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Priorities for, and preferred approaches to, management of New Zealand fresh waters

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Outline

- The survey and the fresh water case study – methods
- Some ongoing trends from 10 years of perceptions of fresh water monitoring
- Most important values of fresh water
- Desired futures for fresh waters
- Support for different management approaches
- Support for paying for commercial use of freshwater
- Key findings and implications

(Acknowledgement – we thank MfE for ongoing funding of this survey work)

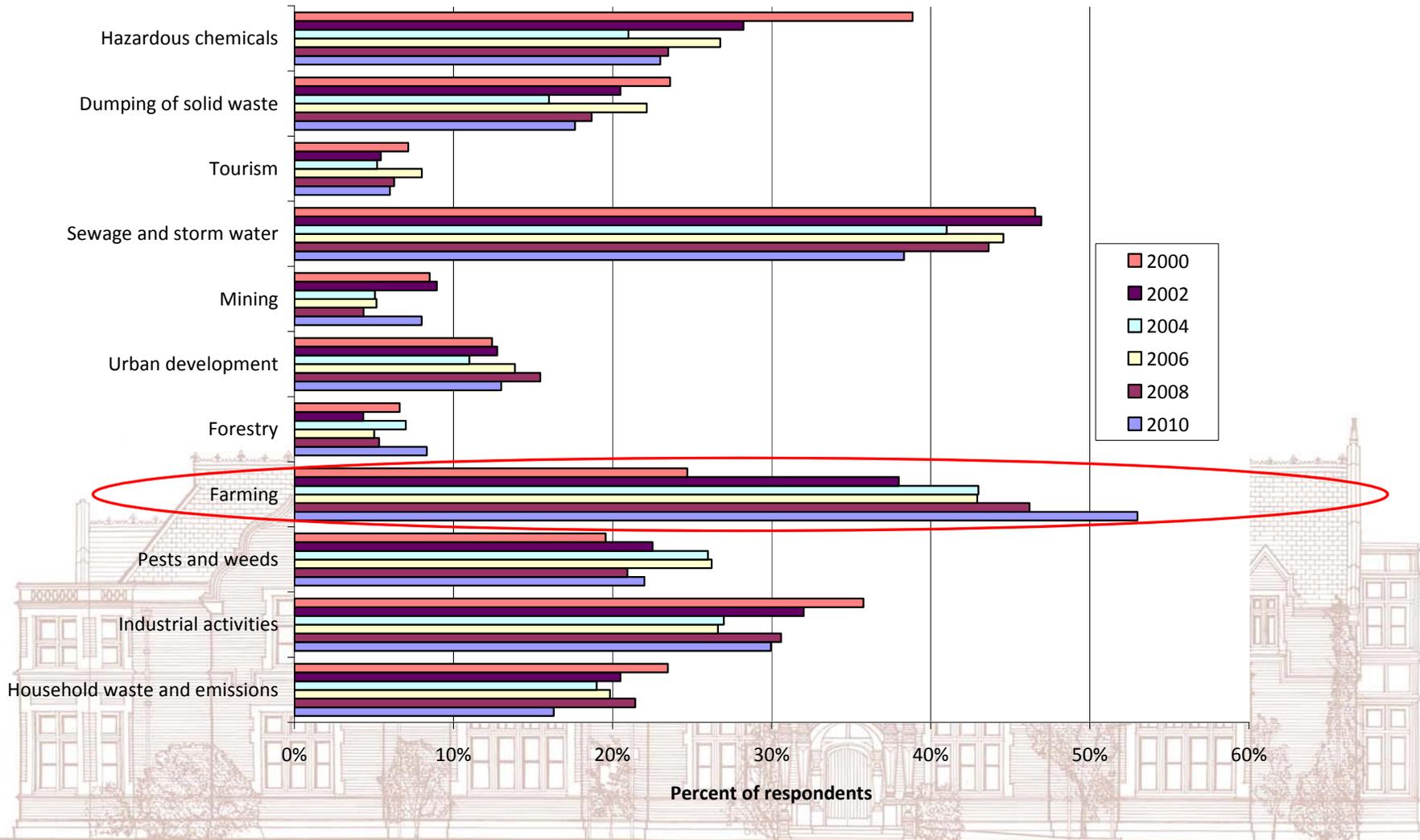
Survey and the fresh water case study – methods

- Assesses people's perceptions of the state of the NZ environment – 11 natural resources, e.g., air, fisheries
- Built around the Pressure-State-Response (OECD) model
- Postal questionnaire and, in 2010 an e-survey
- 2,000 people aged 18 and over randomly selected from electoral roll; additional 500 in 2010 for regional boosters
- Demographic variables include: age, gender, region, ethnicity, education, and employment sector
- Data analysed descriptively and, where applicable, the 2010 survey responses compared with 2008, 2006, 2004, 2002, 2000
- >40% effective response rates in all surveys
- Each survey has a case study – in 2010 fresh water focusing on futures, priorities, policies, management instruments.

Some ongoing trends from 10 years of perceptions of fresh water monitoring

- NZers rate state of rivers, lakes and groundwater highly, but still lowest of all the resources monitored. Consistent with comparative international rankings (e.g., Esty et al. 2008);
- Higher level of concern, even negativity, about the state of local lowland streams. This concern is matched by a range of biophysical science reports (e.g., Scarsbrook, 2006);
- Particular concern about management of farm effluent and runoff, and ongoing significant increase in concern about farming being a major cause of damage to fresh water ...

Perceived main causes of damage to fresh waters. Categories less than 5% are omitted



Most important values of fresh water in NZ

	Rivers and Streams:	Lakes:	Aquifers/ underground water:
Nature (e.g., native bird and fish habitat)	4.3	4.3	3.6
Community household and other use (e.g., garden irrigation or drinking water)	3.8	3.5	3.8
Scenic/visual (e.g., beauty)	3.8	3.8	NA
Recreation (e.g., fishing, boating, swimming)	3.6	3.5	NA
Commercial use (e.g., farm irrigation, hydro power)	3.3	3.1	3.1
Customary Maori (e.g., role as kaitiaki)	2.5	2.5	2.4

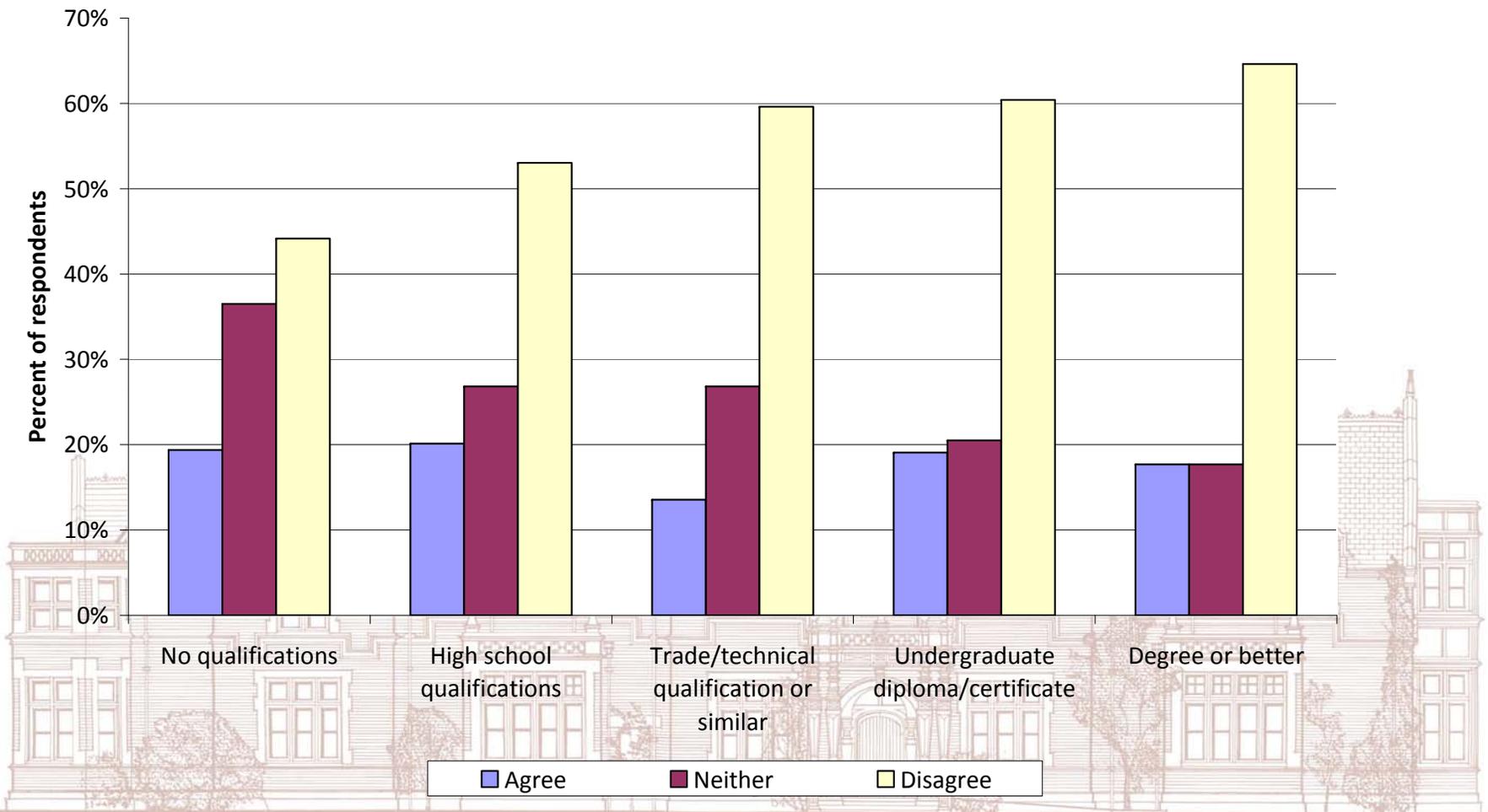
Likert scale range: 'Totally irrelevant – not a consideration' (a score of 1) to 'Critical – the most important thing to consider' (a score of 5)

Desired futures for fresh waters

Future value statement	Mean Likert score
Almost all streams, rivers and lakes should be safe to swim in	4.47
There should be no further significant pollution discharges into water	4.45
Almost all underground water should be safe to drink without treatment	4.26
The most important fishing rivers should be protected	3.98
The most important rivers for hydro electric generation and/or irrigation potential should be fully used for these purposes	3.22
The relationship between Maori and fresh water should be considered a lot more	2.52
We should accept some reduction in environmental values of some freshwater resources in order to enhance economic benefits from their use	2.37
Loss of some native species from some water bodies is acceptable	2.16
In all decisions about freshwater management the main emphasis should be economic	2.01

Likert scale: 'strongly disagree' (1) to 'agree strongly' (5)

Relationship between education level and level of agreement with the statement 'We should accept some reduction in environmental values of some freshwater resources in order to enhance economic benefits from their use'.



Support for different management approaches

We assessed support for different combinations of three approaches for managing fresh water, namely:

- Regulations, Rules and Standards, e.g., for providing enough water for fish and birds to live, protection of drinking water,
- Economic instruments which could include: tradeable water use permits, or pollution fees, or subsidies for reducing pollution.
- Voluntary and/or advocacy approaches which could involve: groups of water users taking responsibility for actions such as voluntary reductions in water use in times of low flow, or sharing available water between commercial and recreation users in such times.

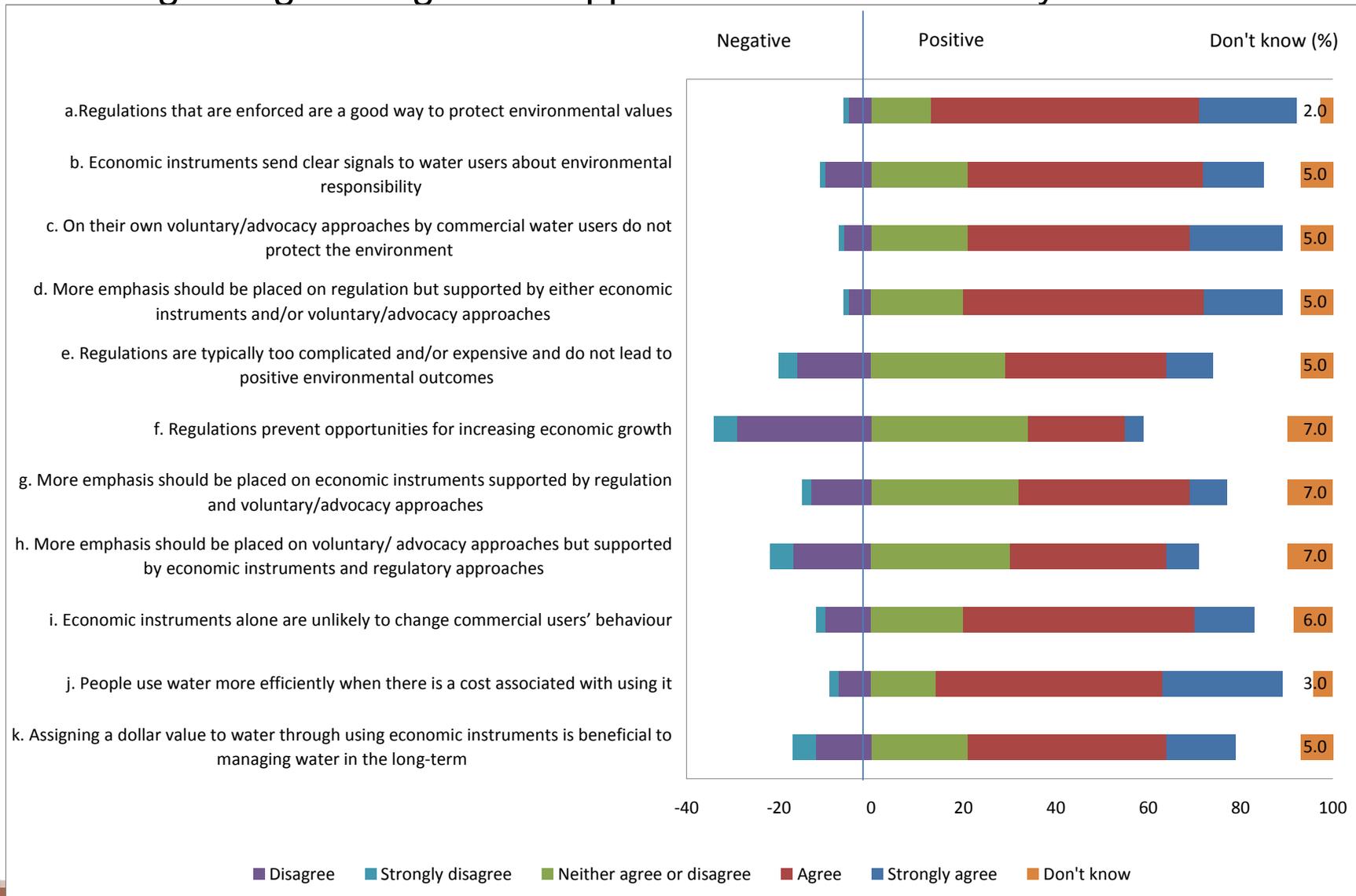
Comparative evaluation (Likert scores: 1= very ineffective to 5= very effective) of effectiveness of different approaches to managing fresh water

	Effectiveness in achieving environmental protection	Effectiveness in achieving economic growth	Effectiveness in achieving benefits to society
All three approaches combined	4.2	4.0	4.1
A combination of Regulations and Economic instruments	3.8	3.6	3.7
A combination of Regulations and Voluntary action & advocacy	3.6	3.4	3.6
A combination of Economic instruments and Voluntary action & advocacy	3.4	3.4	3.4
Regulations alone	3.5	3.2	3.4
Economic instruments alone	3.2	3.2	3.1
Voluntary action & advocacy alone	2.8	2.7	2.8

Comparative evaluation (Likert scores: 1= very ineffective to 5= very effective) of the political acceptability of different approaches to managing fresh water

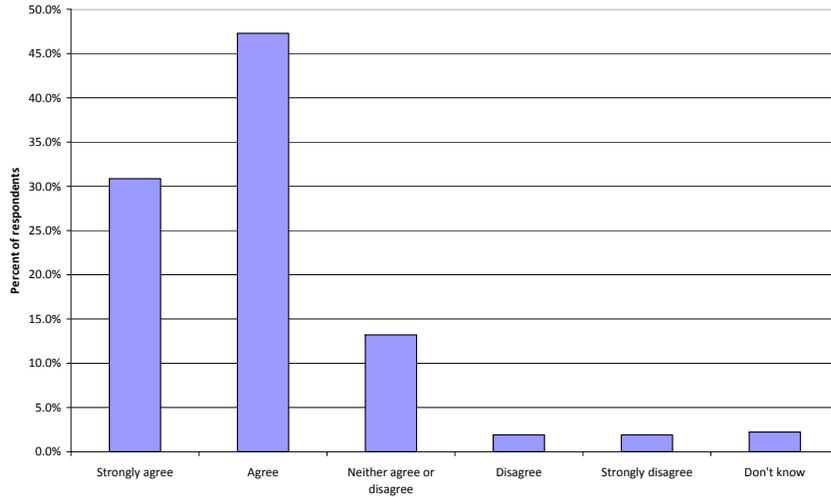
	Mean Likert score
Alternative management approaches	
A combination of all three approaches	4.13
A combination of Regulation and Voluntary action & advocacy	3.61
A combination of Regulation and Economic instruments	3.56
A combination of Economic instruments and Voluntary action & advocacy	3.52
Regulation by itself	3.00
Voluntary action & advocacy by themselves	2.81
Economic instruments by themselves	2.75

Respondents' agreement or disagreement to 11 statements regarding management approaches and their likely outcomes.

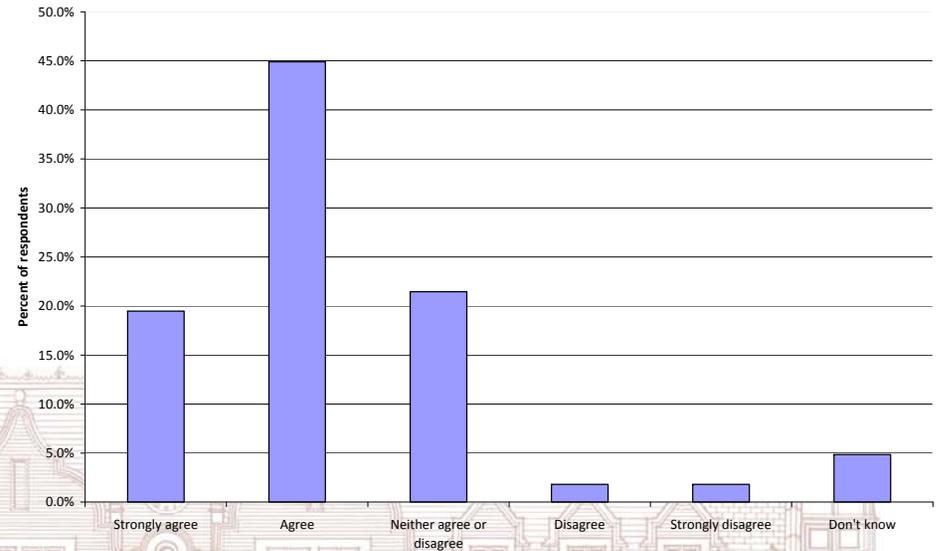


Support for paying for commercial use of freshwater

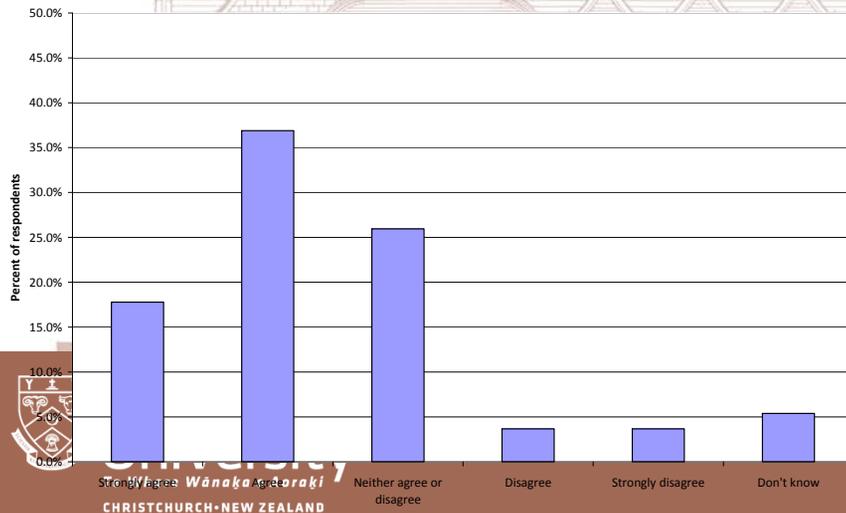
Respondent agreement with the statement that “all businesses should be metered to monitor how much fresh water they use and when they use it”.



Respondent views on whether businesses should pay the administrative costs of providing the fresh water they use



Respondent views on whether businesses, in addition to paying the administrative costs, should pay for every unit of water they take.



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Key findings

1. NZers desire a future of largely non-polluted fresh waters, fit for swimming and with abundant aquatic life. Most important rivers should be protected and they do not want to trade off environmental protection for economic growth.
2. Respondents consider voluntary fresh water management approaches to be least effective and policy combinations that include regulation and market based measures to be the most effective.
3. Respondents support commercial user pays regimes:
 - limited analysis against some key demographics showed no significant difference between farmers and other occupational classes.
 - they all want commercial water use to be monitored, administrative costs charged to commercial users, and in addition they all strongly support commercial users being charged for the water they use.

Policy implications

- Government has a mandate to demonstrate stronger leadership with regard to fresh water and its management
- Such leadership should provide policy initiatives that would help drive efficiency and innovation in water use, and which also would help internalise the environmental externalities associated with current water use patterns.
- Imposing both a user pays regime to recover the administrative costs, and a fee for the commercial use of water would have strong and broad levels of community agreement.
- Both initiatives would also drive other improvements and would likely help New Zealand achieve the long term goals that survey respondents clearly aspire to for fresh water.