

# Quality Before Quantity



The new paradigm for development

# Where are we at?

- NZ has one of the best environmental records of any country in the world
- We have nearly 40% of our land mass in national parks and reserves
- Our water quality is some of the very best in the world....40% of fresh water swimming spots meet potable drinking water quality standards....as does domestic water supply to about 30% of our population....
- Introduced pests and diseases are our most significant environmental issue...
- Human settlement....urban and rural...has changed the landscape and ecology...lets face the facts

# Where does Agriculture fit into this?

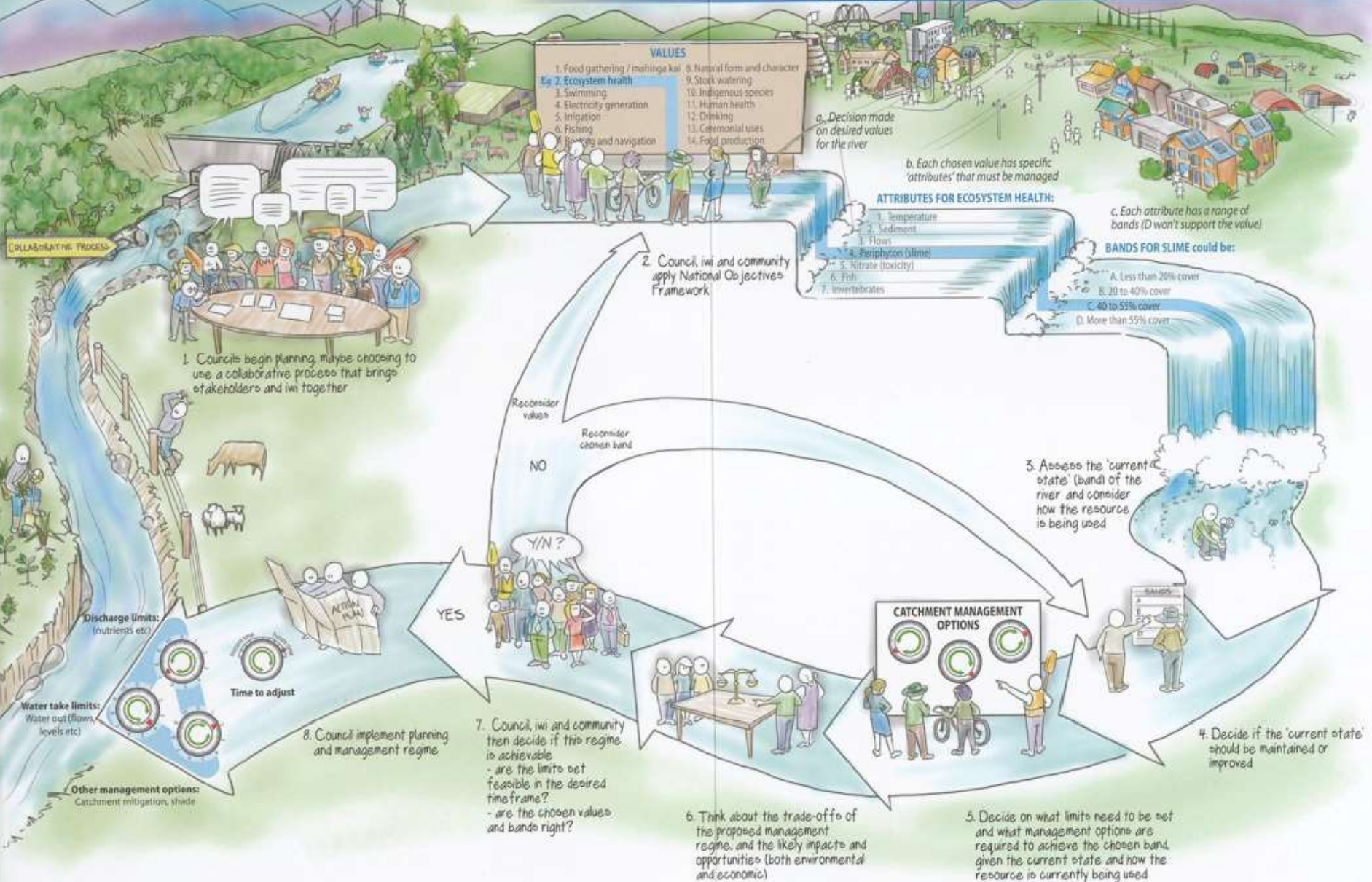
- We are the economic engine room for NZ, and take this responsibility very seriously
- We are internationally recognised for the high quality foods we put onto the table of consumers in 120 countries, including NZ
- We are world leaders at continually meeting the exacting and changing demands of our customers and consumers at home and abroad
- We recognise our stewardship role in looking after the land and water resources...it is our livelihood and where we live as well as the future for our families and for our communities
- We recognise the impacts we are having and have had on the environment and we are taking responsibility for finding and implementing solutions

# The Government's response

- RMA reforms
- The National Policy Statement for Freshwater
- National objectives framework [NOF]
- How to set limits
- Values and Attributes...how these make up water quality
- National bottom lines
- Maintain and Improve

# Managing fresh water in New Zealand

## NATIONAL OBJECTIVES FRAMEWORK



# Process Framework



<- **Setting Limits** ->

<- **Managing to Limits** ->



What Actions / Process do we want at each stage and what do we want considered at each stage ?

How do we influence this ?

What are we comfortable with ?

What will we not accept at each stage ?

What information do we need ? What are we unsure of ?

# NOF

HIGH-LEVEL VALUES AND USES		VALUES AND USES
<b>Te Mana o te Wai</b>		<ul style="list-style-type: none"> <li>Ecosystem health *</li> <li>Human health *</li> <li>Natural form and character</li> </ul>
<b>Mana Tangata</b>	Mahinga kai / food gathering, places of food	<ul style="list-style-type: none"> <li>Mahinga kai</li> <li>Kei te ora te mauri</li> <li>Fishing</li> </ul>
	Mahi mara / cultivation	<ul style="list-style-type: none"> <li>Food security</li> </ul>
	Wai takaro / recreation	<ul style="list-style-type: none"> <li>Contact recreation</li> </ul>
	Wai Tapu / sacred waters	<ul style="list-style-type: none"> <li>Wai tapu</li> </ul>
	Wai Māori / drinking water	<ul style="list-style-type: none"> <li>Water supply</li> <li>Animal drinking water</li> </ul>
	Au Putea / economic or commercial development	<ul style="list-style-type: none"> <li>Commercial and industrial use</li> <li>Irrigation</li> <li>Hydro electric power generation</li> <li>Fire-fighting</li> </ul>
He ara haere / navigation		<ul style="list-style-type: none"> <li>Transport and Tauranga waka</li> </ul> <p>(* = Compulsory values that apply to all water bodies)</p>



a. What values and uses do you want for your river, lake or wetland? NOF table can help

b. Use NOF tables to tell you what to manage to achieve that value

### ATTRIBUTES FOR ECOSYSTEM HEALTH:

Nitrate toxicity

Ammonia toxicity

Dissolved oxygen

Periphyton (slime)

c. How well do you want to provide for each attribute?

### NITRATE TOXICITY ATTRIBUTE STATES:

A. <1.0 mg NO<sub>3</sub>-N/L (annual median)

B. 1.0-2.4 mg NO<sub>3</sub>-N/L (annual median)

C. 2.4-6.9 mg NO<sub>3</sub>-N/L (annual median)

2. Council, iwi and community apply National Objectives Framework (NOF)

# What Do We Need to Know?

- The state of our catchments ...who is doing what where
- What we are doing....MGM project...defining Good Management Practise across all sectors at an equivalent standard and..
- Account for environmental externalities of that land use at that standard of GMP...the Matrix
- Use that information to help develop policies for protecting water quality



# What Else?

- Robust economic analysis of any proposed plans so that public debate is fully informed of consequences
- Validation of Overseer's assumptions around improvements of nutrient loss for varying farm management practises or mitigations...indoor wintering, VRI,
- Some certainty that plans will be robust enough in delivering water quality outcomes
- Time frames that allow balance sheets to adjust

# How Can We Improve These Programmes' Performance?

- GMP when combined with environmental stewardship is all about measuring and planning to eliminate waste....ensuring the best physical and chemical status of your soils for your purpose...so that only the minimum inputs are used to produce the crop ...
- GMP is rewarding financially and environmentally
- GMP is an iterative process that is open ended as new technologies and practises are developed to push production with fewer inputs..



# Is This Enough?

- In many places ....Yes
- In others highly unlikely....
- Over allocated catchments [those that do not meet national bottom lines or community expectations] will need to develop plans that plot a pathway to improve water quality over time

# So what does this mean for a Canterbury dairy farm?

GMP on light soils, 4 cows/ha, high production, irrigation:::::everything done really well

Overseer models nitrate loss at 55kgs/ha

Assume 70% of loss occurs autumn winter

Zone limits require nitrates to go 30kgs/ha

Solution ?!: wintering barn...\$12000/ha capital cost.

Milk cows another 30 days to pay for barn

Production goes up, regional economic activity goes up, need to ensure assumptions are validated to ensure nitrate loss goes down

Those developing catchments should signal any such requirements in advance of development so mitigations can be costed

lit

# Research and Development

- As farmers we are investing millions of dollars a year in R & D to progress the concepts behind GMP...my own operation invests \$30k+/yr in industry levies for R&D..
- The information generated from these programmes makes our sector groups the experts in finding the workable solutions to our contribution to NZ's water quality problems...
- This is our single most important priority!

# Accountability

- We understand the need for accountability
- It is important that that accountability at farm level is to those who can influence behaviour the most...the carrot vs the stick
- Programmes driven by industry will work and can be framed as market requirements
- Programmes driven by regulation will encourage creative reporting and evasion

# Conclusions

- Before we embark too far on ambitious development projects we need to sort out how we are addressing water quality problems
- RC's and Central Government need to work more closely with us the experts, and take less advice from those others....
- We need to feel we own the problem and the solutions
- We've come a long way in the last 2 years...
- Trust us to bring us home safely
- We all want the same thing!