

# Integrated Catchment Management (ICM) Workshop



**Horizons Regional Council  
April 2006**



Manaaki Whenua  
Landcare Research

## Problem context for science

## Supporting approaches

Production

1970's

- Enterprise or single sector goals
- few stakeholders
- success measured by economics/production

Single stakeholder consultation

- ask clients about needs
- obtain knowledge from experts
- deliver improved technologies (system components)

Productivity



Single stakeholder participatory

- involve clients in research
- improved technologies & fine tuning existing systems

Sustainability

1990's

- multiple goals
- many stakeholders
- success measured in terms of ecological health & equity

Multi-stakeholder participatory

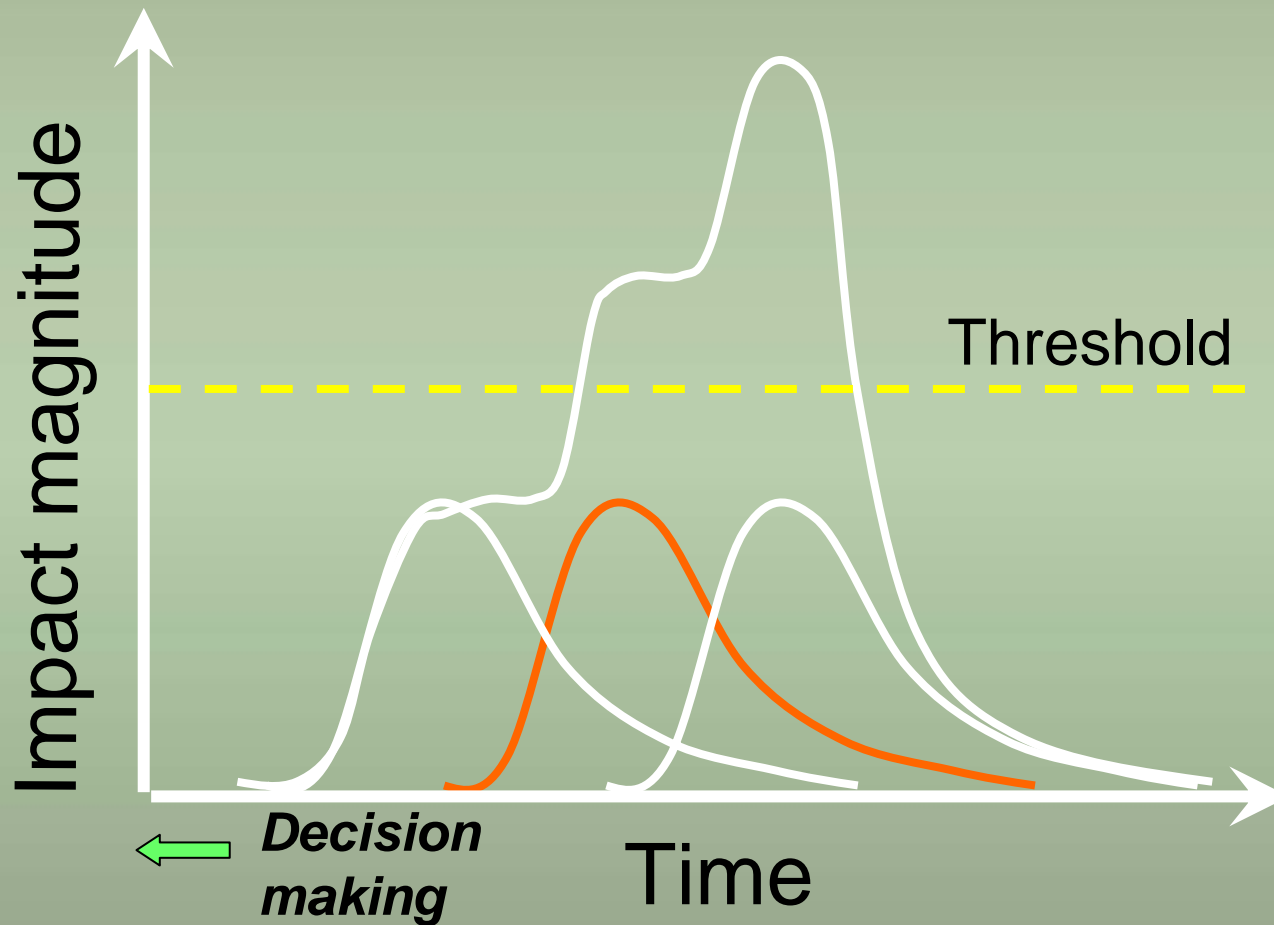
- collaborative learning
- shared understanding
- change oriented
- designing NEW systems

**ACTION RESEARCH**

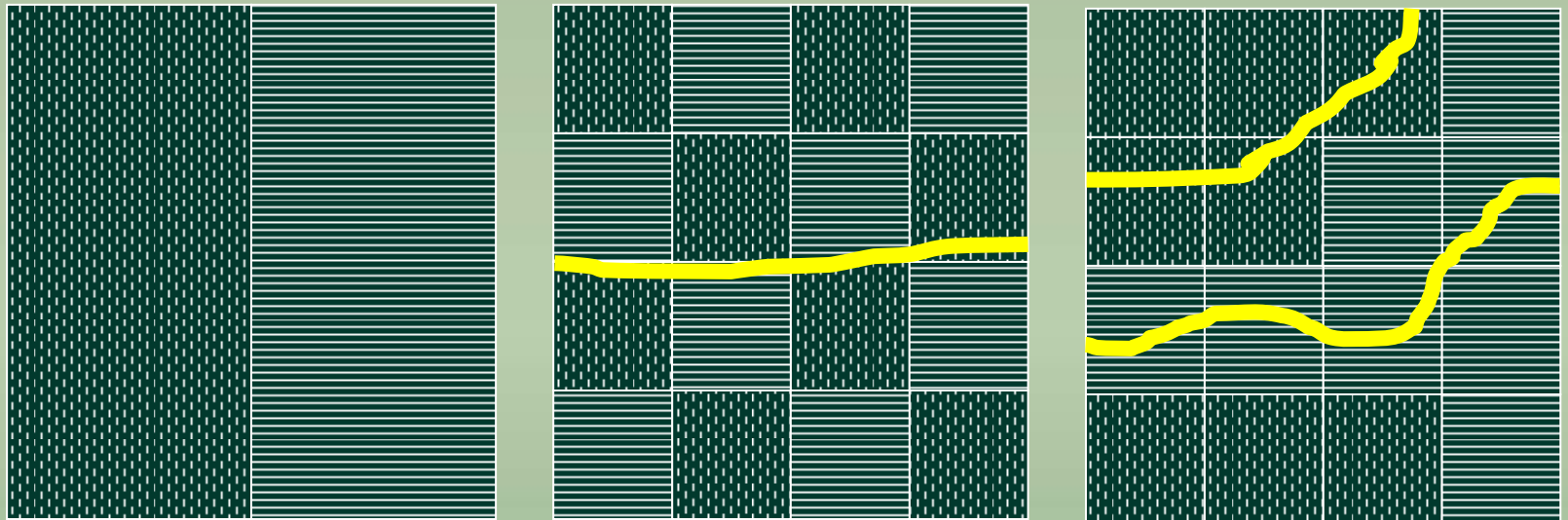


# Temporal organisation of resource uses

## *Cumulative impacts*



# Spatial organisation of resource uses



*...spatial juxtaposition matters*

# Integrated Catchment Management in simple terms

- 1. Everything is connected to everything else**
- 2. Everything must go somewhere**
- 3. Nature knows best**
- 4. There's no such thing as a free lunch**



# Defining Integrated Catchment Management

---

Integrated Catchment Management is a **process**

that recognises the **catchment** as the appropriate organising unit for understanding and managing **ecosystem processes**

in a context that includes social, economic and political considerations, and

guides communities towards an agreed vision of **sustainable natural resource management** in their catchment

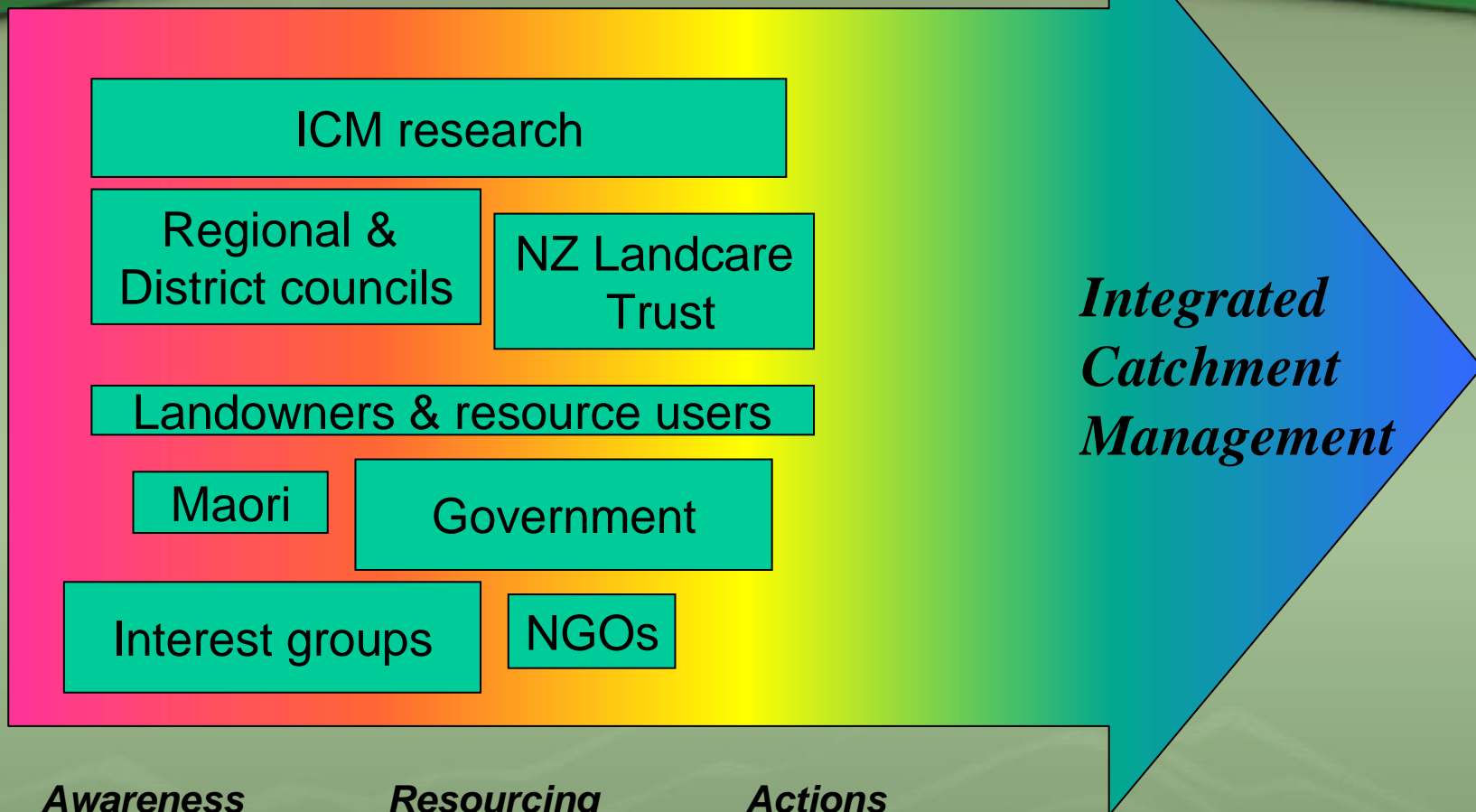


# Integrated Catchment Management

...a partnership approach



# Different Players in ICM



*Awareness*

*Knowledge*

*Resourcing*

*Commitment*

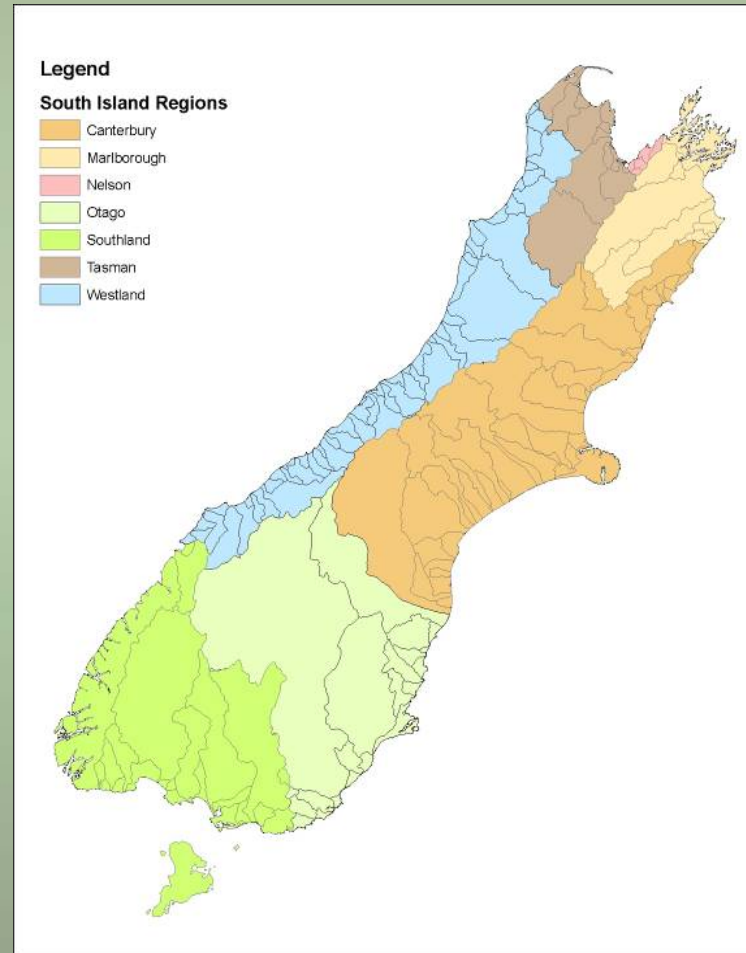
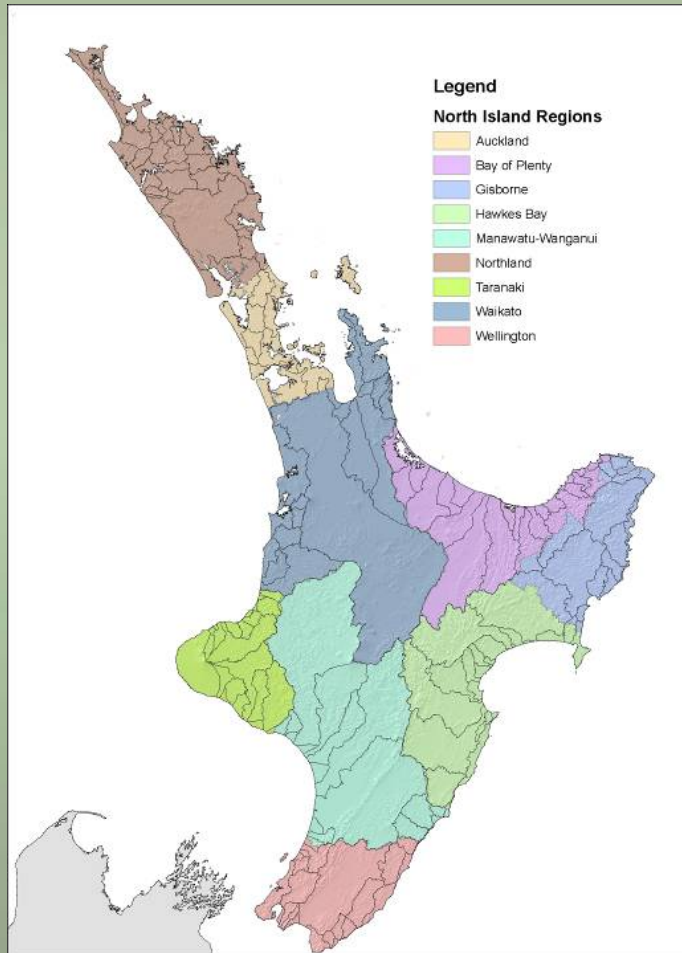
*Actions*

*Cumulative Benefits*

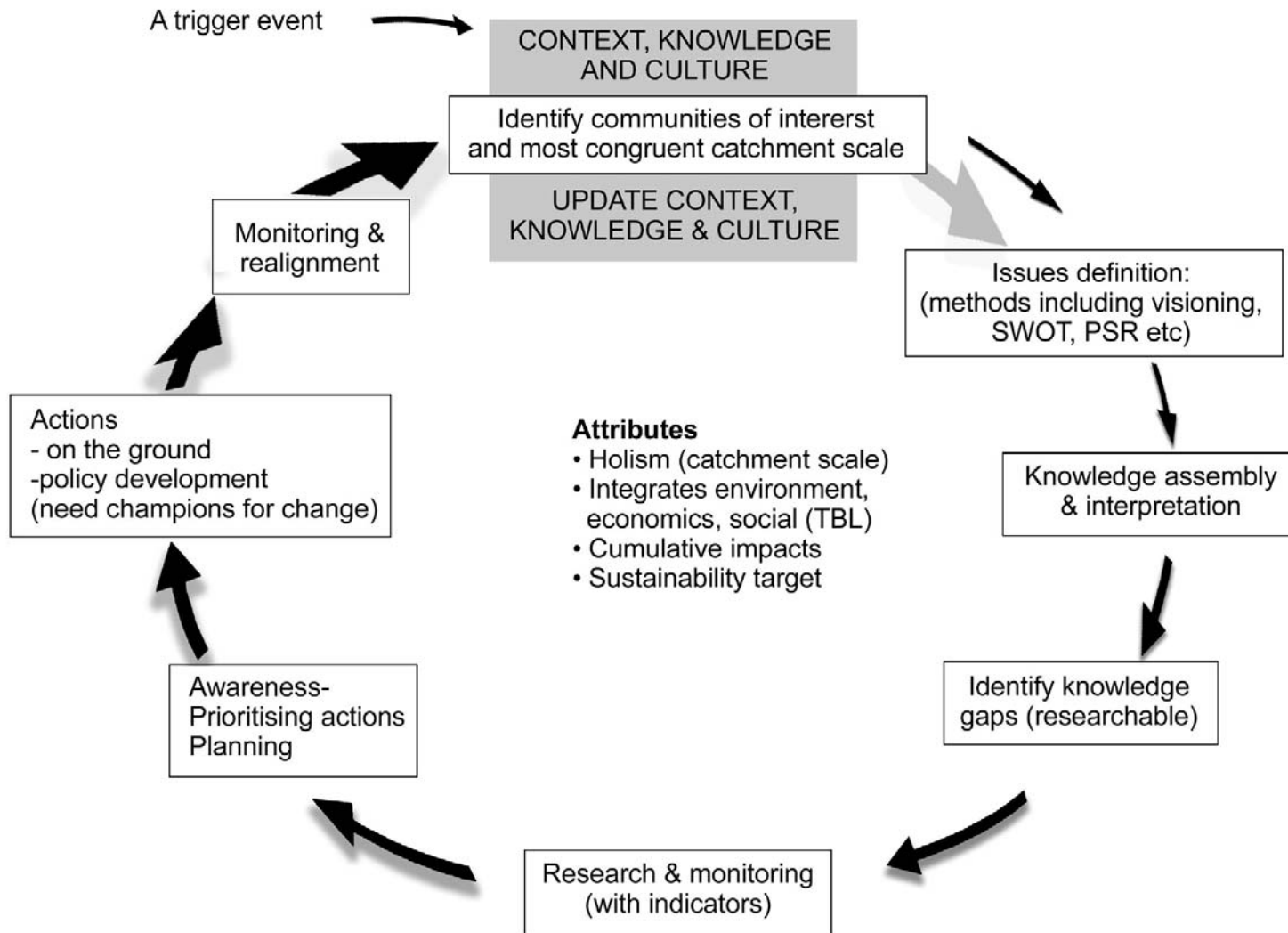




# A Vision for ICM across NZ



# ICM as a process



# Linking ICM into RMA Processes

- ICM integrates land, water, coastal & people
- Water is an integrating feature: catchments are made and defined by water flows
- LTCCP could link long-term community vision to RMA catchment regional plans
- Vision requires trend and demand assessment: effects management is not enough.
- *One Plan* concept organized around catchments?



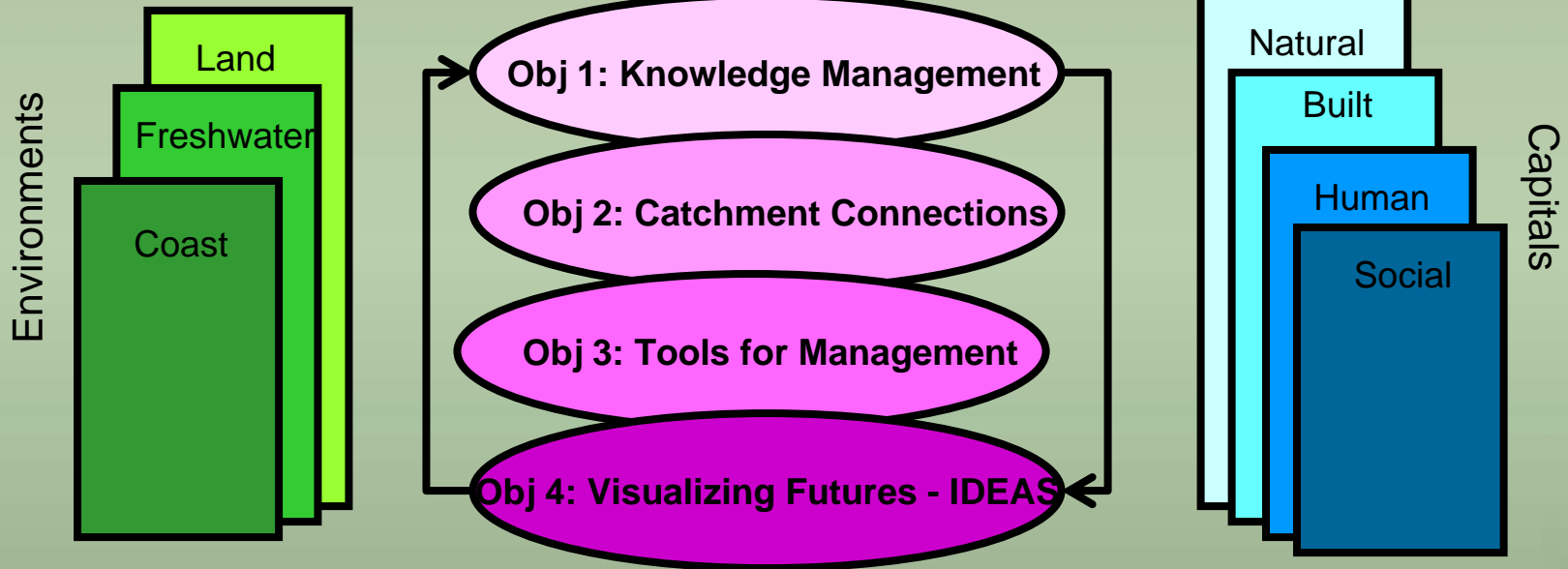
# ICM Research Overview

Inheritance

*Perspective –  
Ridge tops to sea*

*ICM Approach –  
Integration & Innovation*

*Outcomes –  
Improved Management*

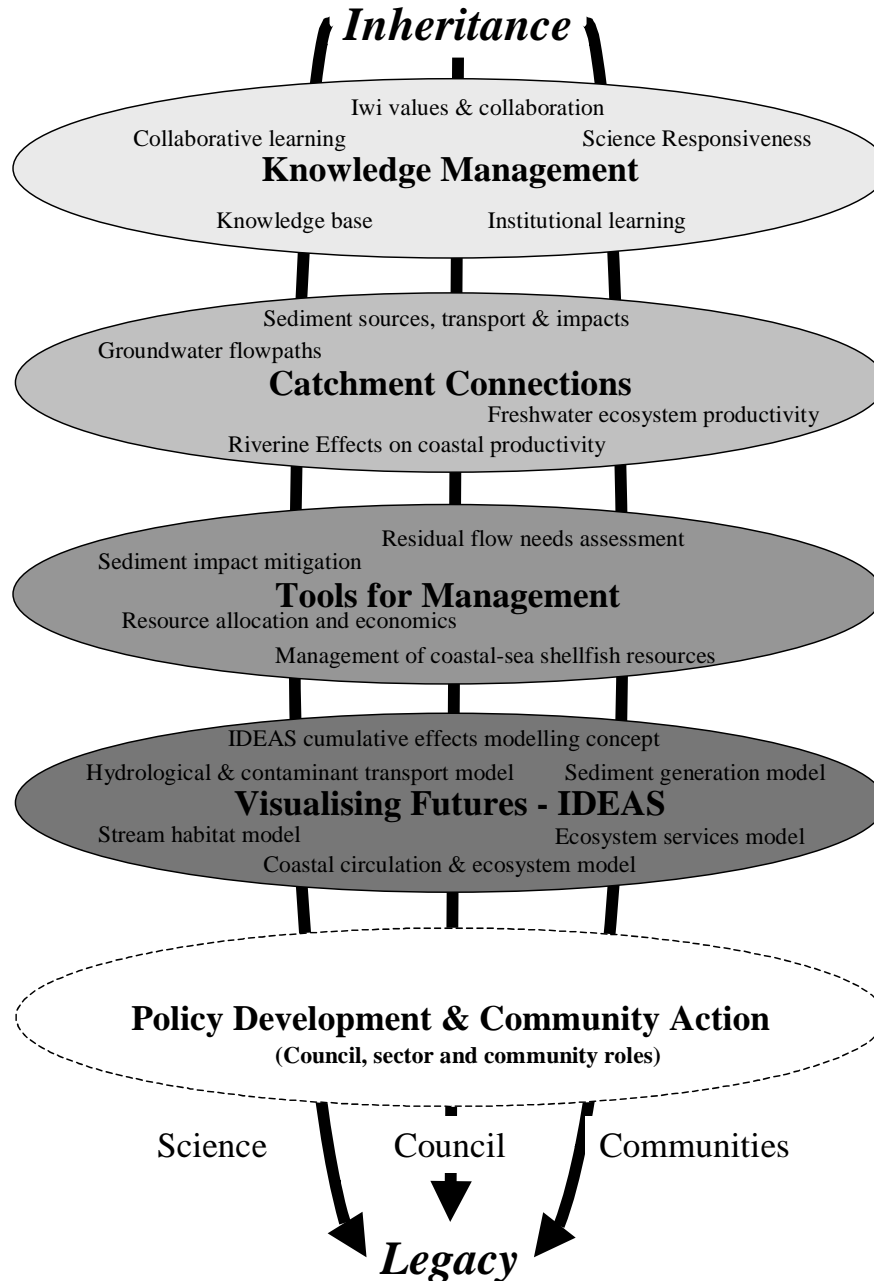


Sustainable  
Futures

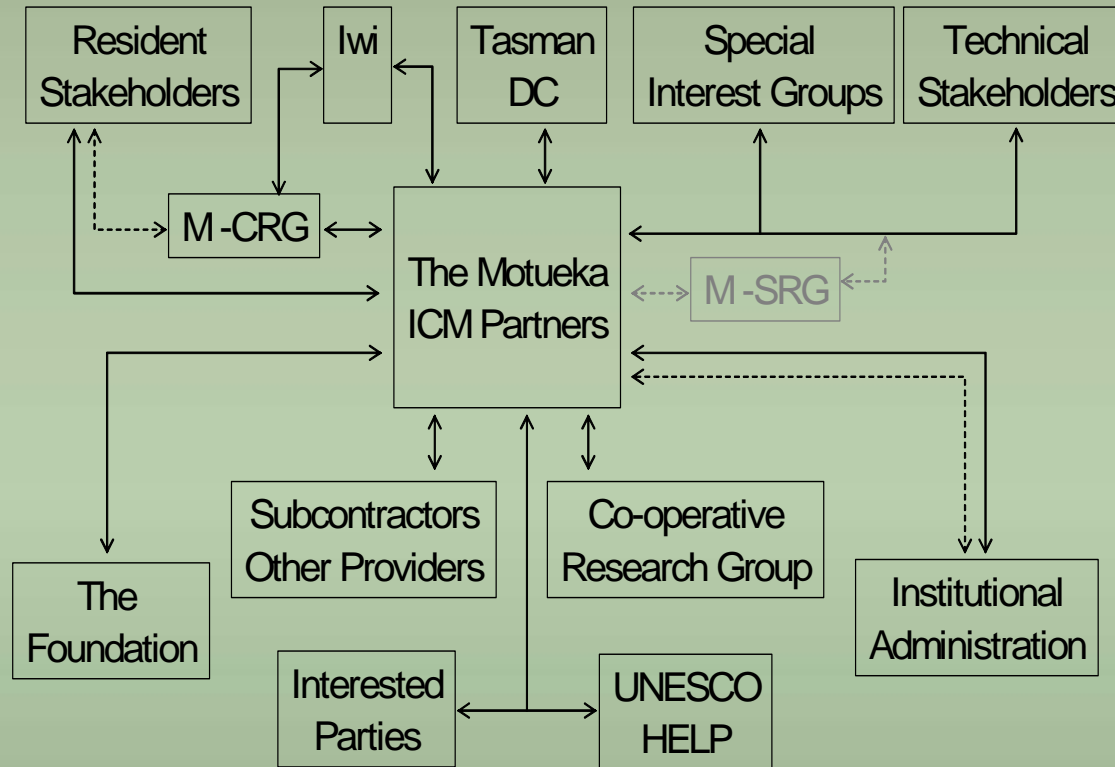




# ICM as a process: 2003-2009 research objectives (4)



# How is the local community involved?



Motueka ICM stakeholder network

# 'Integrating' Research Elements

- Research links between environments:
  - ✓ Land - water
  - ✓ Freshwater - marine
  - ✓ Human - land & water
  - ✓ Iwi - pakeha
  - ✓ Groundwater - rivers
- Quadruple bottom line:
  - ✓ ecological – economic – social – cultural
- Whole system sustainability
- Collaborative learning, adaptive management
- IDEAS modelling
- An integrating theory for catchment management





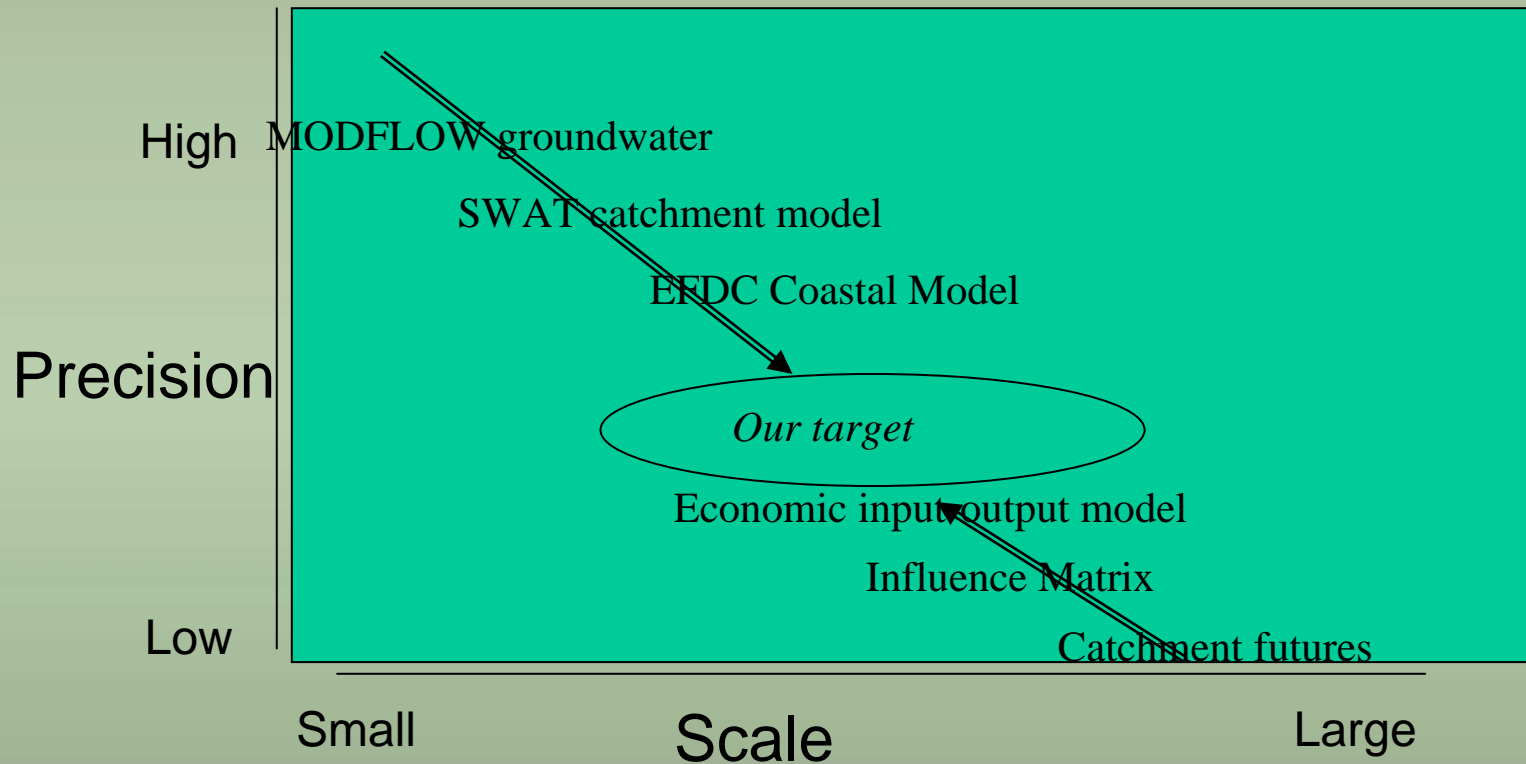
# Elements of successful integration

- Science disciplines working together
- Scientists and end-users widen their perspectives (trans-disciplinarity)
- Long-term planning processes combine science knowledge and community expectations to better balance social, environmental and economic goals
- Solutions to specific problems as they arise with reducing timeframes between problem identification, policy and action
- Generating approaches that can be applied elsewhere
- Realising that ICM is as much about the process as any final outcome



# Biophysical & socio-economic Integration

## The IDEAS modelling framework



# Collaborative Learning & Engagement for ICM

- Aligning communities & catchment scales
- Structuring & forging effective groups
- Identifying leaders and champions
- Building relationships & trust
- Collective ownership of ICM process
- Importance of Communication
- Having an Agreed Vision
- Science incorporated at 'grass roots', e.g. mediated modelling



# Attributes of ICM

- Catchments congruent with communities
- Fitting into an RMA context
- Ways of addressing the issues:
  - Community champions
  - Pressure-State-Response
  - Managing human vs natural impacts (risk)
  - Scale consistent with issue
- Monitoring: Indicators and thresholds
- Always keeping the big picture in mind: *ridgetops to the sea.*



# ICM as a process

