Systems thinking - identifying leverage points for action in complex catchment situations

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Session 1- outline

• Frameworks that help us think about the “why’s” and “how’s” of social engagement practices (20 min)

• Table-based activity – using outcomes models to integrate engagement practice with catchment management (20 min)

• Feedback and discussion (30 min)

• Lunch
Are you sure we’re addressing the right problem here?
Seeing below the surface

Mental models/social paradigms

Structure

Trends & patterns

Events

ACTION

Increasing leverage

Reaction

Anticipate & plan

Design

Transform
Different kinds of systems
Types of systems

Agreement

Far from

Close to

Complex adaptive

Simple

Complicated

Certainty

Far from

Close to

Chaotic

Modified from work by Ralph D. Stacey and Dave Snowden
Simple systems ... call for generic solutions (or recipes) that work every time and don’t require new skills or infrastructure.
Complicated systems... require new skills and co-ordination, formulae are necessary, and there is a high degree of certainty of outcome.
Complex adaptive systems ... every system 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 have:

- multiple interconnected elements
- are adaptive (the capacity to change and learn from experience)
- e.g. groups, communities, institutions
Different systems – different management styles
### 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
So what do we need to know about managing change
e.g. Stages of change

- Precontemplation
  - Not yet acknowledging problem behaviour
- Contemplation
  - Acknowledging problem behaviour
- Preparation
  - Getting ready to change
- Action
  - Changing behaviour
- Reversion
  - Returning to older behaviours
- Maintenance
  - Maintaining new behaviour change

After Prochaska and DiClemente
e.g. Stages of change

Precontemplation
- Not yet acknowledging problem behaviour

Contemplation
- Acknowledging problem behaviour

Preparation
- Getting ready to change

Action
- Changing behaviour

Reversion
- Returning to older behaviours

Maintenance
- OR
- Maintaining new behaviour change

Create awareness & thinking

Provide mechanisms & infrastructure

Provide positive reinforcement
Engaging with communities makes voluntary approaches more effective ... doesn’t it?
How engagement fits with policy

- Regulatory instruments
- Voluntary approaches
- Economic incentives & penalties
- Property rights

Collaborative, information sharing and motivational mechanisms
So what does that all look like in practice?
Outcomes models

- Provides a simple illustration of how a programme or policy will work

- It demonstrates the links between the theoretical assumptions/principles of a program, the program activities/processes, and the outcomes (both short and long-term).

- It highlights how results will be monitored and evaluated.
Outcomes model outline

Programme assumptions:
How will activities lead to outcomes?
Why will people change their practice?

Other related initiatives:
What other initiatives are going on?
How will they influence this programme?
## ICMP workstream: Stormwater Action Plan (ARC)

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Activities</th>
<th>Outputs</th>
<th>Intermediate Outcomes</th>
<th>Long-term Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff time</td>
<td>Develop policies</td>
<td>Reports</td>
<td>Cross-theme skills included in (TA) decision-making and activities</td>
<td>Integrated urban planning</td>
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<tr>
<td>Funding</td>
<td>Training</td>
<td>Policies</td>
<td>Improved ICMPs</td>
<td>Healthy waterways</td>
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<td>Research</td>
<td>Work with cop’s, partners &amp; media</td>
<td>Protocols</td>
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<td>IT</td>
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**Programme assumptions:**
Good relationships with partners improves uptake of ideas and policies

**Other related initiatives:**

Programme Efficiency

Effectiveness
Our assumptions (theories of change):

External factors (for /against)
Outcomes model exercise (30 min)

- In tables
- Developing an ICM outcomes model for a small catchment looking to start with environmental farm plans
- Select roles from your group
- Use last 10 minutes to prepare your feedback
- Prize for the best model which you can judge over lunch
The **Small** River catchment comprises a 15,000 ha sub-catchment of the **Much Bigger** River. The Small River area is made up of forestry in the upper end of the valley with the remainder being a mix of dairy, sheep, beef and lifestyle landowners. The valley is a highly valued fishery and used to have nice clear water. In recent years land use has intensified and this has led to an algal bloom problem along with concerns over excessive nutrients getting into the river.

At last month’s community meeting a number of catchment residents expressed a desire to clean up the river. The main drivers were the desire to ensure the future of the fisheries, and making sure local swimming holes were there for children in the summer months. The main suggestion coming out of the meeting was that environmental management plans be created for each enterprise in the valley. However, some people said that was a waste of time - as the plans didn’t change what happened with on-the-ground management. They said that the only people who gained were councils and other groups who got a big tick for producing the plans as an output.

Still other people said that we had moved past just creating plans to more constructive and strategic approaches that engage different stakeholder groups to manage the catchment in a more collaborative way. The local council representative said that a new mix of policy approaches adopted by Council at their last meeting could help along these lines. A final comment by participants was that they hoped this project would provide platforms for constructive engagement from all key stakeholders – including iwi, schools and other catchment interests. At the end of the meeting a sub-group was formed to set out what an integrated approach to managing the water quality of the catchment might look like. Their task was to present this as a one-page **outcomes model**.
Roles

- **Project manager** – responsible for seeing that the project gets developed.

- **Note taker** – needs to ensure ideas get written on the post-its and put on the model

- **Facilitator** – makes sure people talk, and listen!

- **Skeptic** – is responsible for asking “how or why” this is likely to happen.

- **Ideas generators** – this is everyone else. Put up ideas .... make it work.
Feedback

• **One or two insights** that came out of the group that you think would be useful to you in managing, or operating in, multi-stakeholder engagement processes – perhaps something that surprised you, or that explains something.

• **One or two insights** that came out of working with the outcomes framework that could be usefully shared, and possibly used in the course of your work processes – perhaps something that surprised you, or that explains something.

• **One question** that your group developed – either about the outcomes model, or more generally thinking about engagement, or catchment management, to ask the convenors – and the rest of the participants.
Lessons for programme development

• Work with principles – not recipes (build on key values – trust, integrity, listening, etc.)

• Fit specialists with skills in managing engagement and conflict into the team

• Build on social research – it can help.

• e.g. a number of key theories of change can provide frameworks for effective interventions