The Motueka Integrated Catchment Management (ICM) research programme

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acknowledging the Motueka-ICM team
Where is the Motueka?

Water allocation
Land use effects on water
Catchment effects on Tasman Bay
Managing cumulative effects
Building community capability
ICM-Motueka results/lessons

- “Catchments” extend offshore - River plume ecosystem
- Voluntary community action can improve water quality
- Long term sediment yield larger from agricultural land than forestry
- Trout decline due to timing, duration and size of big floods
- Involving people with scenario development in models is a great way to ground and engage stakeholders (IDEAS modelling)
- Need to honour and understand Maori views (kaitiakitanga) alongside western approaches (Cultural indicators)
- Good ICM is issue driven .... And operates across scales
- Effective catchment management requires good knowledge management - linking biophysical knowledge and social process
- Requires skills in engaging multiple stakeholders
- Engage stakeholders to see the big picture (catchment scale) and understand their influence in it - identify physical & social leverage points

ICM wrap-up 26-28 April in Nelson
Visualising ICM as a long-term process, made up of different management challenges

Lessons about integration
What is ICM?

Policy
  - Shared vision e.g. LTCCP
  - Funding mechanisms
  - Willing constituents

New partnerships
  - Landcare groups
  - Changing practices
  - New infrastructure

Reviews
  - SoE programmes
  - Social and economic change
ICM orders of outcomes

1st Order
Enabling

- Policy
- Shared vision e.g. LTCCP
- Funding mechanisms
- Willing constituents

2nd Order
Practice change

- New partnerships
- Landcare groups
- Changing practices
- New infrastructure

3rd Order
The harvest

- Reviews
- SoE programmes
- Social and economic change
highlighting that ICM takes time

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TIME
need to move beyond efficiency

EFFICIENCY ———— EFFECTIVENESS ————

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TIME
and link across scales

Enabling Practice change The harvest

SCALE
NATIONAL
REGIONAL
LOCAL

Policy
Shared vision e.g. LTCCP
Funding mechanisms
Willing constituents

New partnerships
Landcare groups
Changing practices
New infrastructure

Reviews
SoE programmes
Social and economic change

TIME
Management challenges

There are different systems involved

- Simple
- Complicated
- Complex and adaptive

- Need to understand them
- And use different management styles
Simple systems … call for generic solutions (or recipes) that work every time and don’t require new skills or infrastructure.
Complicated systems require a high level of skills and co-ordination, formulae are necessary, and there is a high degree of certainty of outcome.
Complex adaptive systems … every child is unique, uncertainty of outcome remains, expertise can help but is not sufficient.

Quality of relationships are crucial.
Is it complicated or complex?

Simple and complicated systems can be designed and built (irrigation systems, dams).

Complex adaptive systems are made up of multiple interconnected elements, and adaptive in that they have the capacity to change and learn from experience (groups, communities, institutions).
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<th>Managing a complex adaptive system</th>
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<td>• Develop explicit plans</td>
<td>• Look for divergence</td>
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<td>• Plan then act</td>
<td>• Act, learn, and plan at the same time</td>
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<td>• Look for agreement &amp; clear outcome</td>
<td>• Use minimum specifications</td>
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<td>• Limit types of approaches &amp; actions</td>
<td>• Work on multiple leverage points</td>
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<td>• Set targets</td>
<td>• Be creative with opportunities at the boundaries</td>
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<td>• Drive implementation</td>
<td>• Build on what emerges and grows</td>
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Understanding the problems and getting the questions right can resolve social tensions and revitalize groups engaged in change processes.

- It’s about working together
- It’s about making the big picture visible
- Identifying leverage points (SMART)
- And going between the different levels
7 key Lessons from ICM Motueka

1 – Clarify the goal & work with key people
2 – Manage expectations
3 – Agree on integrative concepts
4 – Leadership
5 – Communication with trust & respect
6 – Different learning means different knowledge products
7 – Measure & celebrate success

These are directly transferable to all projects
Lesson 1: Clarify the goal & work with key people

**Goal:** undertake research to help improve the management of land, freshwater, and near-coastal environments in catchments with multiple, interacting, and potentially conflicting land and water uses.
Lesson 2: Manage expectations

- Internally
- Externally
- Need time
- Keep bigger goal in mind
Lesson 3: Agree on integrative concepts

- Make integration part of the project
- Start integration at the beginning
- Plan an integrated project
- Multiple levels of interaction

Bowden et al. (2004)

- BMPs
- Guidelines
- DSS
- Models
- Reports
- Experience

Issues

- Land
- Freshwater
- Coastal/Sea

Collaborative Learning

State & response

Human dimension

Integration & innovation
Lesson 3 cont.:
Agree on integrative concepts & face the challenge of epistemology

- What was integration?
- What did it look like?
- Bit of a struggle early on
- Some got “it”, others haven’t
- ICM was the unifying concept
Lesson 4: Good leadership & management

- 2 leaders – 2 styles
- End user partner became leader
- Both did some science
- Maintaining the momentum
Lesson 5: Communication with trust & respect

Mutual trust, understanding and respect are pre-conditions for integrative and collaborative work.
Lesson 6:
Different learning means different products

- Wider K products
- Publish or perish
- Different paradigm
Lesson 7: Measure & celebrate success

- Evaluation & reporting
- Different metrics, e.g. capacity building
- Relationships
Integration - up the creek with a paddle?

“Scientists cannot afford to remain detached experts who deliver knowledge to managers, but must assume the roles of collaborative learners and knowledge generators in a science-management partnership”

Roux et al. (2006)
“The real voyage of discovery consists not in seeking new landscapes, but in having new eyes”.

- Marcel Proust