Landcare Research
Manaaki Whenua

The Motueka Integrated Catchment Management (ICM) research programme

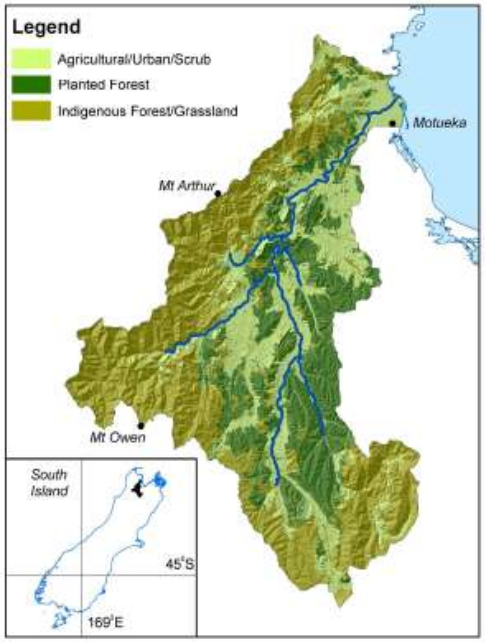
Will Allen, Chris Phillips, Andrew Fenemor

acknowledging the Motueka-ICM team

INTEGRATED CATCHMENT MANAGEMENT for the Motueka River

•ridge tops to the sea•

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

in this talk …..

- Visualising ICM as a long-term process, requiring different management skill sets
- Lessons about integration

What is ICM?

Policy

Shared vision
e.g. LTCCP

Funding
mechanisms

Willing
constituents

New
partnerships

Landcare
groups

Changing
practices

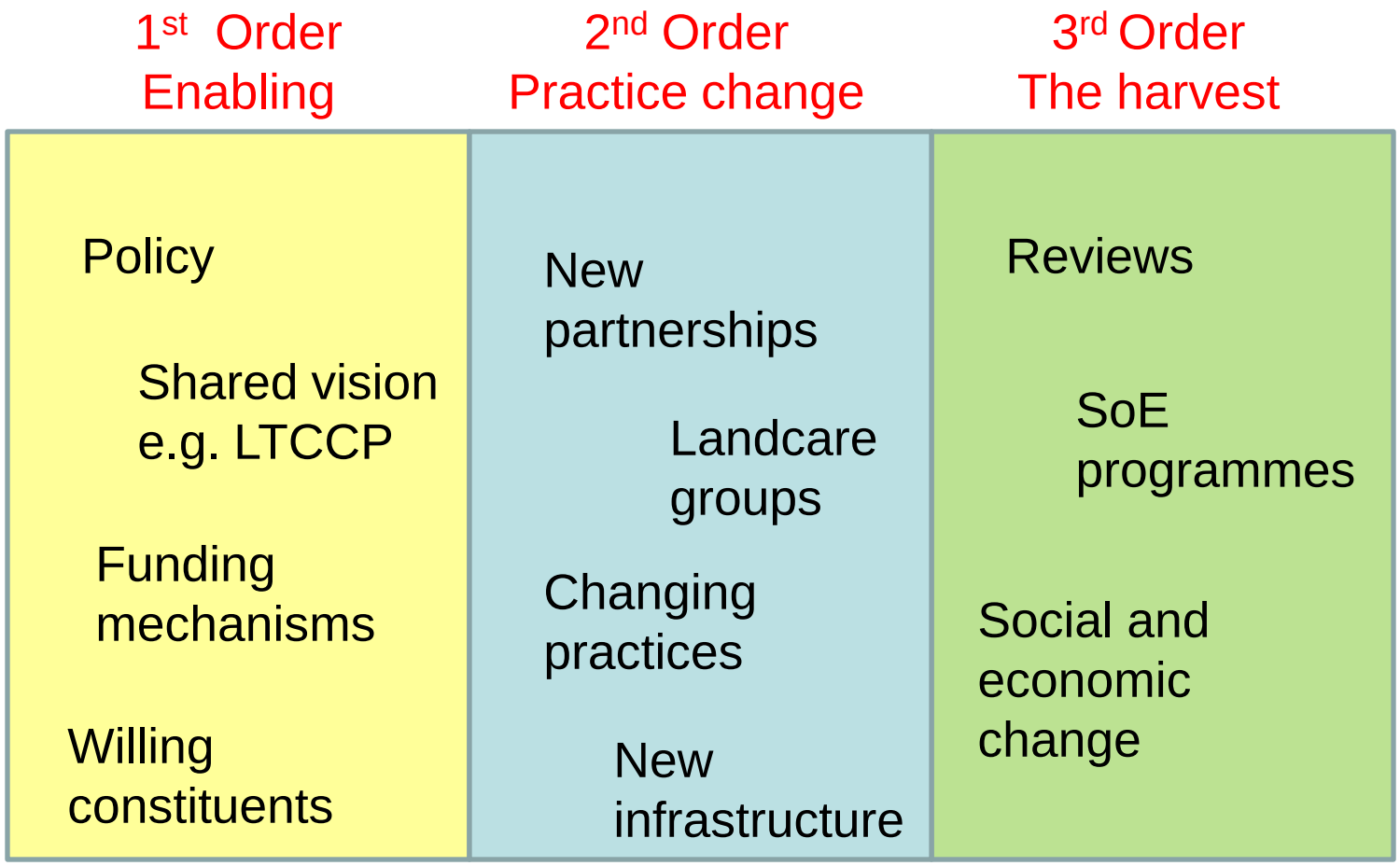
New
infrastructure

Reviews

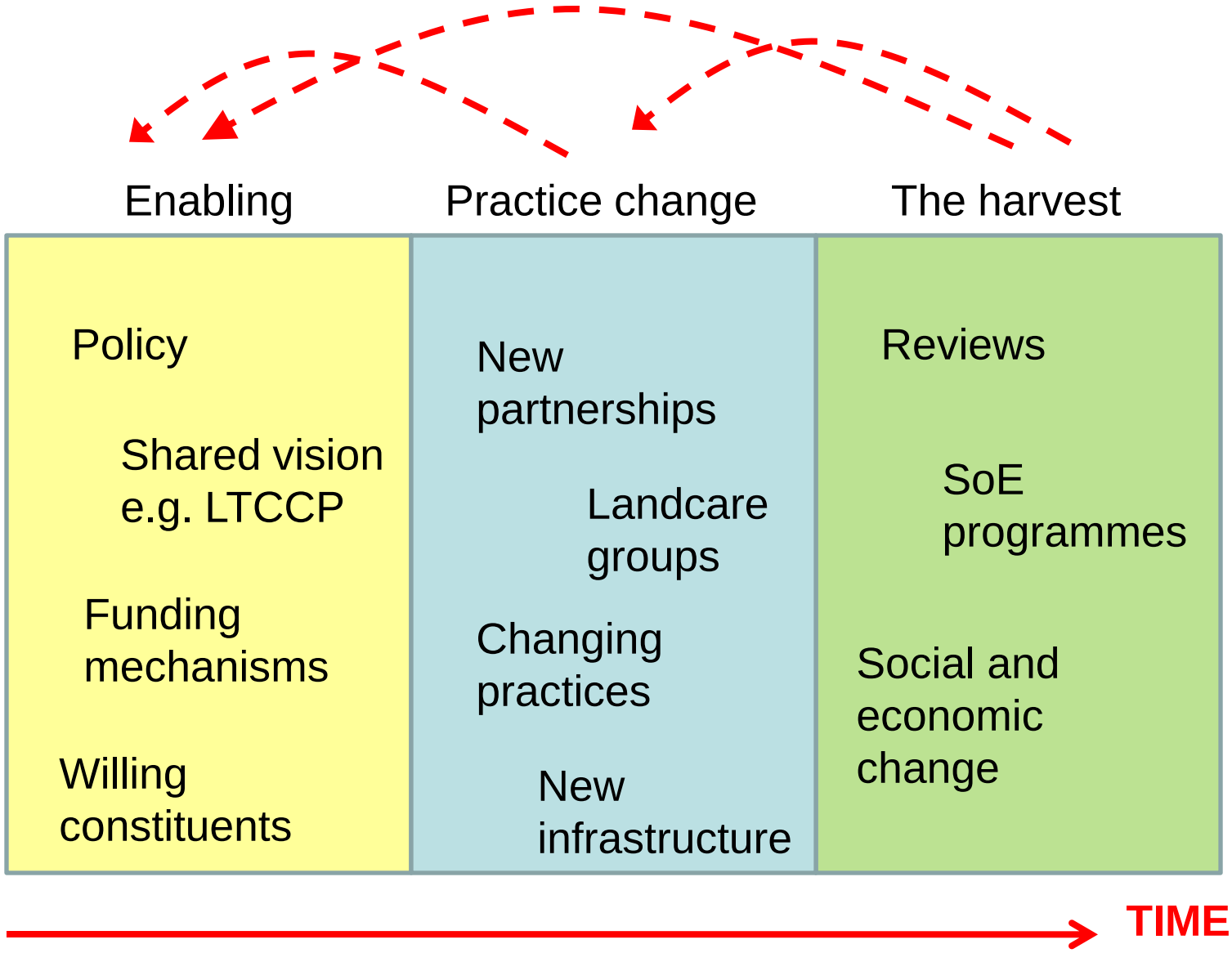
SoE
programmes

Social and
economic
change

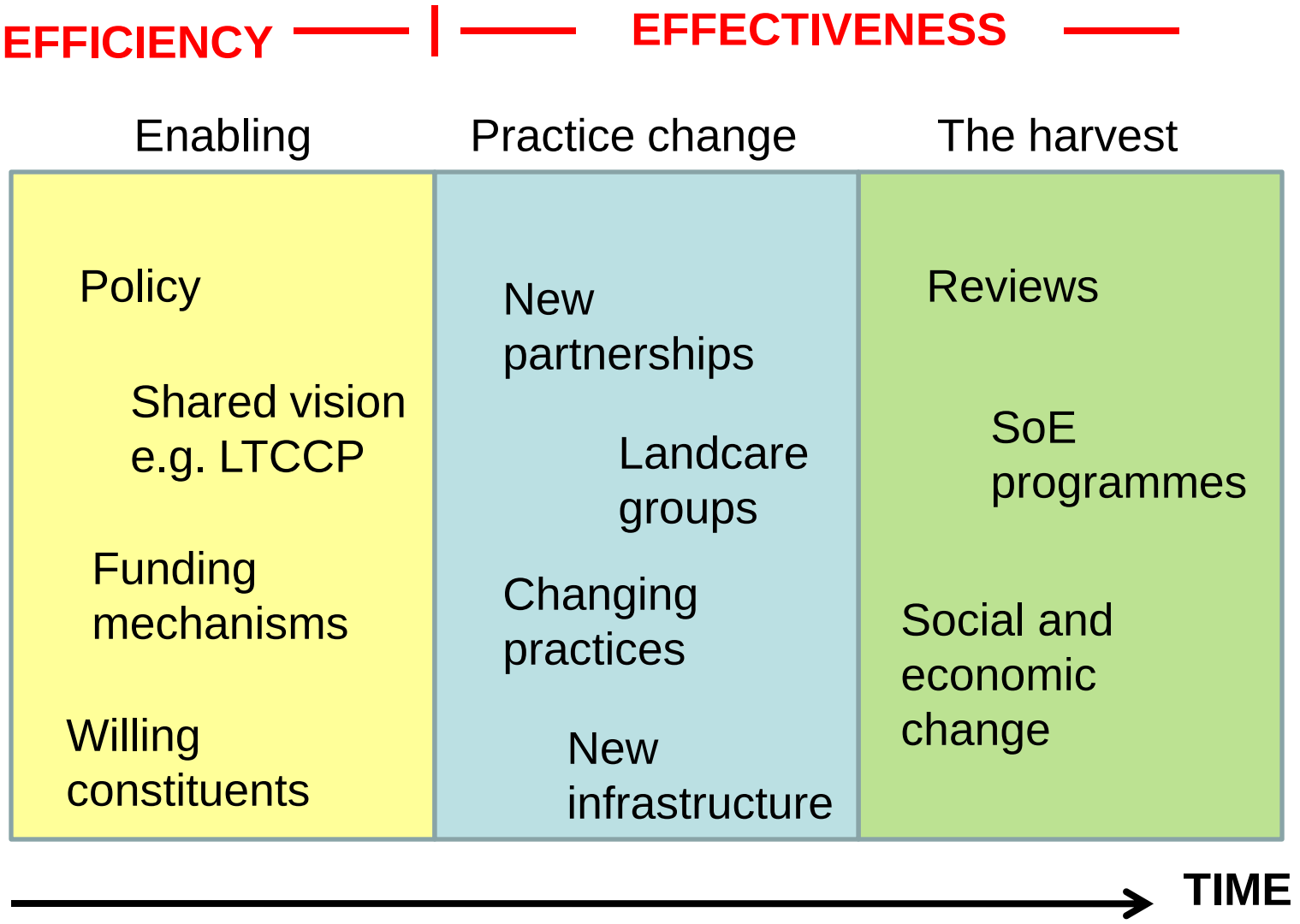
ICM orders of outcomes



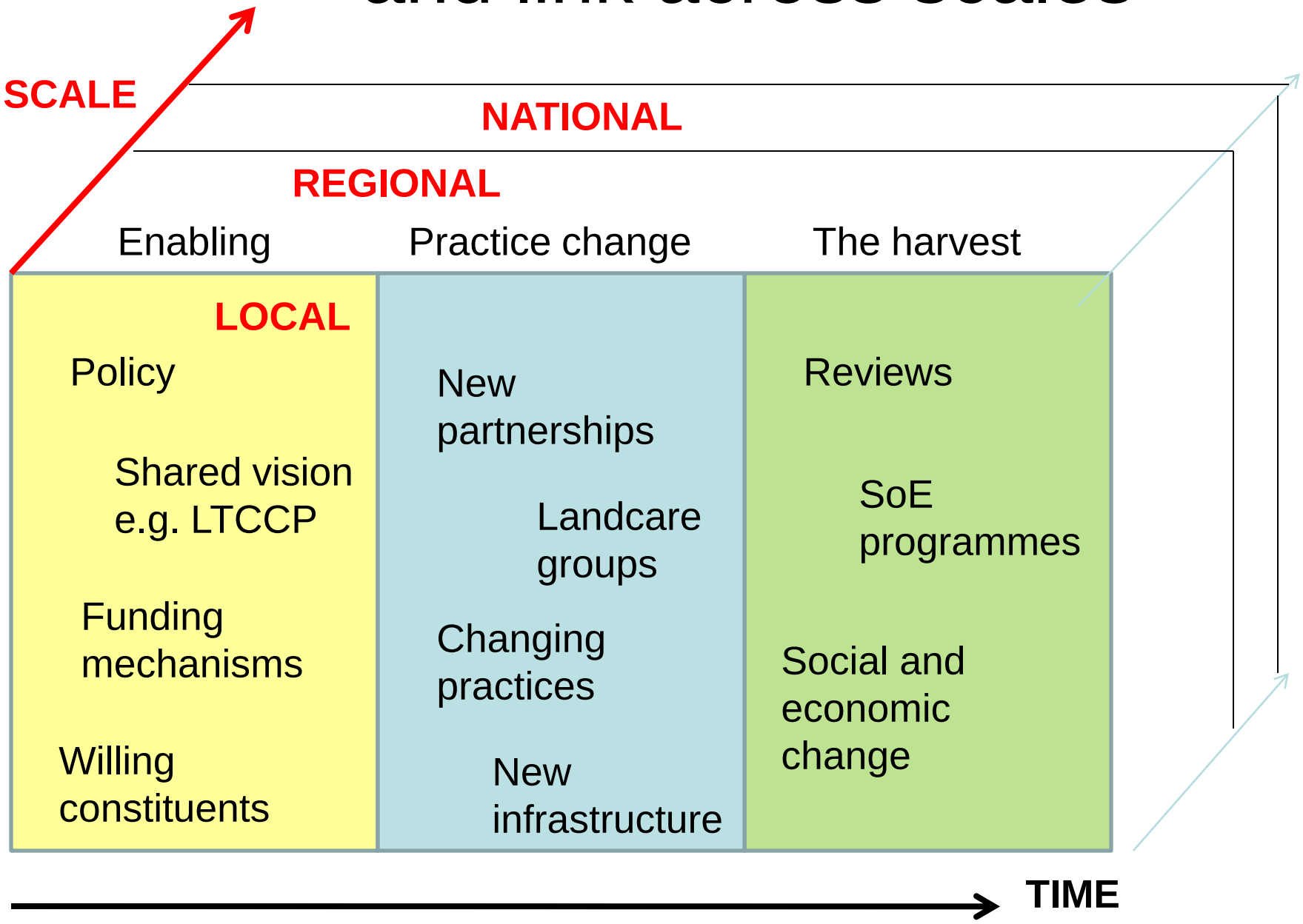
highlighting that ICM takes time



need to move beyond efficiency



and link across scales



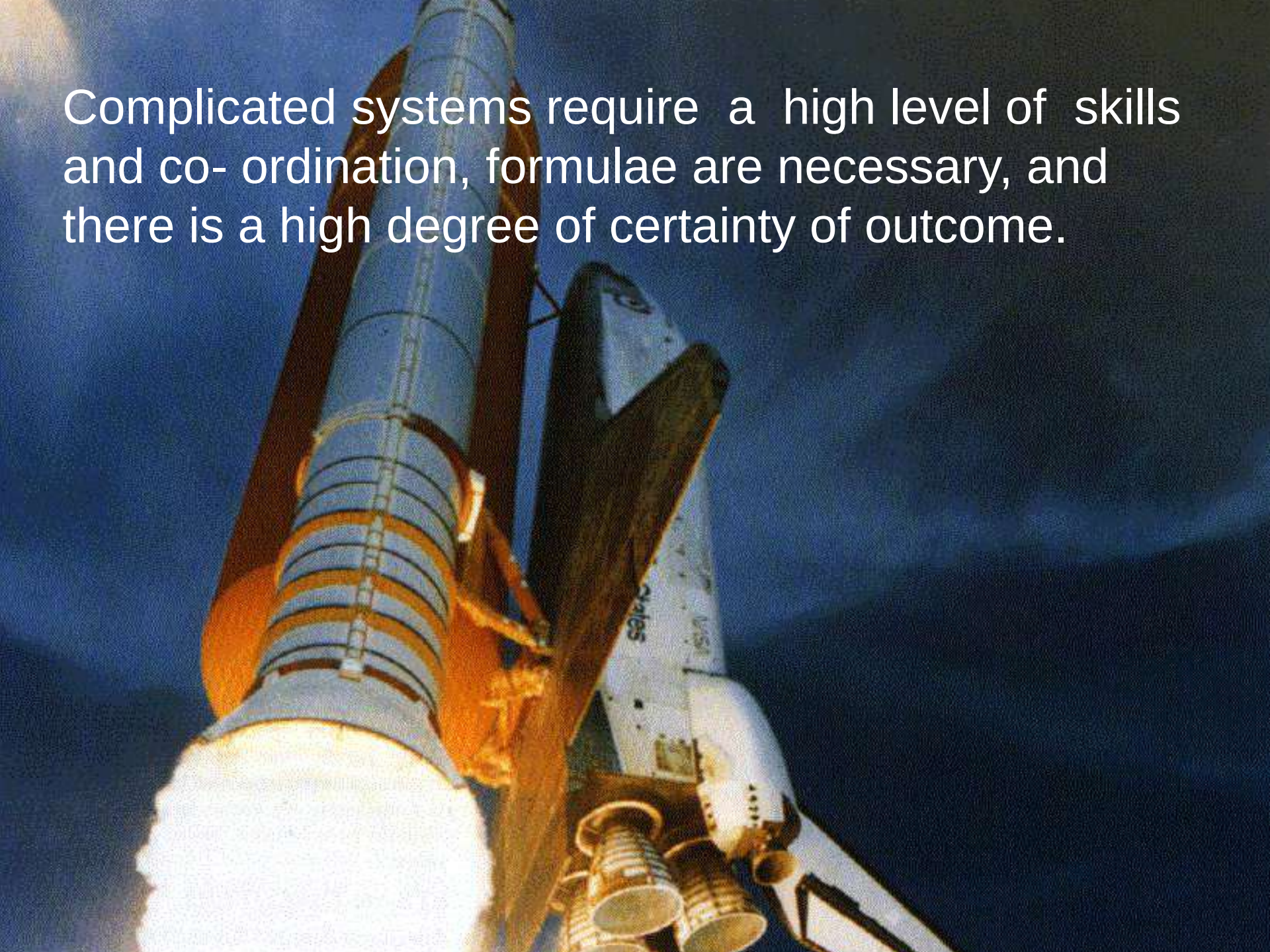
Management challenges

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).

Managing a complicated system

- Develop explicit plans
- Plan then act
- Look for agreement & clear outcome
- Limit types of approaches & actions
- Set targets
- Drive implementation

Managing a complex adaptive system

- Look for divergence
- Act, learn, and plan at the same time
- Use minimum specifications
- Work on multiple leverage points
- Be creative with opportunities at the boundaries
- Build on what emerges and grows

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.

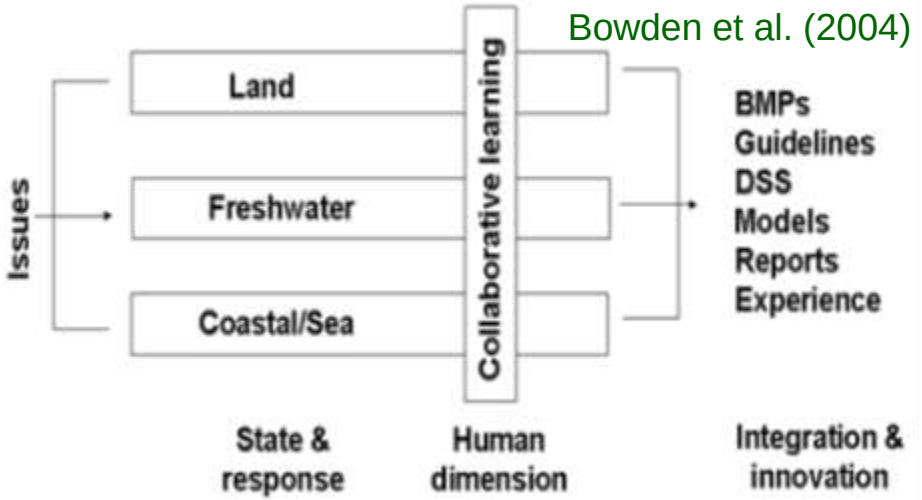
Lesson 2:
Manage expectations

- Internally
- Externally
- Need time
- Keep bigger goal in mind

Lesson 3: Agree on integrative concepts

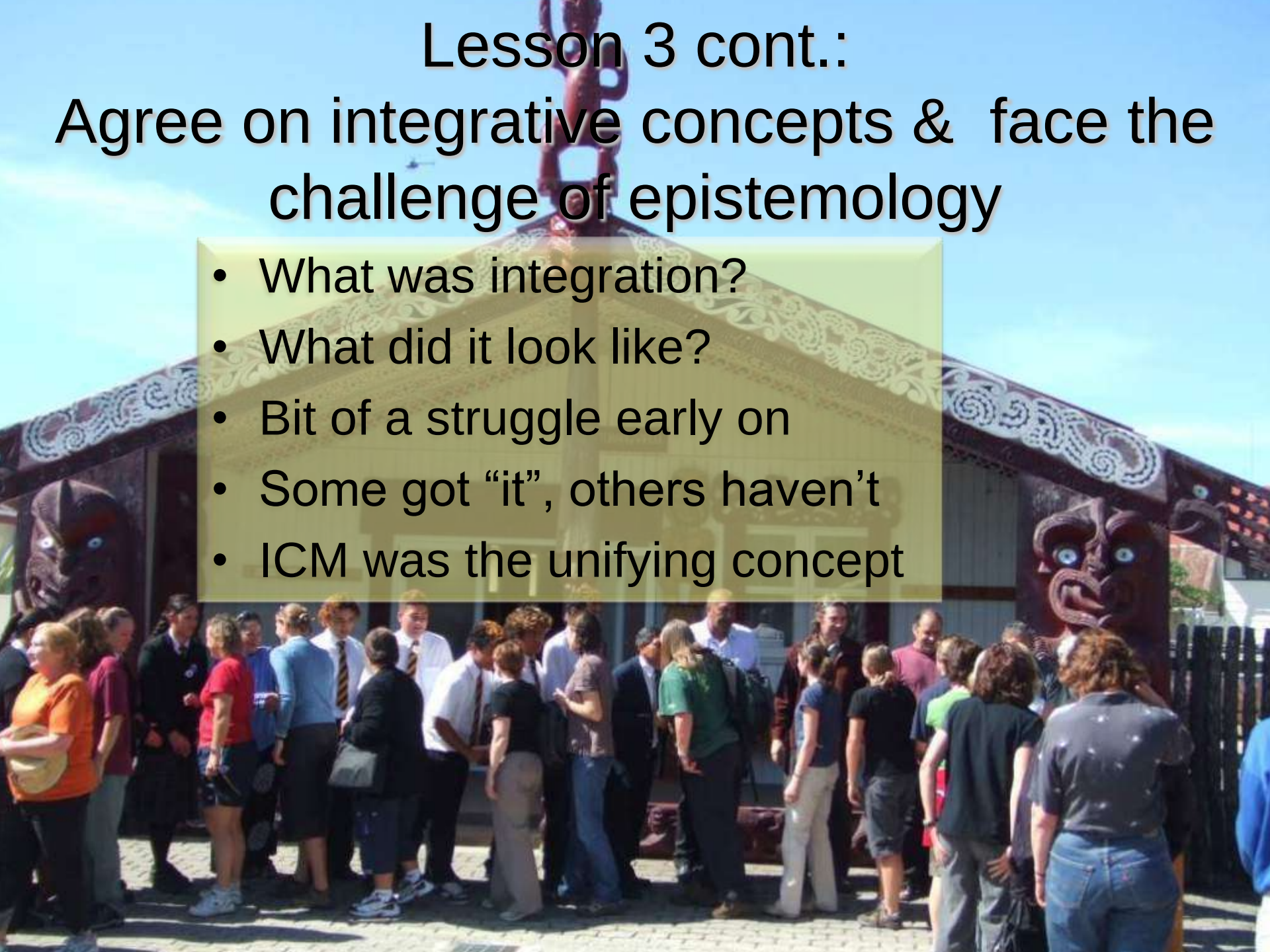
- Make integration part of the project
- Start integration at the beginning
- Plan an integrated project
- Multiple levels of interaction

Bowden et al. (2004)



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



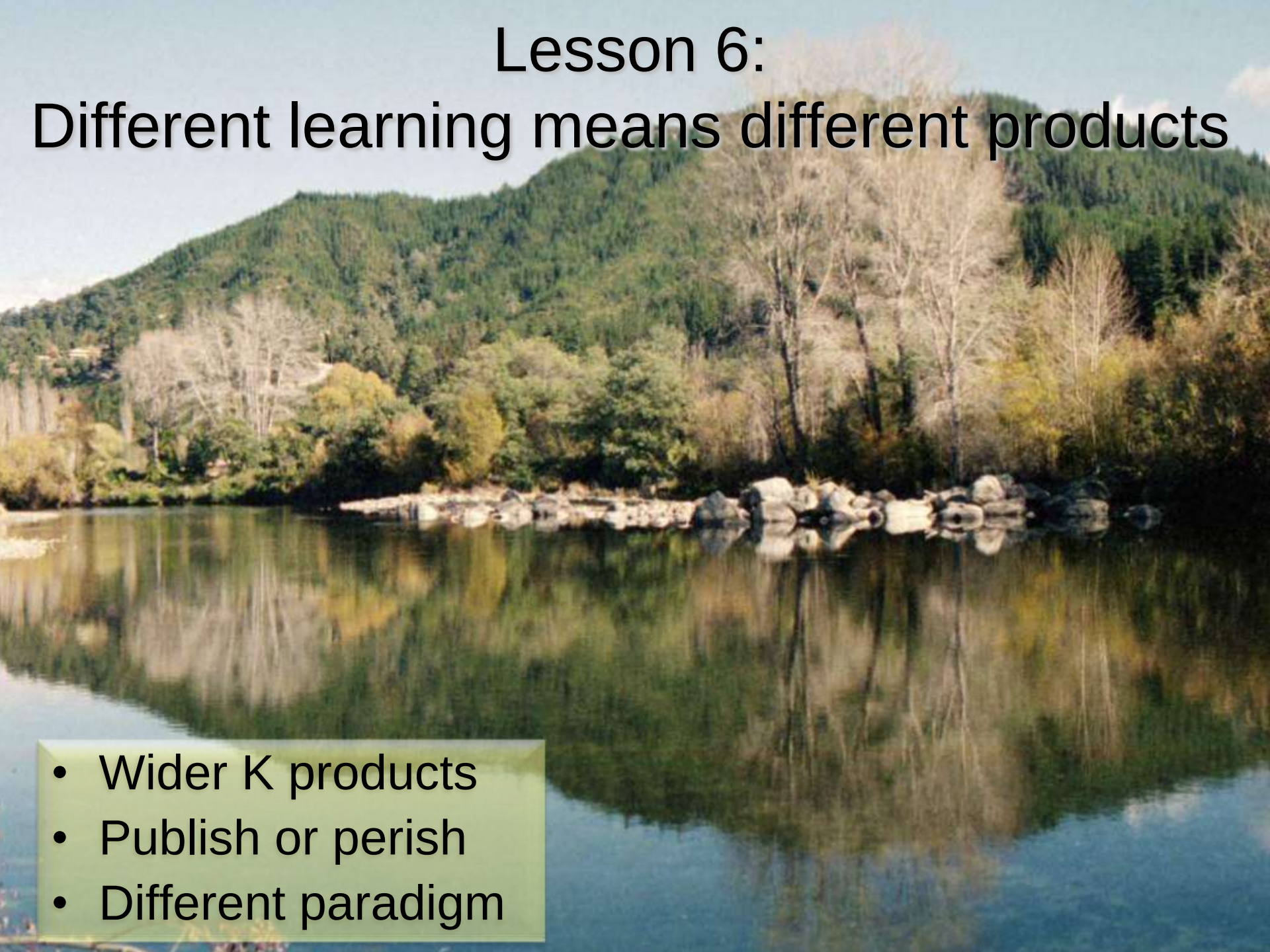
Lesson 4:
Good leadership & management

- 2 leaders – 2 styles
- End user partner became leader
- Both did some science
- Maintaining the momentum

Lesson 5:
Communication with trust & respect

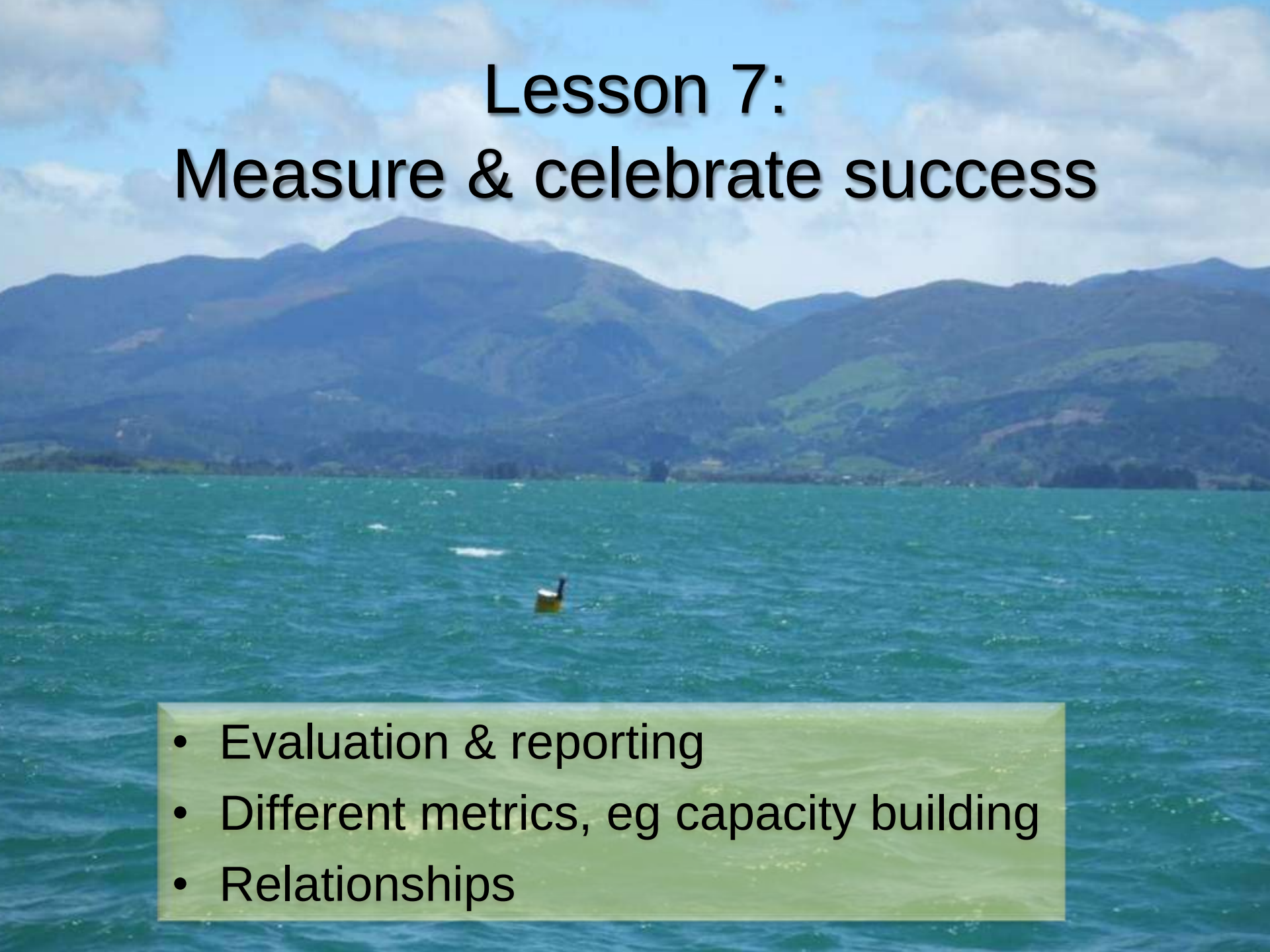
Mutual trust, understanding and respect are pre-conditions for integrative and collaborative work.

Lesson 6:
Different learning means different products



- Wider K products
- Publish or perish
- Different paradigm

Lesson 7:
Measure & celebrate success



- Evaluation & reporting
- Different metrics, eg capacity building
- Relationships

Integration - up the creek <u>with</u> 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