



Landcare Research
Manaaki Whenua

ICM

Integrated Catchment Management

Chris Phillips & the ICM team



in this talk

- Some context
- The Motueka ICM
- A story
- Some successes
- Take home messages

Our stuff – your needs

- Catchment-wide tools – env. pressures
- Linking things up
- Groundwater knowledge → policy
- Water allocation methods → policy
- Dairy impact on environment
- Environmental planning
- Attitude and behaviour change

Wide range of science capabilities – but it's the way we do it that's different!

A group of approximately 20 people are gathered in a cleared forest area, likely for a site visit or training. Many individuals are wearing orange safety vests and hard hats, while others are in casual or business-casual attire. They are standing on a patch of yellowish-brown soil, possibly from a recent excavation or clearing. The background is filled with tall, thin evergreen trees. The overall scene suggests a professional or educational setting in a natural environment.

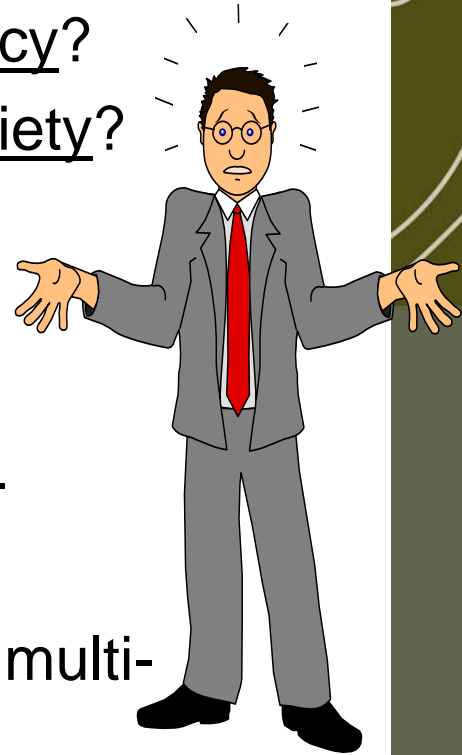
**“One good conversation can shift
the direction of change forever”**

- Linda Lambert

(Author & founder of Center for Educational Leadership
at California State University)

Emerging issues in natural resource management

- How do we bridge the gap between science & policy?
- How do we bridge the gap between science & society?
- How do we make science useful?
- How do we move from inter- to multi- to trans-disciplinarity?
- How do we create science teams to conduct multi- & trans- disciplinary research?
- How do we create science institutions to carry out multi-disciplinary research?



Emerging trends in natural resource management



The social face of catchment management

Learning communities and organisations

Knowledge management

Integrated and inter-disciplinary approaches

INTEGRATED CATCHMENT MANAGEMENT

for the

Motueka River

• ridge tops to the sea •

<http://icm.landcareresearch.co.nz/>

**Where is the
Motueka?**



Ridge tops to the sea



ICM Motueka Research Programme

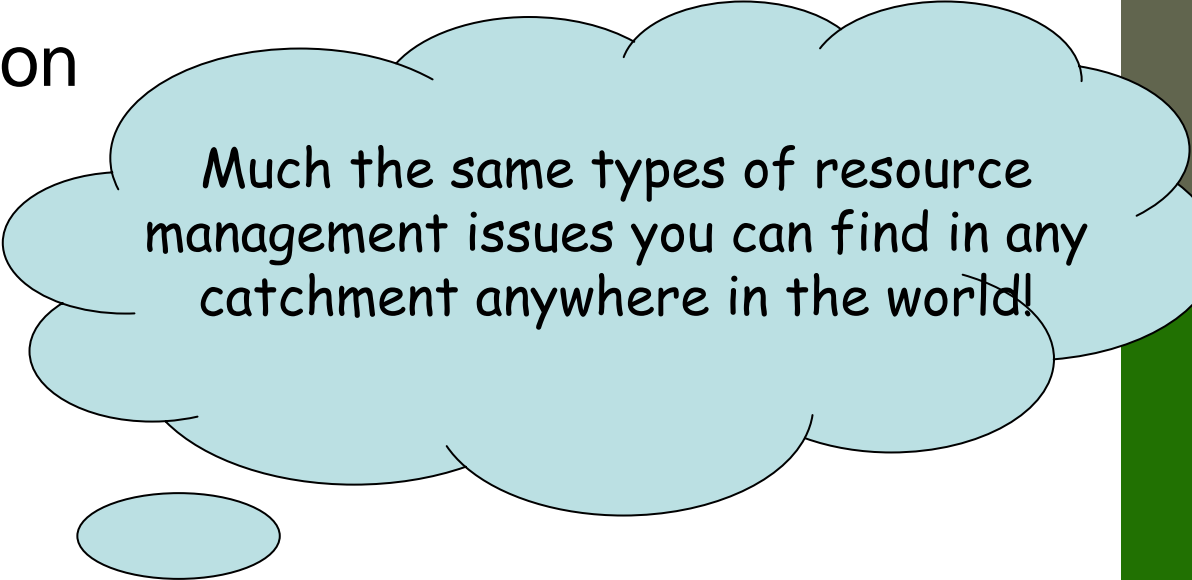
<http://icm.landcareresearch.co.nz>

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.



Motueka Catchment Issues

- Competition for scarce resources
- Influence of forestry on water & sediment
- Use of riparian zones for multiple purposes
- Concern about microbial and nitrogen levels
- Effects of gravel harvesting
- Aquatic biota decline
- Marine intensification
- Cumulative effects
- Urban-rural divide
- Institutions
-

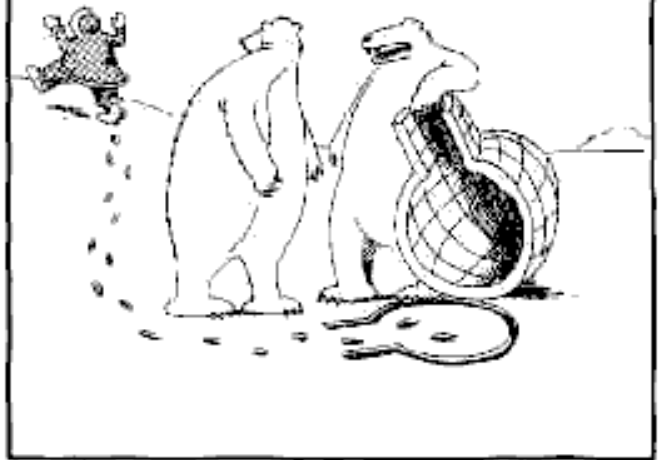


Much the same types of resource management issues you can find in any catchment anywhere in the world!

A starting point – my view

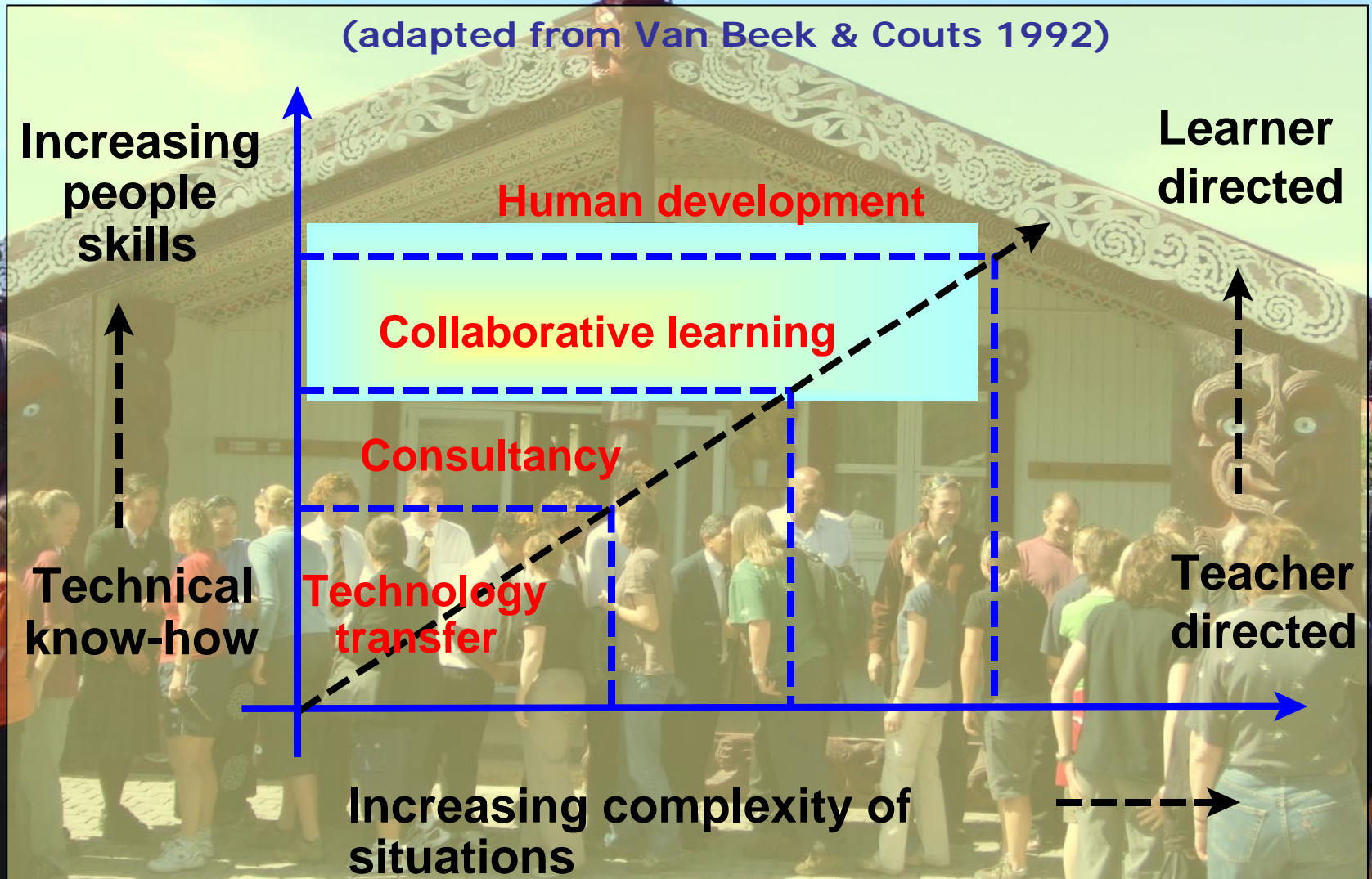
Without a common level of understanding of the issues, information and knowledge related to those issues, real change will struggle to occur.

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"I lift, you grab. ... Was that concept just a little too complex, Carl?"

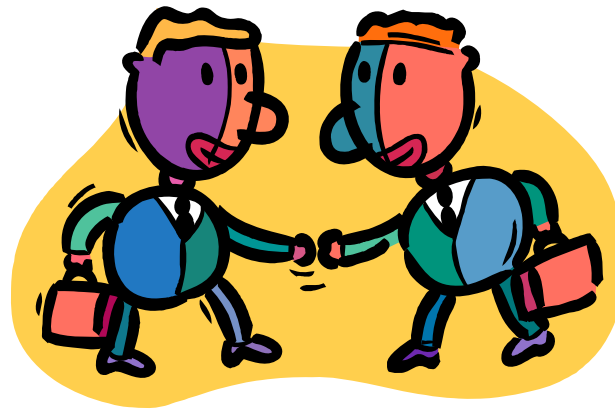
Different approaches to developing and sharing information for decision making



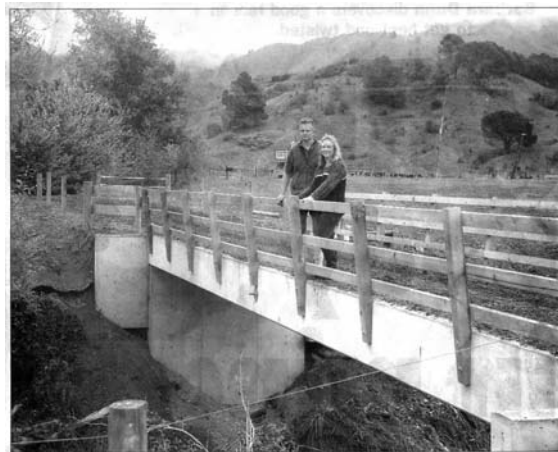
Collaborative or social learning

“Learning that occurs only when people engage one another, sharing diverse perspectives and experiences to develop a common framework of understanding and basis for joint action”.

Exploring social learning in the development of collaborative natural resource management. (Thesis, 2001. Tania Marie Schusler)



Story – Sherry River



SPANNED: Frank and Lisa White on their new \$50,000 stock bridge across the Sherry River.

Bridge over troubled waters

By Helen Murdoch

Tomorrow's opening of a \$50,000 stock bridge across the Sherry River marks the start of a combined project between farmers and the Tasman District Council to improve the river's health.

Dairy farmers Frank and Lisa White commissioned the concrete span bridge from The Tasman District Council to provide permanent access to 30ha of their 27ha farm.

Mr White said their 200-cow herd would no longer have to tackle the slippery steep-banked feet twice a day and the river would not cut off access to valuable grazing when it was in flood.

"Building the bridge has always been part of the farm plan," Mr White said.

The couple have owned the farm for about a year.

Mr White said the cows used to slip, fall and bump each other when they went across the foot.

Rising river levels had also led to stock being mired in the paddocks away from the milking shed.

Mr White said the Tasman District Council had helped with the project and waived resource consent and building consent fees.

The river was the subject of the first known national scientific study on the effect of cows crossing a waterway to and from milking.

The study, which included the use of video cameras, graphically illustrated the natural tendency of stock to defecate in water (50 times more likely than elsewhere), and the resulting high bacteria levels.

Canterbury policy planner Martin Workman said the Whites' bridge was an example of farmers taking positive action to protect the environment.

Water quality monitoring of the river since 2000 had identified high bacterial counts at certain times.

Fish and Game had previously raised concerns about the health of the river before the monitoring, which was part of the Motueka 9 targeted enrichment project.

This involved the council, Landcare 9 search and other scientific groups in a study the impact of land uses on the catchment's coastal marine area.

The initial findings were presented to eight major landowners in the Sherry area, who expressed concern about the levels but asked for more monitoring data.

It was carried out at four sites and the bacteria levels increased down the river, particularly below the four dairy farms.

But it was recognised that dry stock has an impact.

The study showed that a herd of 240 crossing the river raised the concentration of bacteria to an indicator of bacteria levels of more than 50,000 per 100ml of water, well above national swimming guidelines.

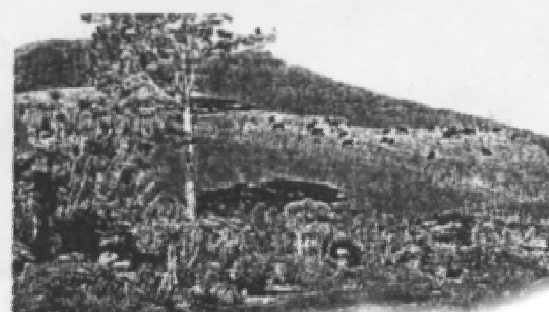


Farmers and scientists join up to sweeten the Sherry River

While farmers are frequently criticised for the effects of dairying on the environment, positive developments are often ignored. Simon Towle reports on work along the Sherry River in Tasman District, where farmers have joined forces with scientists and the district council.

Dairy farmers have traditionally locked horns both with local councils and Fish and Game New Zealand for contaminating the country's natural waterways. However, compelling science has now persuaded farmers in Tasman District to invest considerable effort and money to clean up the Sherry River in a case that could prove a model example for the rest of the country.

Even long-time dirty-dairying campaigner Bryce Johnson, director of Fish and Game, enthusiastically describes the project as "a good news story" and the envi-



new information in December 2001, "the Sherry farmers undertook to take action. In a short period of time, the crossing on Frank and Lisa White's property where the experiment was carried out has now been bridged. In addition, another farmer, Rod O'Brien, is using a bridge instead of taking stock through the river."

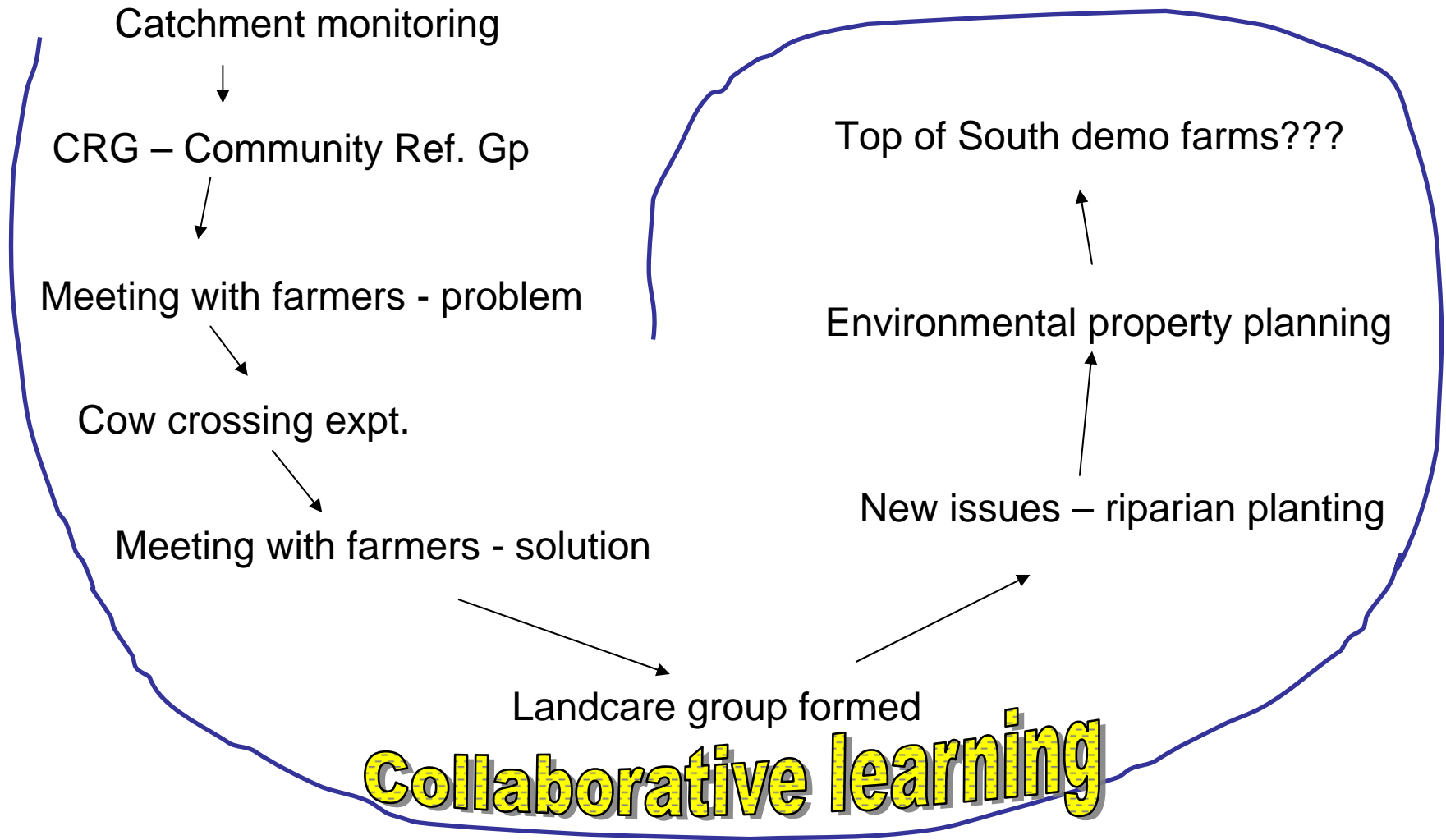
He says two other bridges are in the planning stages and substantial funding is being sought to keep stock out of the river.

Tasman District Council assistance for the project.

Andrew...



How did it happen?

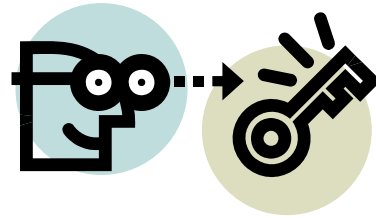


Sherry River Catchment Group

‘Improving Water Quality through on farm actions’



Successes



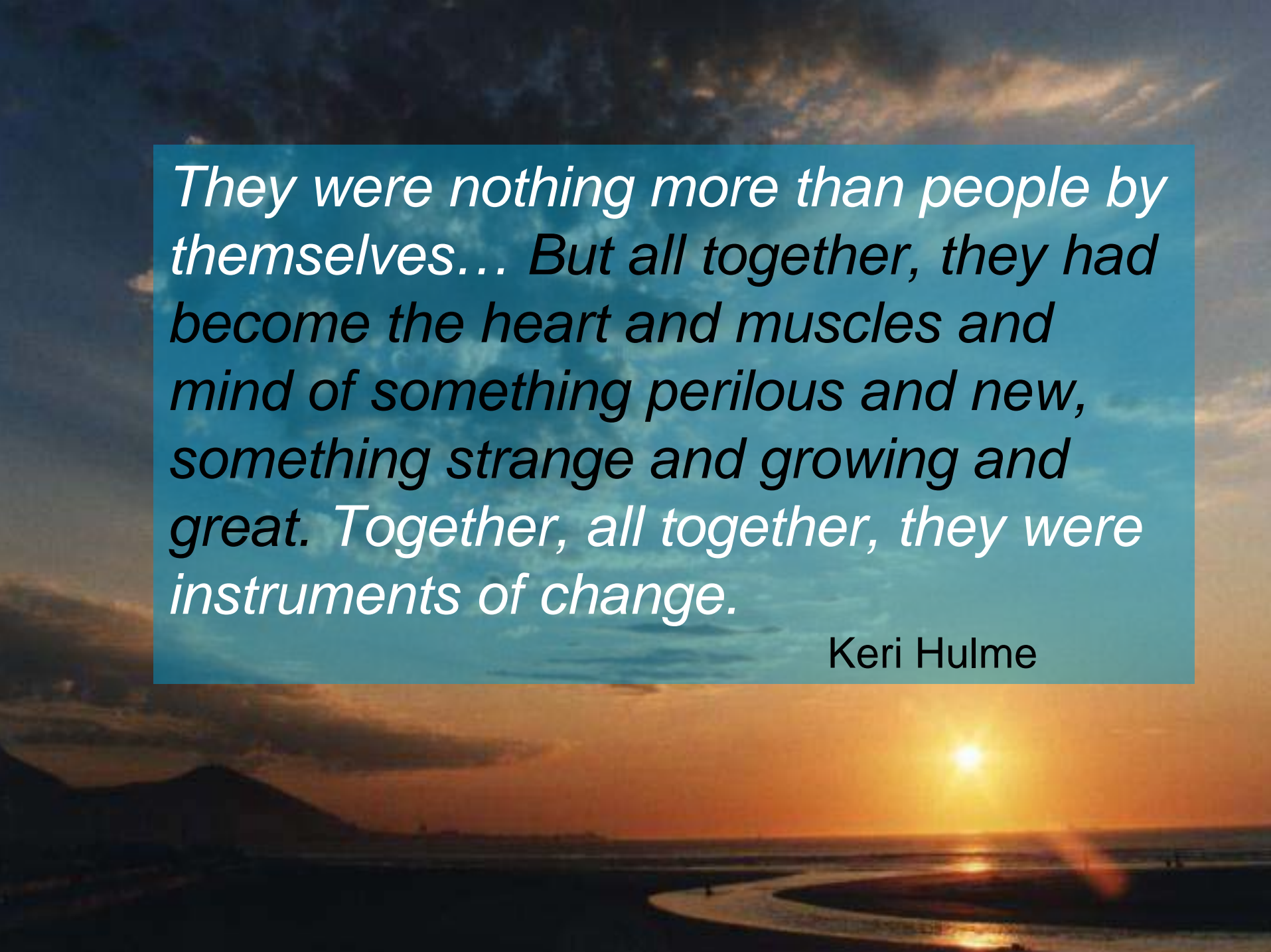
- understanding of biophysical processes
 - (i.e., what's there and how it works)
- role of social science
 - on-going facilitation and keeping us on the pathway
- understanding of integration
- multi-pronged communication
- linking science with catchment players
- building trust & building relationships
 - 'walking alongside' others on the journey
- breaking down institutional barriers

Key messages

- Innovative approach but not rocket science
- Inter- (multi-) (trans-) disciplinary – big melting pot
- Partnerships, trust, relationships
- Stakeholders
- Issues analysis
- Goal setting
- Takes time – longer than most realise
- Dialogue is important – F2F and technology



In the end it's all about people!

A sunset scene with a bright sun low on the horizon, casting a golden glow over a body of water. In the background, dark silhouettes of mountains are visible under a sky filled with soft, orange-tinted clouds. The overall mood is peaceful and contemplative.

They were nothing more than people by themselves... But all together, they had become the heart and muscles and mind of something perilous and new, something strange and growing and great. Together, all together, they were instruments of change.

Keri Hulme