Does using the Integration and Implementation Science framework lead to more useful science for environmental policy development?

An initial look at two case studies in Canterbury, New Zealand.

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National Science Challenges
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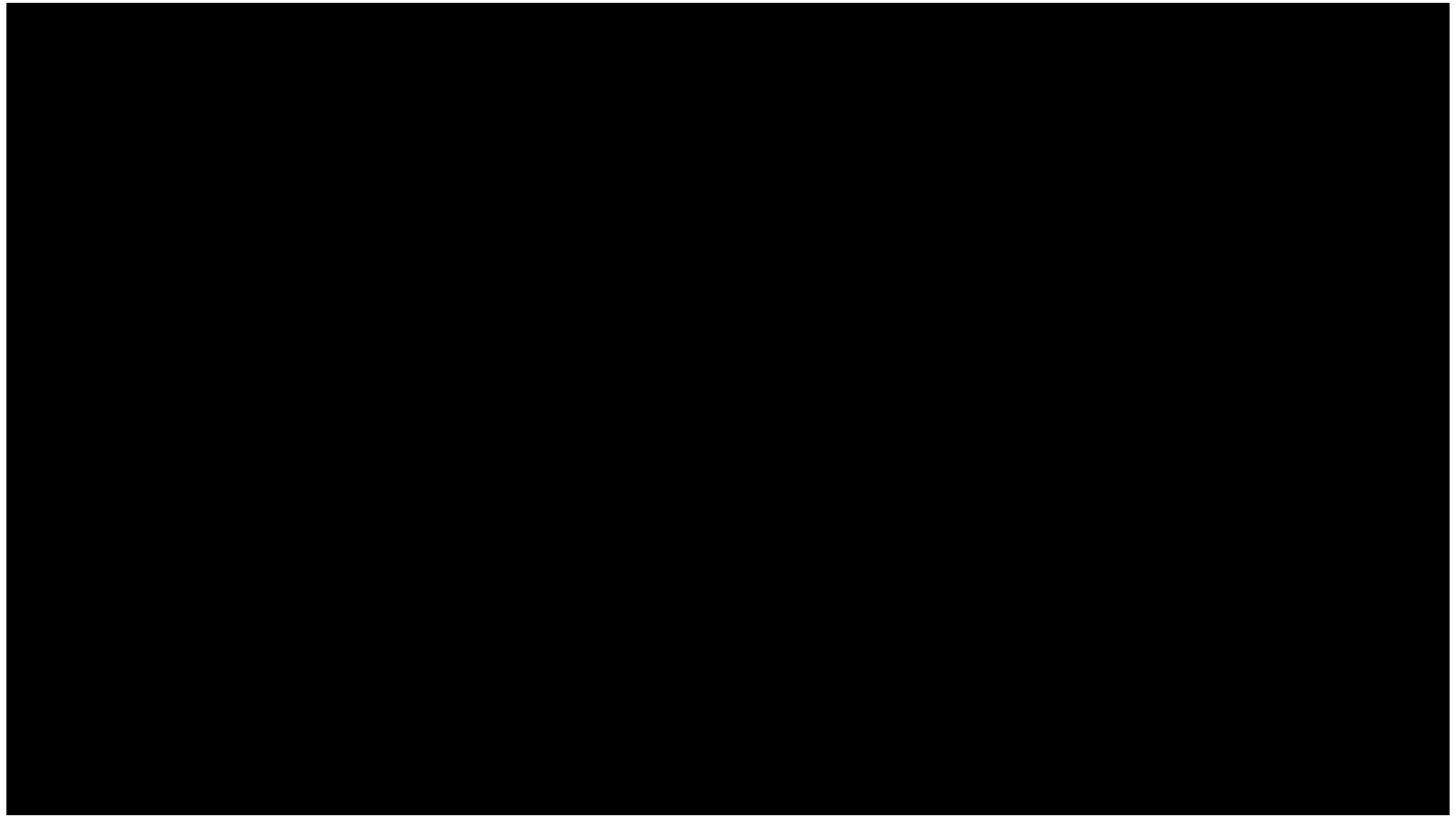
Kia ora from New Zealand



Agriculture in New Zealand

'Horrible' conditions at troubled lake as restoration project begins

CHARLIE MITCHELL
Last updated 20:07, October 2 2015

SISSI STEIN-ABEL

Cows are not blocked from wading into Lake Ellesmere, despite rules forbidding stock from accessing natural waterways.

Clean-up for Lake Ellesmere, New Zealand's most polluted Lake

By Laura Brown - 26 Aug 2011 19:26:0 GMT

NEW ZEALAND / ENVIRONMENT

Plea to include polluted lakes in plan

4:51 pm on 2 May 2016

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Belinda McCammon, South Island Bureau Chief
@BelMcCammon belinda.mccammon@radionz.co.nz

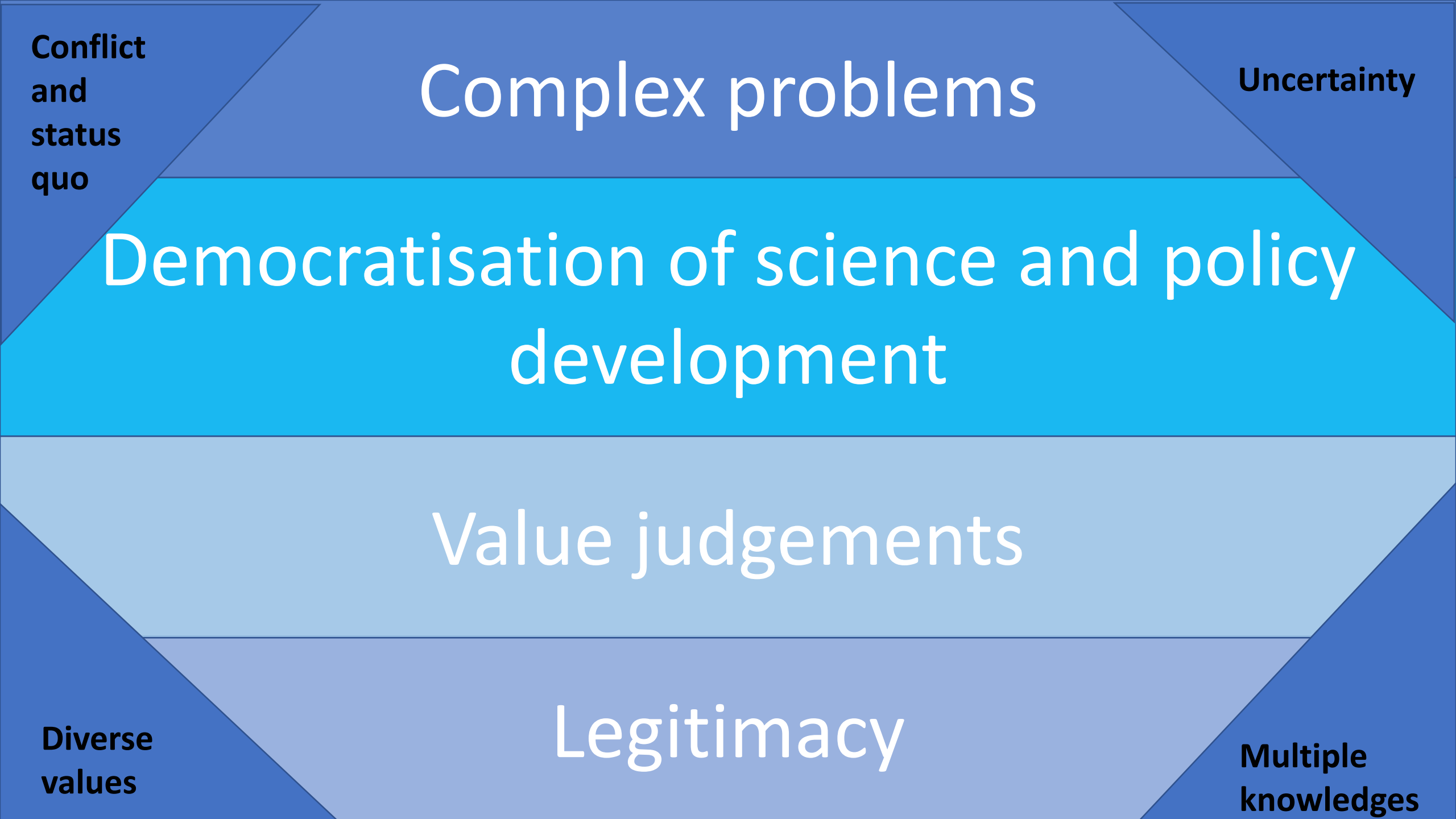
Leaving two polluted Canterbury lakes out of a government plan on water quality would send a dangerous message, says an environmental expert.

'Just not good enough': Summer slow at polluted Canterbury river

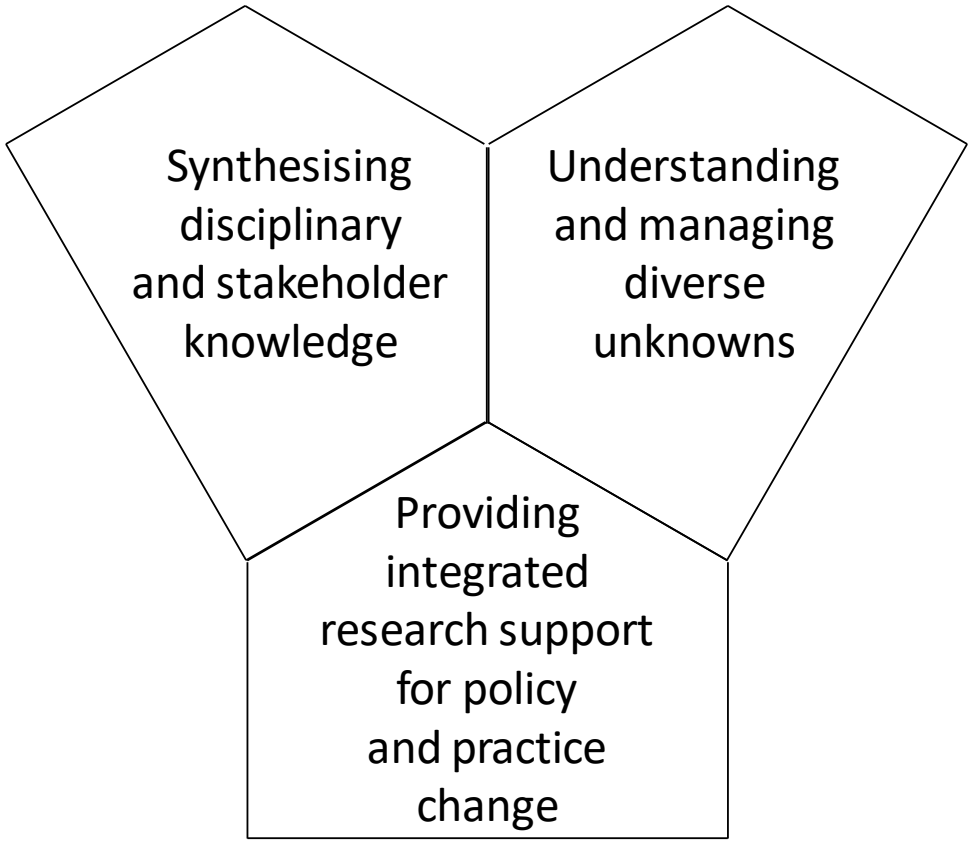
CHARLIE MITCHELL
Last updated 19:43, January 8 2017

IAIN MCGREGOR/Stuff.co.nz

The Selwyn river is polluted and running dry


Conflict and status quo
Complex problems
Uncertainty
Democratisation of science and policy development
Value judgements
Diverse values
Legitimacy
Multiple knowledges

Integration and Implementation Science framework (Bammer, 2013)



Q1 For what and for whom?

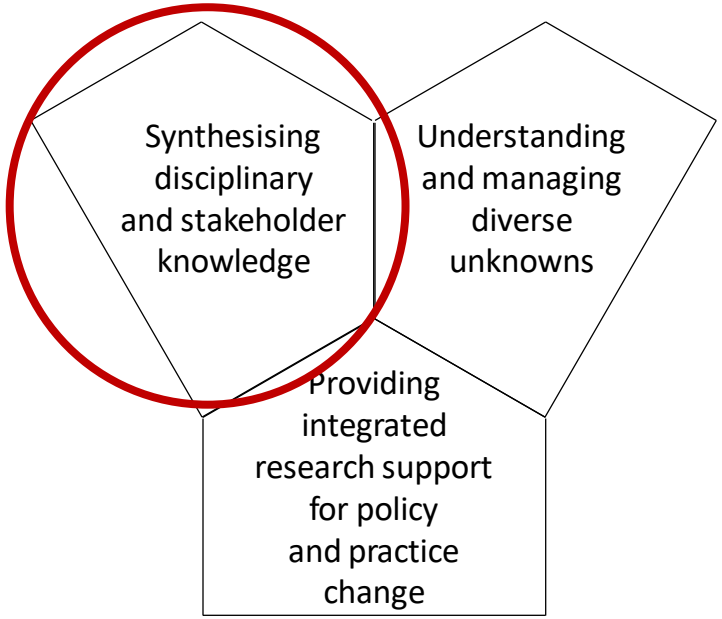
Q2 What is needed?

Q3 How?

Q4 Context?

Q5 Outcomes?

Domain 1: Synthesising disciplinary and stakeholder knowledge



Q1. What was the synthesis of disciplinary and stakeholder knowledge aiming to achieve and who is intended to benefit?

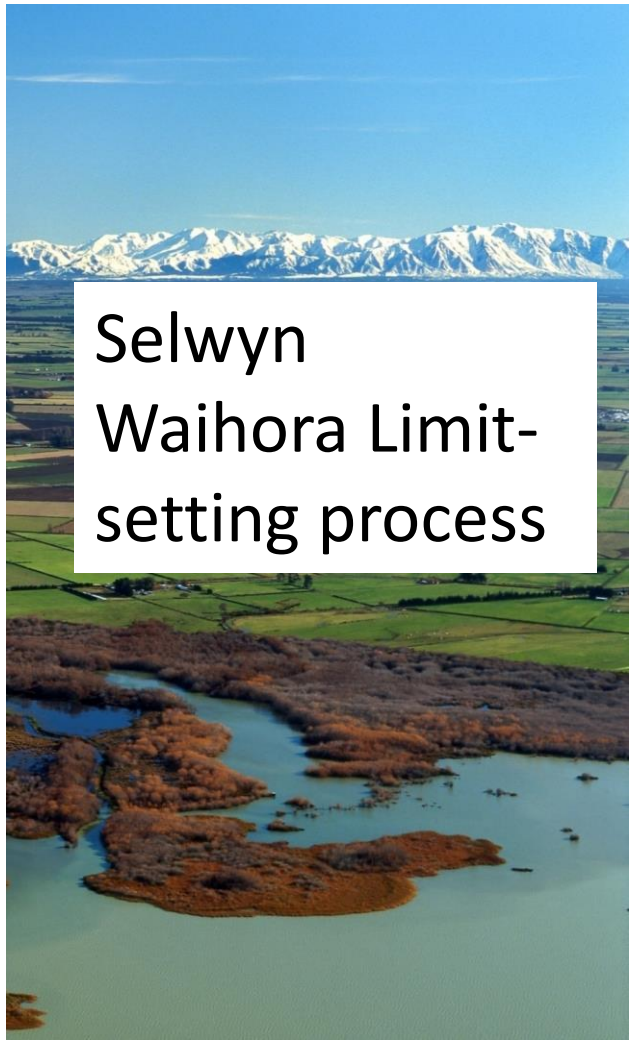
Q2. Which disciplinary and stakeholder knowledge was considered?

Q3. How was the disciplinary and stakeholder knowledge synthesised, by whom, and when?

Q4. What circumstances influenced the synthesis of disciplinary and stakeholder knowledge?

Q5. How would you assess the methods used for synthesis of disciplinary and stakeholder knowledge?

Two case studies



Matrix of Good Management

Data collection and analysis

Data collected on case study through I2S framework

Assessment of 'extent of fit' to I2S elements

Score	Project fit	End user usefulness	Team self evaluation
0-0.49	Poor fit	Not useful	Poor
0.5-1.49	Slight fit	Slightly useful	Quite poor
1.5-2.49	Moderate fit	Moderately useful	Okay
2.5-3.49	Good fit	Useful	Good
3.5-4	Very good fit	Very useful	Very good

Assessment of team self evaluation

Results

	Mean score (qu 1-4)	Assessed project fit with I2S	Assessed usefulness by next users	Team self evaluation
Selwyn Waihora	**Domain 1**	Good fit	Good	Useful
	Domain 2	Good fit	Good	Moderately useful
	Domain 3	Good fit	Good	Useful
MGM	**Domain 1**	Very good fit	Very good	Useful
	Domain 2	Good fit	Good	Useful
	Domain 3	Good fit	Good	Useful

Next steps……

- Test across more variable projects
- Policy briefs
- User workshops – scientists and government agencies

In a nutshell…..

The hurting stalemate around water management meant a new approach was needed

Linear science less fit for purpose at the science policy interface

I2S framework tested and first case studies look promising

Further cases with more variability needed

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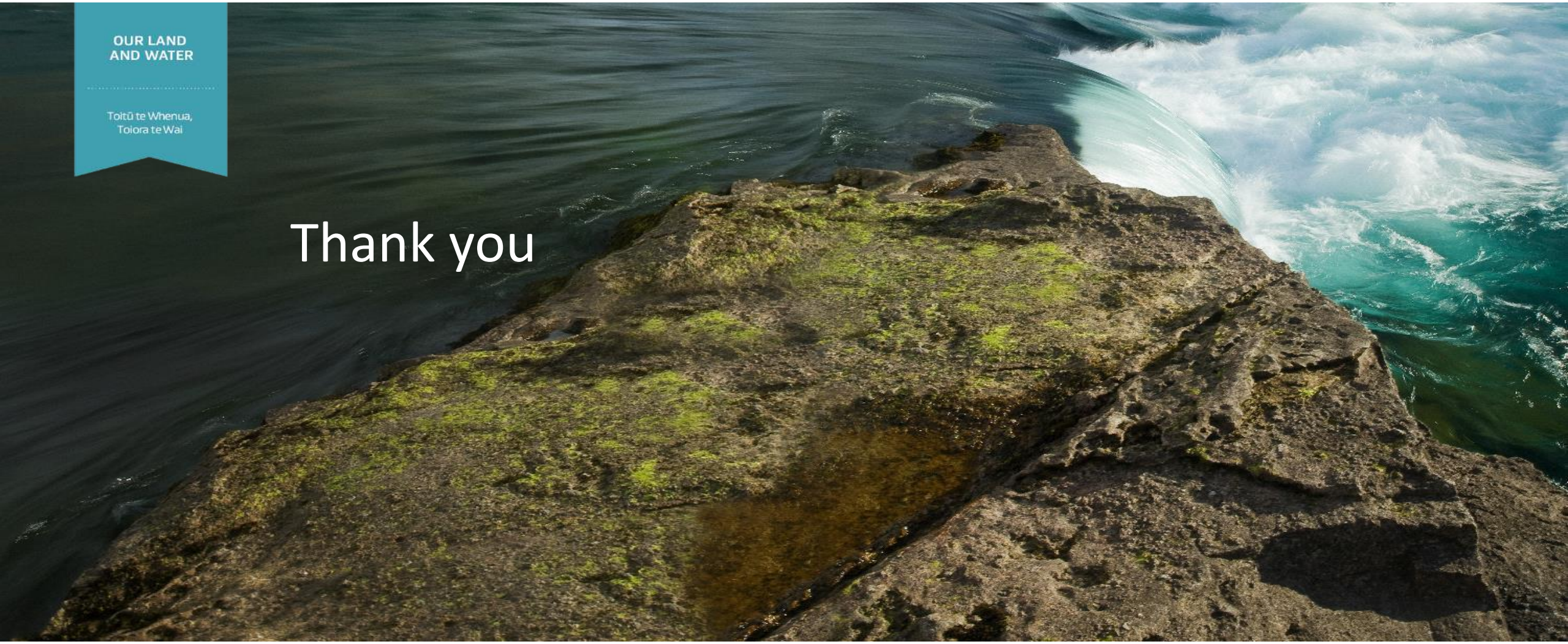

Thank you