The Consequences of an Innovative Water Quality Policy

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Cap and Trade – a promising regime

The cap:

Numeric environmental limits can be achieved Farmer choice within limit

The trades:

Farmers are not 'stuck' in one landuse or farm system Encourages uptake of new technology Sellers gain capital for investment Purchasers increase production or start a new business SO: trading minimises the overall cost of change

Cap and trade for water quality – the evidence

The US

No farm level limits – catchment limit unachievable Very low trading levels – cost of change not minimised - poor scheme design

- no benefit to farmers

New Zealand

Nine studies favour cap and trade OVERSEER™



Spatial scale



Time element

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Biophysical and social



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Case studies





Landscape biography

Life story of the landscape Integration of information from: Farmer interviews Key informant interviews Environment court proceedings Waikato Regional Council Hearings submissions Media reports Consent information (edited by WRC) Nitrogen sale information (edited by LT Protection Trust) Taupo Lake Care, farmer meeting and other records Taupo District Council consent data

Spatial results – land uses and practices



Temporal results – indicative landscape paths

Movement in combined social and biophysical factors



1950s 1980s 1990s 2001/5 2013

Temporal results - landscape paths 2013

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State of the state		
	Change with trading	21%
The second se	Change without trading	6%
	Restructuring	5%
	Business as usual	25%
	Reduced production	42%
Turangi		



Key drivers of change

EXTERNAL	CATCHMENT	LOCAL	FARM
Markets	Citizen/ science	Landcorp exit	Mitigations
Govt Policy		C/N markets	View of N trade
Economics of sheep/beef	Climate/soils Landuse options	Development legacy	Capital value Farm size
	Remote location	LT Protection	Farmer aims
	OVERSEER™	Trust	Kaitiakitanga

Landscape path projection

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2013

Implications for farming under cap and trade

- 1. Contribution of N trading low number of trades
- 2. Lack of landuse options and mitigation alternatives
- 3. Small farm sizes, carbon market, water use regulations
- 4. OVERSEER™
- 5. Lower production