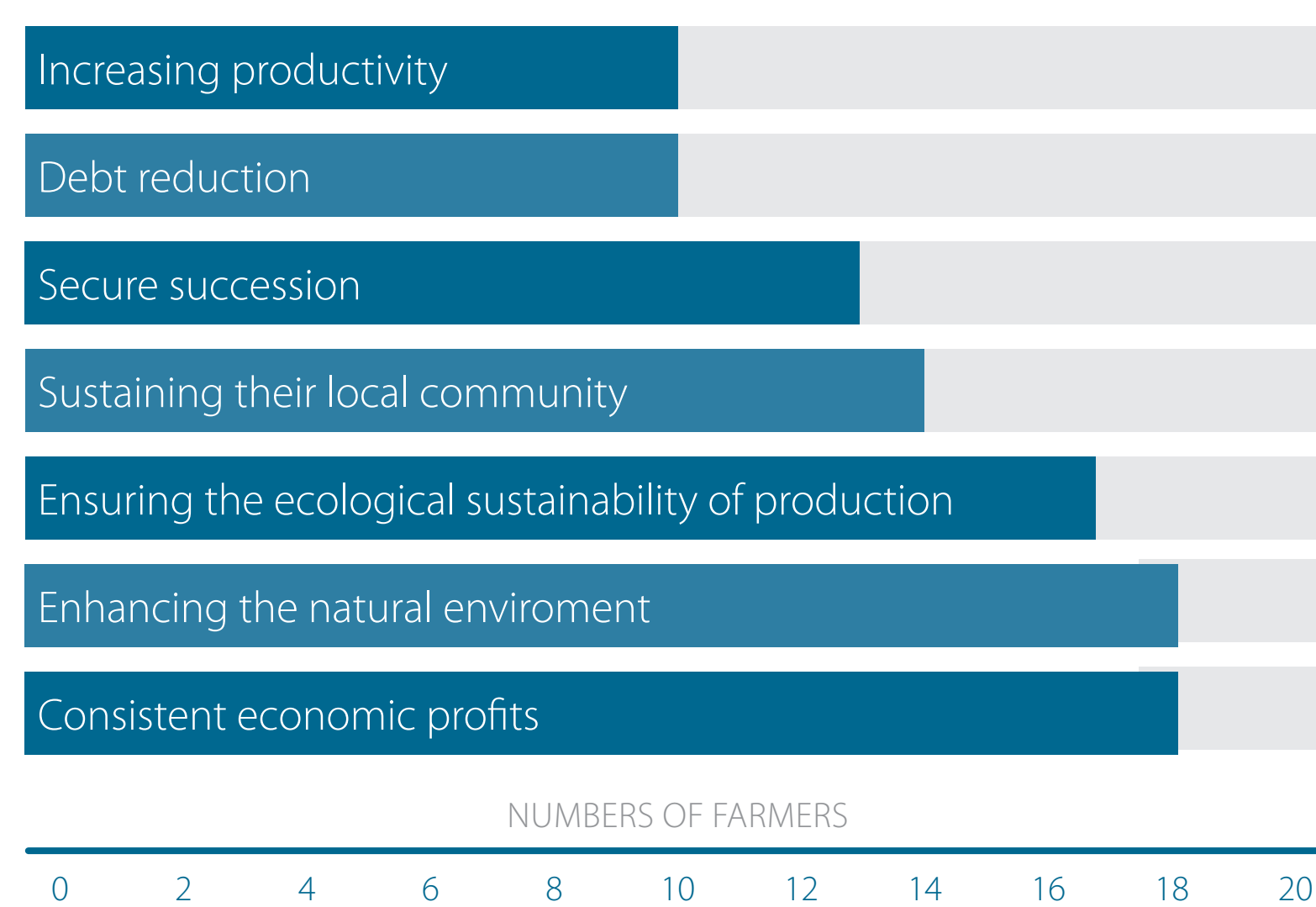
Photo by S Nicholson

Rural Sector Resilience

In 2016 AgResearch produced a report in conjunction with MFE and Horizons to examine farmers' views on the contribution of their farm plans to the environmental, economic and social sustainability of their farm businesses and local community.

- There was evidence farm plans could provide a useful framework for improved farm management and growth.
- There was no evidence that the on-farm implementation of works in farm plans reduced the productivity or profitability of farming.
- Most farmers believe that since its inception, SLUI has increased the resilience of their farm and local environment. In some cases it has had a positive (or at worst neutral) impact of their resilience both on-farm and at a wider local level.

Values and priorities SLUI farmers attach to their farm



Data from interviews with 20 SLUI farm plan holders from the report It's Everybody's Business: Whole Farm Plans - a vehicle for implementing policy.

- There was qualified support as to the extent social resilience is perceived to have increased since 2004.
- Field officers were identified as playing a fundamental role in engaging with farmers and in the adoption and implementation of SLUI. There was evidence farm plans could provide a useful framework for improved farm management and growth.

Trees planted and regeneration on mapped pasture land from SLUI works to the start of September 2017 have been modelled to sequester 340,000 tonnes of carbon per year. **This is the equivalent of 92,430 ha of the 500,000 ha of mapped SLUI farms being carbon neutral.**