

The *Wheel of Water*

Research Programme



Moving from modelling to scenario planning:
building futures thinking into strategic assessment

Will Allen

Learning for sustainability – <http://learningforsustainability.net>

Email: willallennz@gmail.com



Landcare Research
Manaaki Whenua

AQUALINC

agresearch

Tipa &
Associates

Will Allen &
Associates

Presentation outline

- **Introduction** to scenarios – definition, and their use in NZ freshwater limit setting and IPCC contexts
- Looking at **evolving scenario approaches** – problem-focused, actor-focused, multiple methods
- Moving the emphasis **from scenario “development” to scenario “use”** – and how we might support that
- **A few big challenges** for practitioners as we move forward

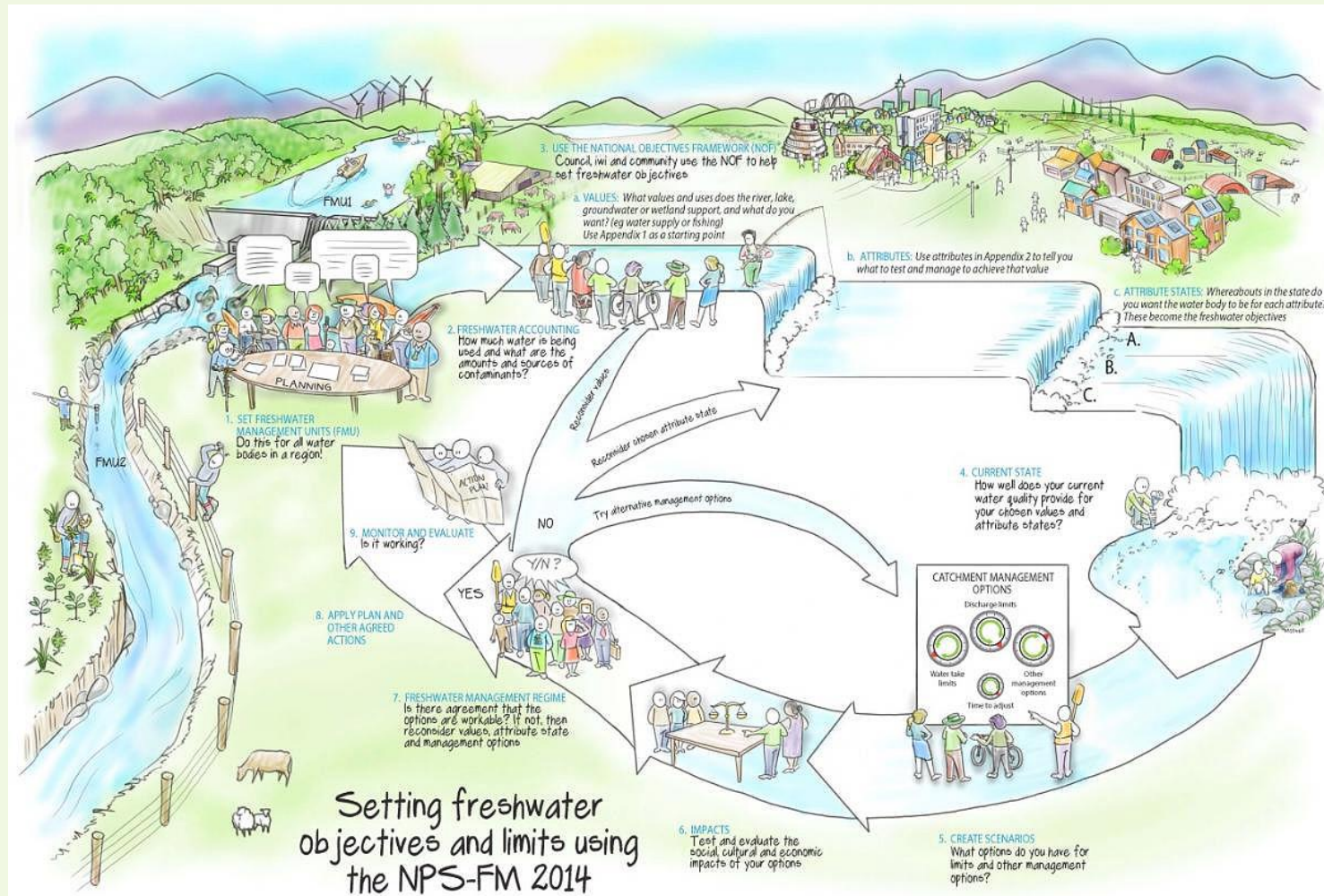
Scenario planning

Many definitions around scenarios – usually based around uncovering how a future state of the world might unfold by:

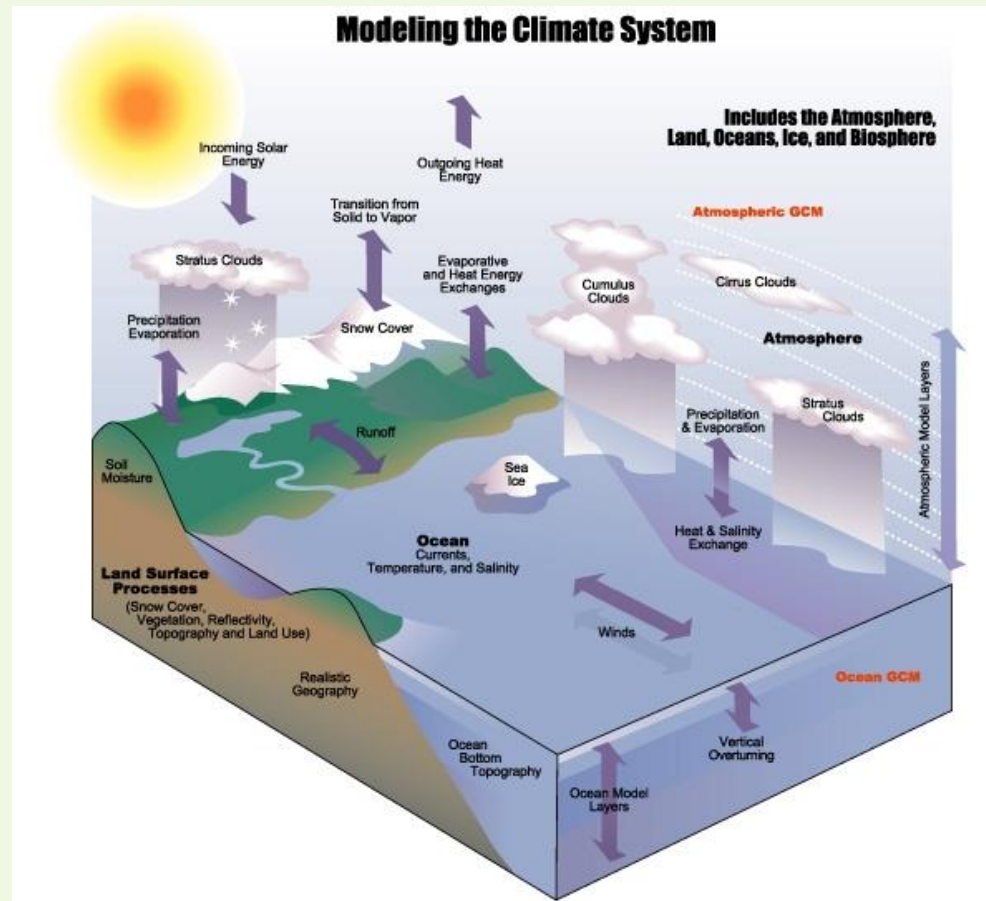
- **Enhancing our understanding** of causal processes, connections, and logical sequences underlying events
- **Challenging conventional thinking** – reframing perceptions and changing mindsets
- **Improving decision-making** – to inform strategy development

Note: In practice scenarios and model outputs are often regarded as the same thing.

Regional policies for setting freshwater limits

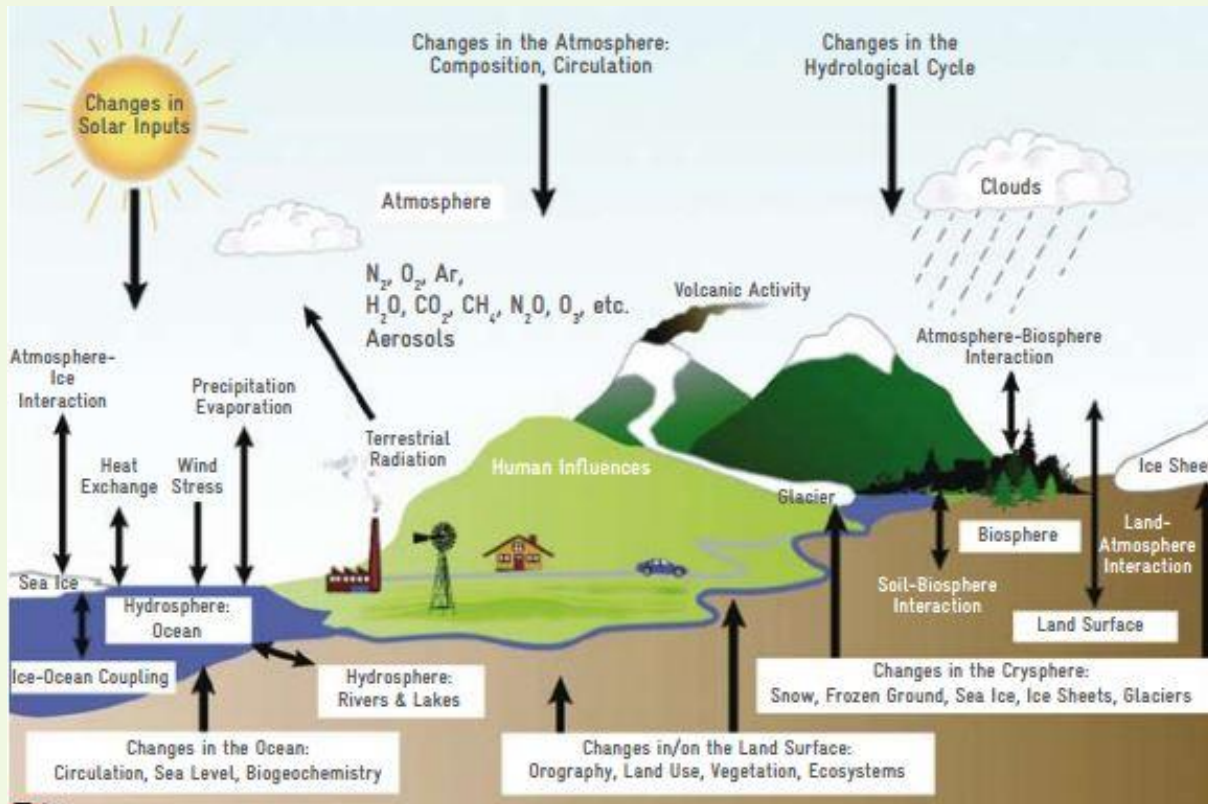


Modelling the climate system (2000)



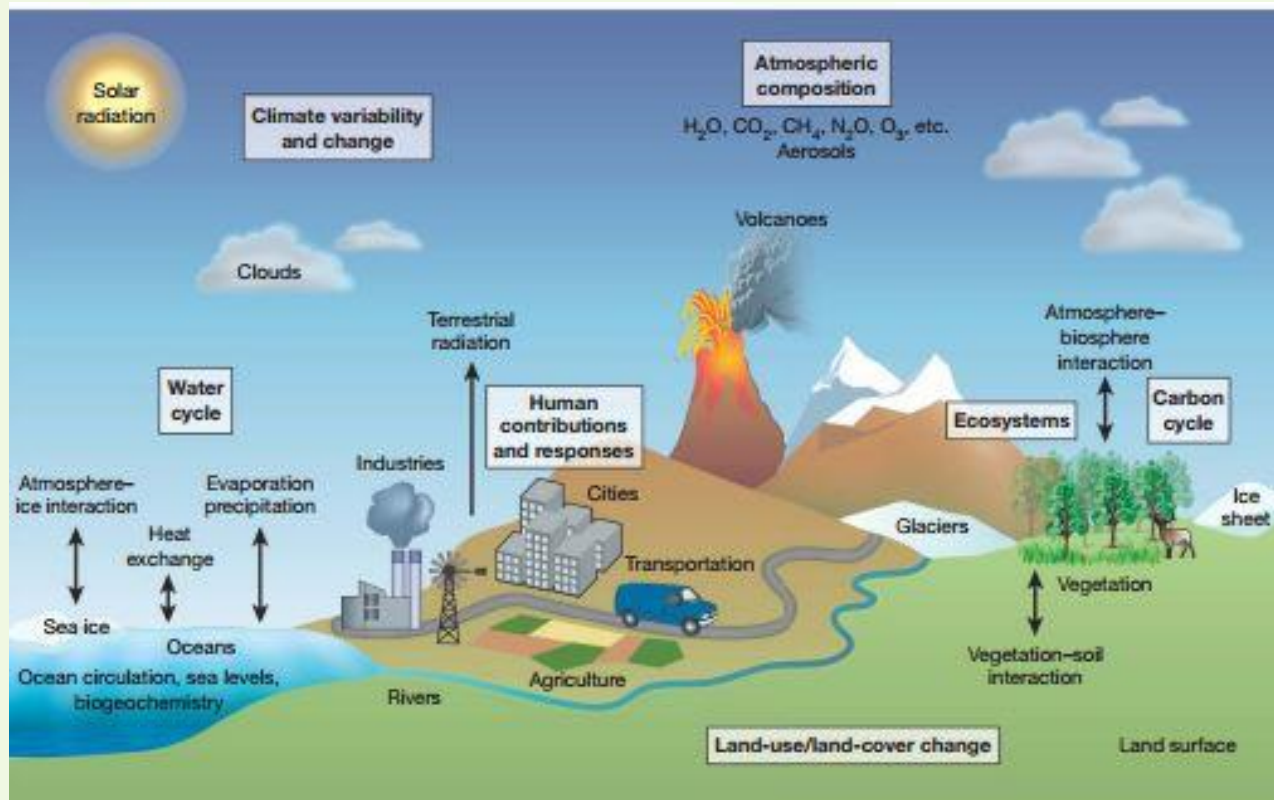
[Source: Agrawala 2001 – Integration of human dimensions in climate change assessments]

... including human influences (2007)



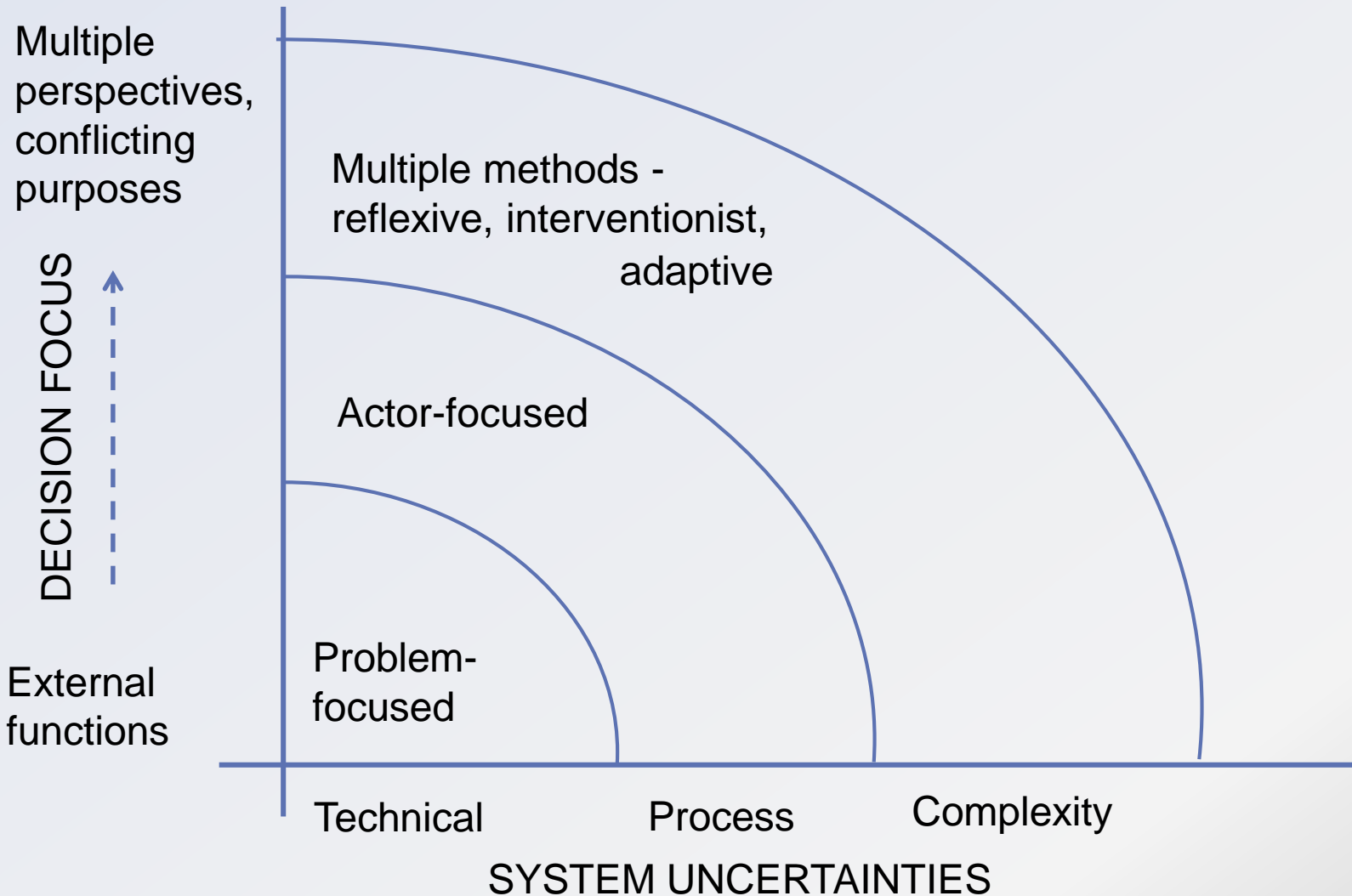
[Source: IPCC – 2007 (Kropp & Scholze 2009)]

.... and also human responses (2010)



[Source: Moss et al. 2010 – The next generation of scenarios for climate change research and assessment]

A knowledge-based scenario typology



[Source: Wilkinson & Eidinow 2008; Star et al. 2016]

Problem-focused scenarios

Imagine: Developing accurate maps of the future that will enable others to reach their destination reliably and efficiently

- Seeing the environment as a quantifiable entity
- Looking to describe clear chains of causality
- More accurate scientific knowledge as basis for better decision-making
- Uses simulation models, statistical models, etc.

Actor-focused scenarios

Imagine: Setting out on a journey and inviting the whole crew to help draw a map of the route they need to take

- A focus on the actors involved – who needs to change
- Mapping relationships and inter-dependencies
- Highlighting beliefs and perceptions
- Developing a shared Theory of Change
- Uses intervention logic models, outcomes models, etc.

... provide roadmaps and critical reflection

A Theory of Change approach

- Provides a 'big picture' view of how and why a desired change is expected to happen (underlying assumptions)
- Uses a logic model to illustrate how programme inputs, activities and outputs lead to sequential outcomes
- Early outcomes acknowledge changes in individuals and organisations (KASA and practice) followed by changes in end states
- Provides a framework that guides monitoring and evaluation (reflection and learning)

Evolution towards mixed methods

- Integrating approaches acknowledges need to deal with complexities (managing wicked problems)
- Links content and process experts
- Links science with fostering engagement and interactions
- More flexibility to cater and support adaptive management
- Combined engagement makes climate change and other issues more tangible than through consideration of quantitative outputs alone

Scenario development process

- Preparatory phase
 - Purpose and focus agreed, and driving forces identified
- Development phase
 - Involving development of the scenarios
- **Use phase**
 - **Where scenarios are used for strategy/policy development**

Use phase – missing in action?

“perhaps the most critical phase of the scenario process”,
yet

- A missing link in many project descriptions (esp. research papers)
- Focus on development of scenarios (and underlying models)
- ... but neglect how to maximise use of scenarios
- Little attention to user practice

... encourage more scenario orientation

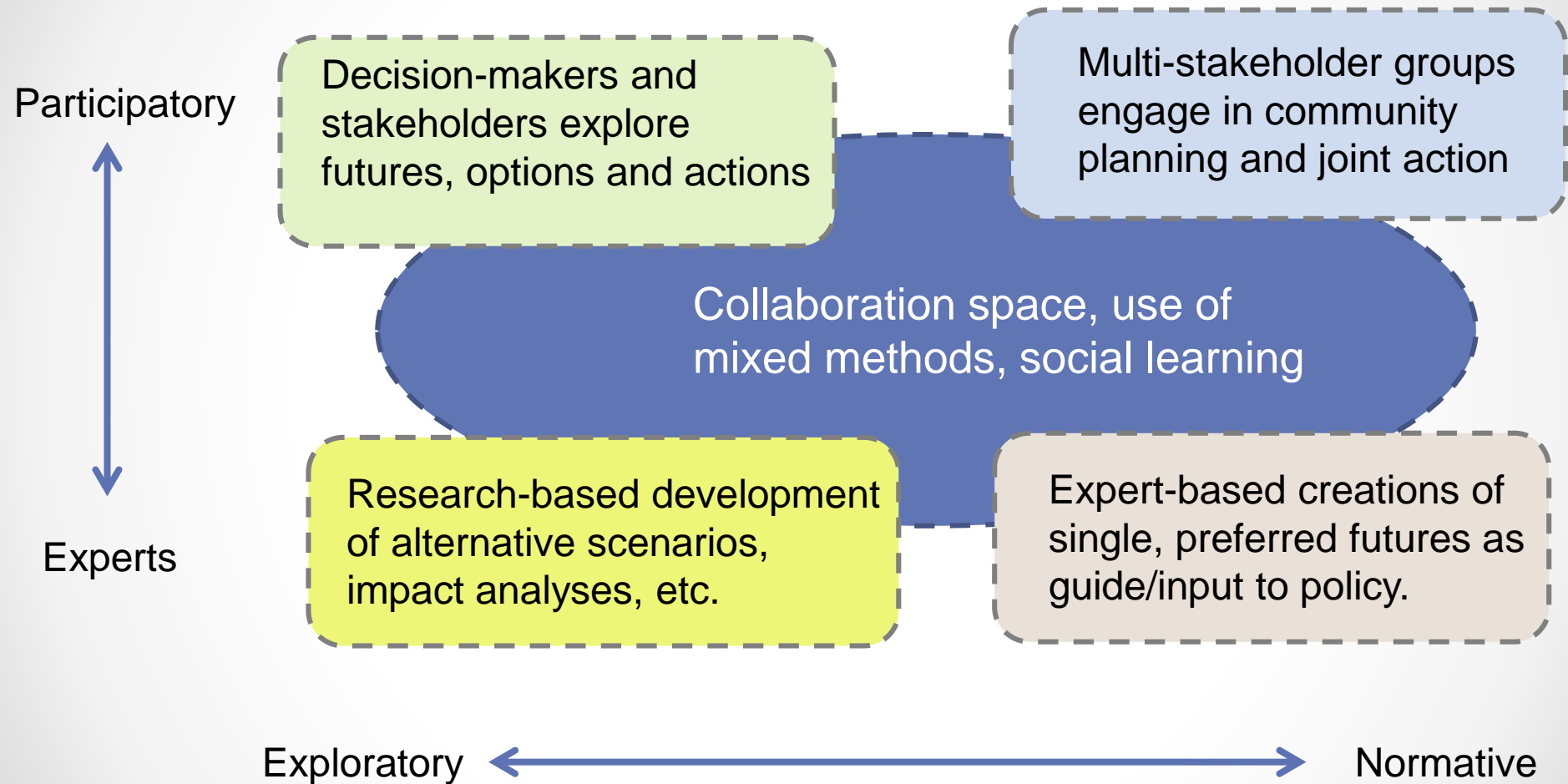
Often users spend too little time understanding scenarios, and what they mean for strategy

- Take time to become familiar with scenarios, and organisations role in these
- Understand key driving forces which structure scenarios, and selection of themes driving design
- Explore how other stakeholders appear in scenarios

... introduce range of strategic thinking tools

- Consider behaviour change issues – how will change unfold
- Make use of strategy tools to assess scenarios
- Check against
 - Fit with vision and values
 - Fit with scenarios
 - Fit with stakeholders
- Provide audit trail to make explicit links between models, scenarios and development of subsequent strategies
 - Not often done – but important for legitimacy

Strategic assessment in a complex environment



[Source Star et al. 2016. Supporting adaptation decisions through scenario planning]

Capacity building challenges

- Develop stakeholder and agency staff familiarity with emerging scenarios methodologies
- Emphasise and develop best practice in “scenario use”
- Link technical expertise in scenario/modelling teams with those skilled in engagement and social learning
- Move away from “predict and control” to “adaptation” in the face of increasingly complex and evolving settings
- Need institutional models that support ongoing collaboration and engagement among multiple players

For more information

- Wheel of Water website

<https://wheelofwater.wordpress.com/design/documents>

Learning for Sustainability portal pages - annotated links to a number of related external on-line resources:

- Theory of change

<http://learningforsustainability.net/theory-of-change/>

- Thinking our way into the future – scenarios and visioning

<http://learningforsustainability.net/scenarios/>