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INTEGRATED CATCHMENT MANAGEMENT
for the Motueka River

The Promise of Integrated Catchment Management (ICM)

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CAWTHRON

TDC Tasman District Council

NIWA
Taihoro Nukurangi

Common Ground Associates Ltd

Motueka Iwi Resource Management Komiti (MIRMAK)

nz landcare trust
nga matapopore whenua

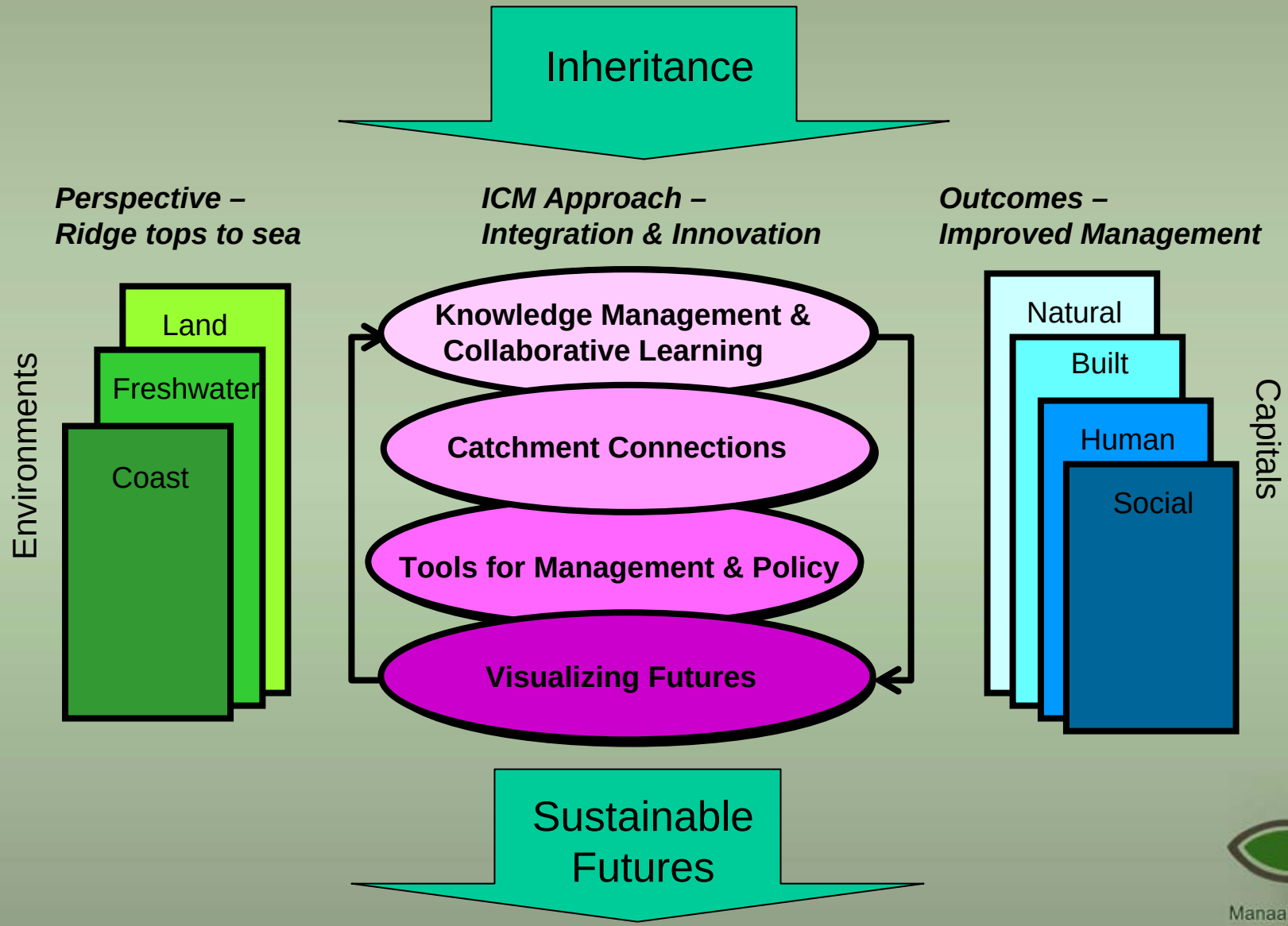
Fish & Game NEW ZEALAND

forest research

Institute of GEOLOGICAL & NUCLEAR SCIENCES Limited

SCIENCE MAKING A DIFFERENCE FOR A TRULY CLEAN, GREEN SUSTAINABLE NEW ZEALAND

ICM Research Overview



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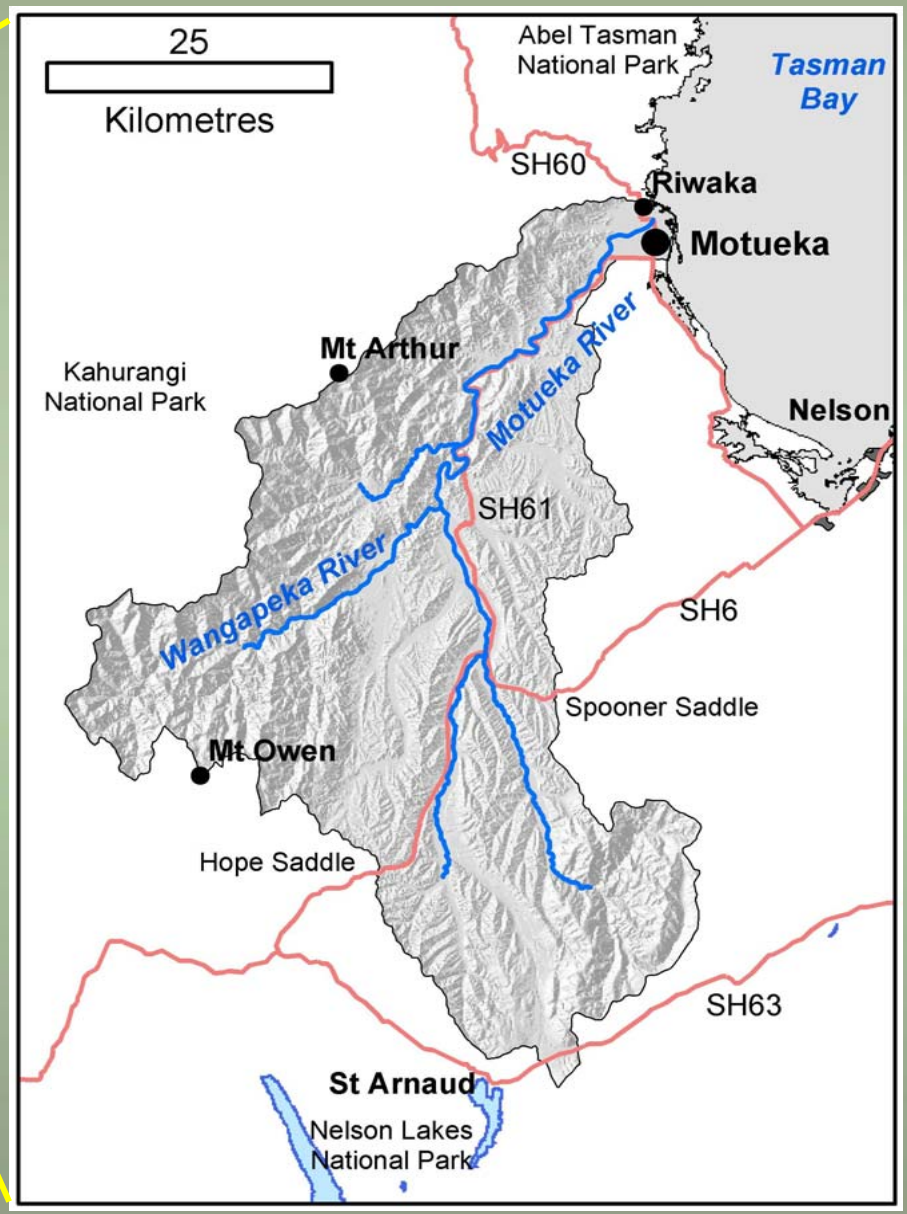
Motueka catchment



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Water allocation issues in the Motueka

Efficient and equitable allocation –

1. How much extraction to allow considering the important instream values?
2. How to fairly allocate this extraction?
3. What are the major influences on long-term water availability, and effects of changing flows downstream to Tasman Bay?

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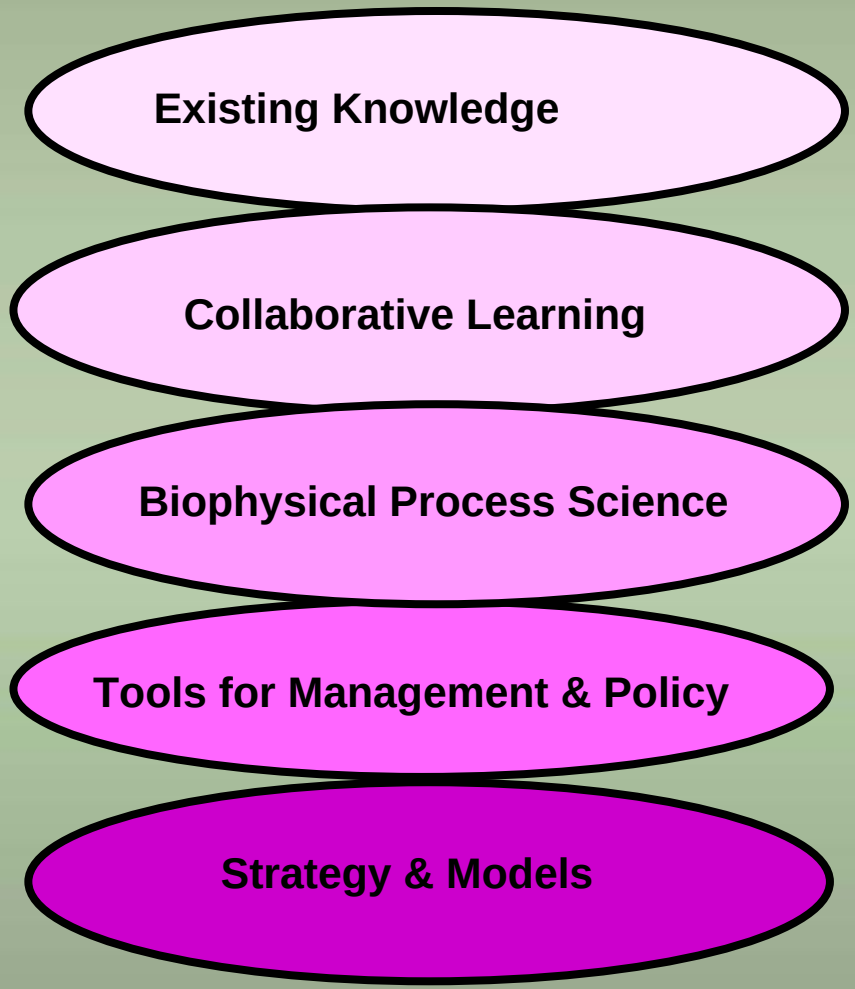
ICM Components



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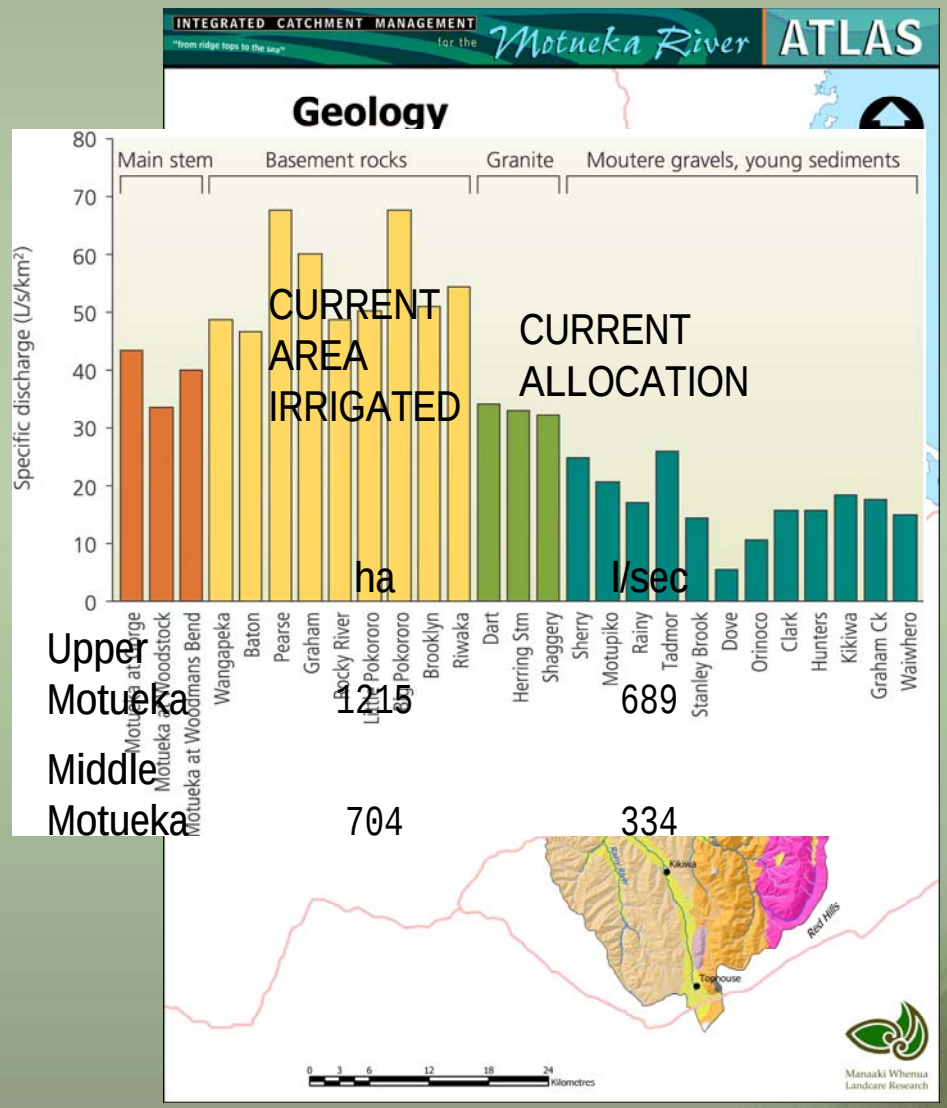
Existing Knowledge

- Geology, land use
- River and groundwater hydrology
- Existing water allocations

- Advocacy positions of stakeholders?



Collaborative learning context

Motueka Water Conservation Order example

The players -

- Water users, present and potential (mainly irrigators – *Land Owners Water Action Group* in this case; water user committees)
- Council policy & science staff
- Environmental and iwi advocates (Fish & Game, DOC, river recreation and environmental groups)
- Development interests (hydropower, reticulated community supplies, forestry sometimes)

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8 Critical Success Factors for effective ICM learning (1)

1. **A legal and institutional setting which facilitates resolution of the issues**
2. **Strategic planning to anticipate the issues, collect relevant information and initiate dialogue before the issue becomes a crisis**
3. **Vision, leadership and structure for the process**
4. **Involving all relevant stakeholder groups and engaging with stakeholder representatives who actually have decision-making power**

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8 Critical Success Factors for effective ICM learning (2)

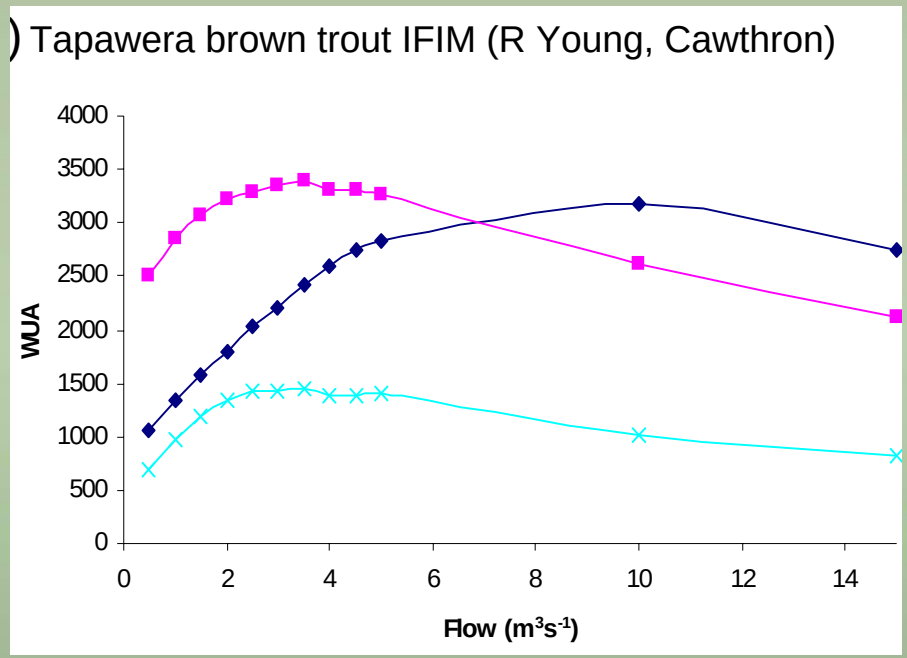
5. **Adequate definition of the issue, including issue boundaries and spatial and time scales**
6. **Adequate information upon which to base the dialogue, and strong, accepted science**
7. **Accept local knowledge, including validated anecdotal knowledge, not just science**
8. **Workable solutions expressed clearly and succinctly**

Bowden, Fenemor, Deans 2004: Water Resources Development 20(3): 311–323

Specific Knowledge Needs
Motueka Water Conservation Order

- Advocacy positions of interested parties
- Water demand, now and over next 20 years
- Flow needs of instream values

… assessed in the context of catchment hydrology knowledge



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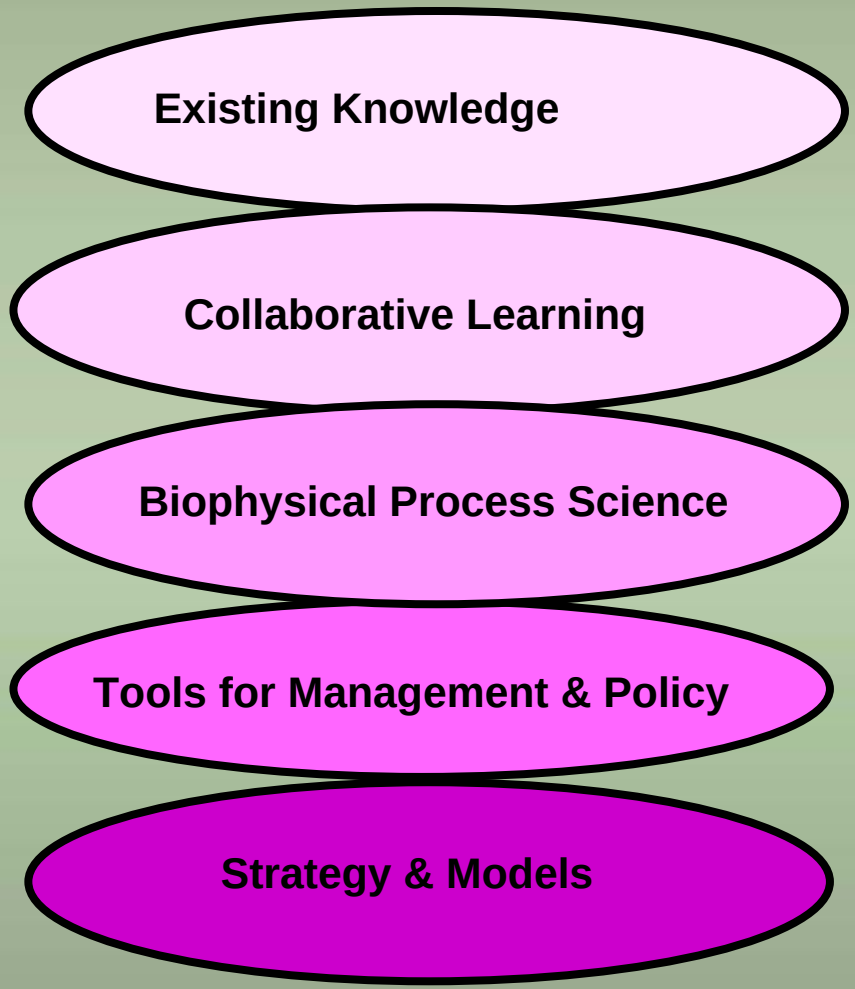
ICM Components



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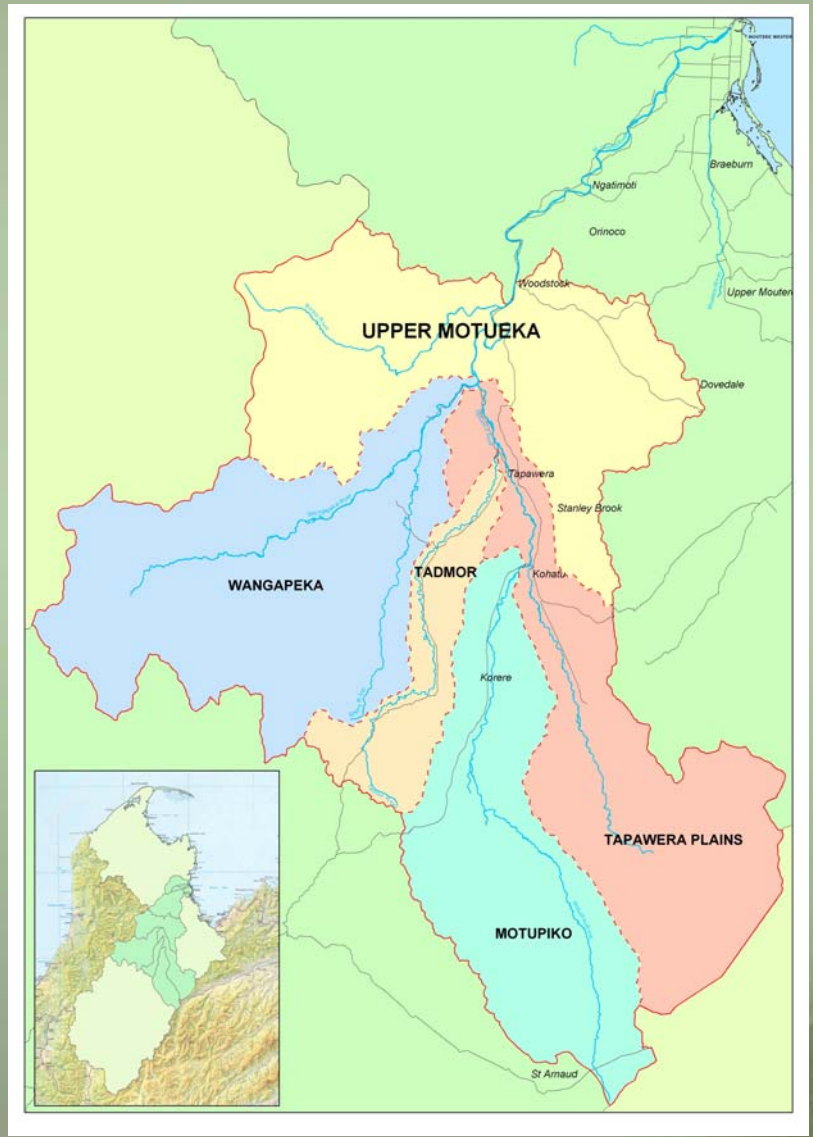
Tools for Water Allocation

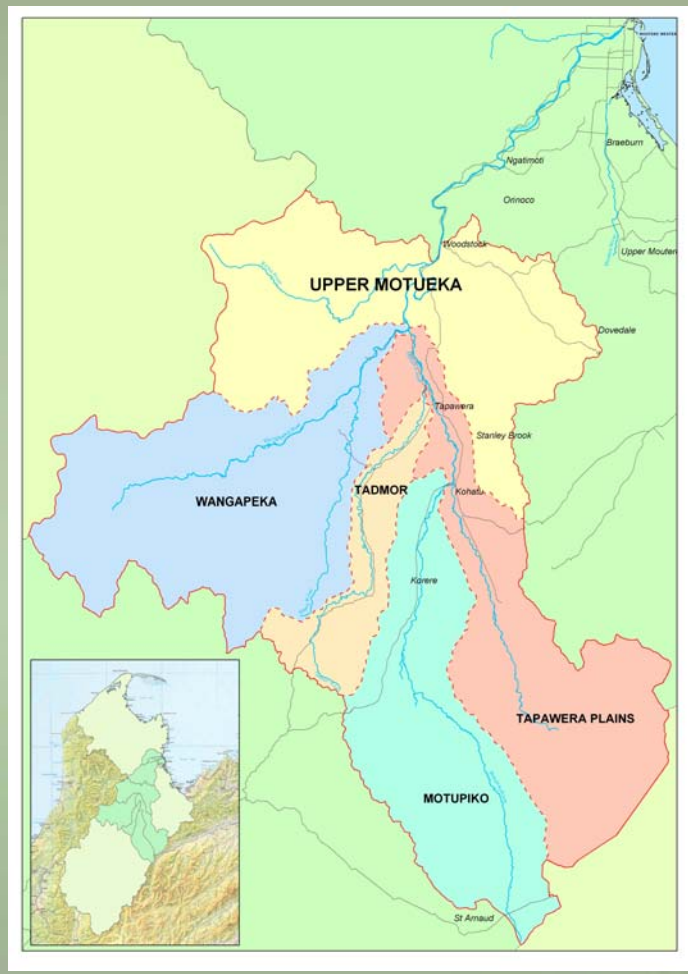
Policy Level

- Allocation Limits by subcatchment
- Rationing Rules for Water Sharing during low flows
- Water Use Limits e.g. 300 m^3/ha/week for irrigation, by soil type



Water Allocation Limits Adopted by TDC

WATER MANAGEMENT ZONES	ALLOCATION LIMITS (litres per second)
Upper Motueka Zone *comprising*	**1000**
Wangapeka	**265**
Motupiko	**110**
Tadmor (total augmented flow)	**56**
Tapawera Plains	**515**
red = fully allocated zone (2006)	



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Strategy & Models

Motueka water allocation context – strategic issues

- Improving allocation systems, especially for re-allocation

Enhancing Water Use Flexibility and Security using the Motueka Catchment as a case study (with Ecologic)

- When rivers and aquifers are fully allocated, there's water augmentation (storage)

Motupiko Water Augmentation Project

- Land cover change consequences for river flows and groundwater recharge

WATYIELD and SWAT models (Tim Davie)

- Ecosystem services and futures

Motueka Futures and IDEAS modelling

- Flooding and flow impacts on freshwater and coastal ecosystems

Cawthron (Roger Young & Paul Gillespie)

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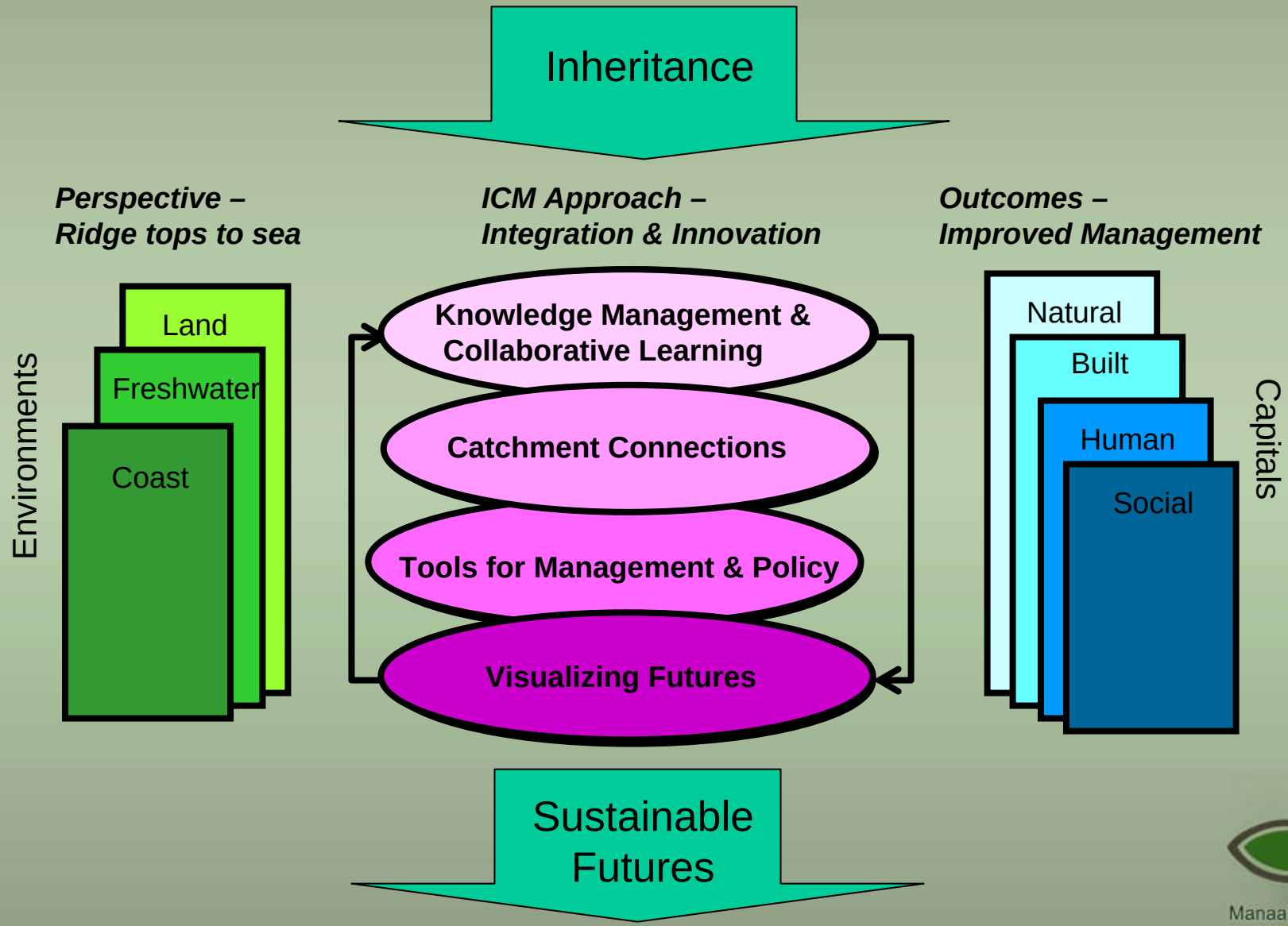
ICM Research Overview



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Defining
Integrated Catchment Management

Integrated Catchment Management is a process

that recognises the catchment as the appropriate organising unit for understanding and managing land and water

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

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