Knowledge Broker Support Program

Volume 1 – Foundation – Welcome and
What is knowledge brokering module

CSIRO Australia's National Science Agency
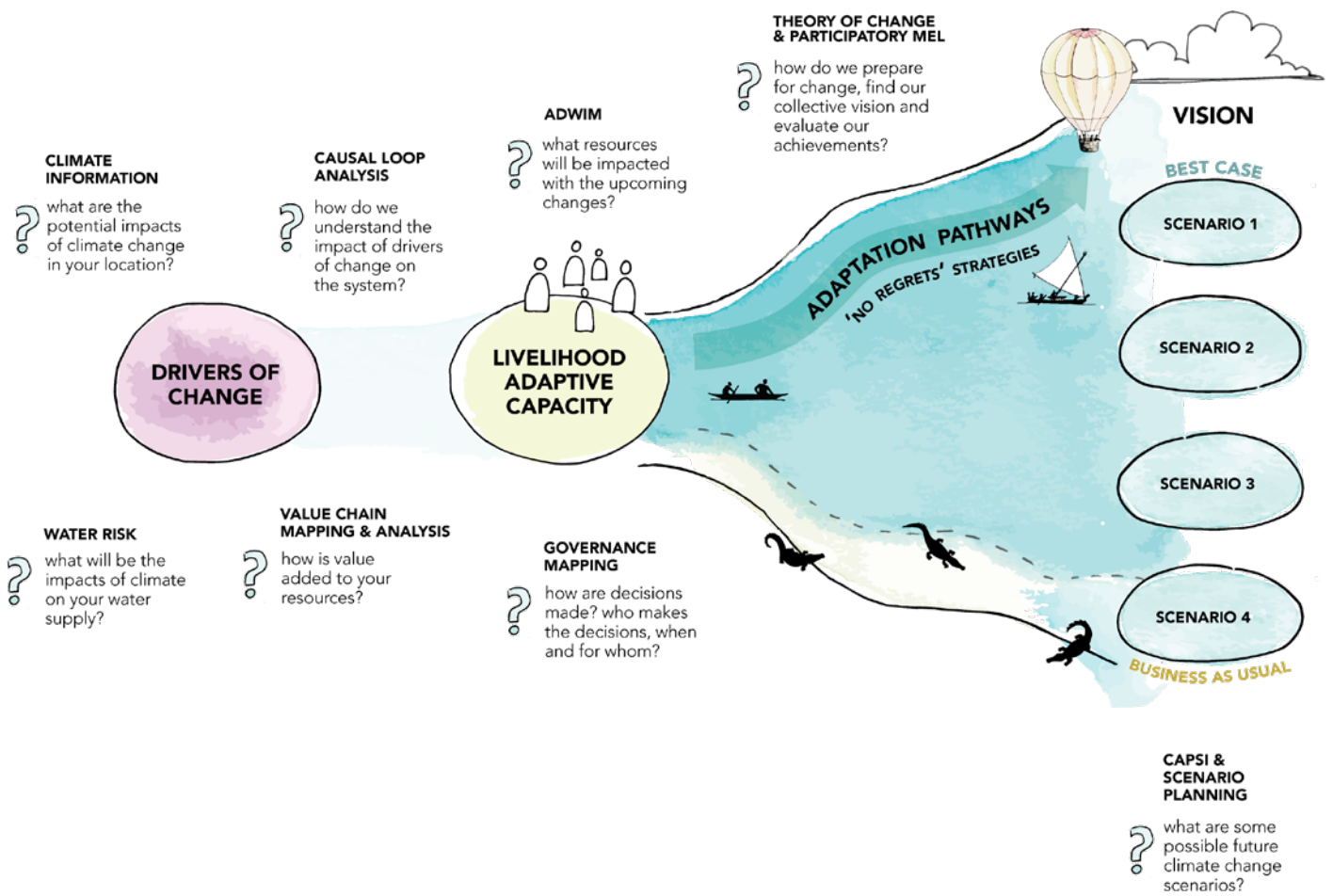
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Cover photo: Knowledge broker in action. Photo by Tom Greenwood, 2017. Photo below by Tom Greenwood.

CLIMATE INFORMATION
what are the potential impacts of climate change in your location?

CAUSAL LOOP ANALYSIS
how do we understand the impact of drivers of change on the system?

ADWIM
what resources will be impacted with the upcoming changes?

THEORY OF CHANGE & PARTICIPATORY MEL
how do we prepare for change, find our collective vision and evaluate our achievements?

VISION

DRIVERS OF CHANGE

LIVELIHOOD ADAPTIVE CAPACITY

ADAPTATION PATHWAYS
'NO REGRETS' STRATEGIES

BEST CASE

SCENARIO 1

SCENARIO 2

SCENARIO 3

SCENARIO 4

BUSINESS AS USUAL

WATER RISK
what will be the impacts of climate on your water supply?

VALUE CHAIN MAPPING & ANALYSIS
how is value added to your resources?

GOVERNANCE MAPPING
how are decisions made? who makes the decisions, when and for whom?

CAPSI & SCENARIO PLANNING
what are some possible future climate change scenarios?

The KBSP enables you to pick and choose the tools and processes you needed to create a community adaptation pathway.
Artwork by Dr Manuela Taboada, Queensland University of Technology

Welcome to the KBSP

The Knowledge Broker Support Program (KBSP) collates tools, processes and case studies to help knowledge brokers mainstream climate change and future uncertainty into their programs. By integrating climate change and future uncertainty, knowledge brokers can increase the likelihood of the long-term success of their programs.

The KBSP toolbox is useful for NGOs, government and private sector individuals who are involved in decision-making at the community level.

Climate change is accelerating. The potential impacts of 1.5°C to 2°C increases in global average temperatures by 2050 on Pacific communities and their livelihoods are likely to be severe. Other drivers of change, such as COVID-19, population growth, and financial and political crises, will continue to emerge and potentially accelerate, interacting with climate change to generate further uncertainty. Decision-making about community development needs to account for these changes and anticipate their impacts while improving human and ecological well-being.

KBSP uses a framework that differentiates the types of decisions that need to occur when taking systems approaches ('clear', 'complicated' and 'complex' decisions) and the types of brokering that are needed for each ('infomediary' or 'knowledge translator', 'knowledge broker' and 'innovation broker'). Different skills are required for knowledge brokers to act as change agents within their system, depending on the context and complexity of decision-making.

Systems thinking is crucial to understanding the context and ensuring that decisions and appropriate interventions are co-designed. A suite of systems tools has been developed around a central 'adaptation pathways' approach, which is a process that supports decision-making when future uncertainty is great. You can follow the course structure in full or choose the modules that will help you with specific issues or stages of planning in your community.

How to use the KBSP Manual Volume 1

This manual is a companion to the KBSP online course. For videos, links, presentations and the interactive version of this manual, go to: https://research.csiro.au/pkb/

This volume incorporates the **KBSP THEORY Modules**, which are your essential framework and very useful if you're new to the core concepts of knowledge brokering, systems thinking, participatory Monitoring, Evaluation and Learning (MEL) or climate information.

Volume 2 comprises the **KBSP TOOLBOX**, which will help you answer key adaptation questions and co-develop solutions.

What is knowledge brokering?

This module introduces you to the definitions and theories around knowledge brokering to prepare you for the next steps in the Knowledge Broker Support Program.

When you complete this module, you should be able to:

1 Explain the difference between information and knowledge.

2 Understand the role of the knowledge broker.

3 Identify different kinds of problems.

4 Have a basic understanding of the adaptation decision-making framework.

5 Align different types of problems with appropriate types of knowledge and decision-making processes.
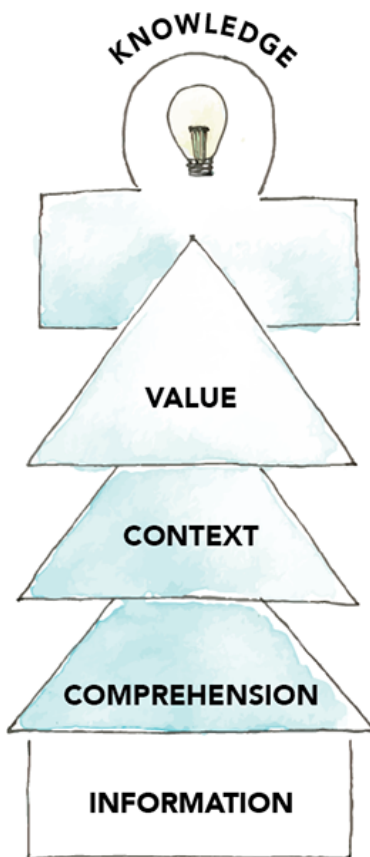

Figure 1 From Information to Knowledge. Diagram based on: Diemers, D. 1999. On the social dimension of information quality and knowledge. In Y. W. Lee and G. K. Tayi, editors. Proceedings of the 1999 MIT Conference on Information Quality. MIT Press, Cambridge, Massachusetts, USA
Artwork by Dr Manuela Taboada, Queensland University of Technology

Information and knowledge

'Knowledge' is not the same as 'information', although the two words are often used interchangeably. The Oxford English Dictionary emphasises that knowledge is acquired through experience or the practical use of facts and information. The famous English poet, John Keats, observed 200 years ago that "nothing ever becomes real until it is experienced". This highlights the process of practical experience in turning information into knowledge.

Knowledge (noun)

1. facts, information, and skills acquired through experience or education; the theoretical or practical understanding of a subject. *"a thirst for knowledge"*

2. awareness or familiarity gained by experience of a fact or situation. *"the program had been developed without his knowledge"*

Source: The Oxford English Dictionary https://www.oed.com/

There may be various barriers to information becoming knowledge.

Psychologist Daniel Diemers suggested that there are **three conditions for new information to become knowledge**:

1. it must be **'comprehended'** — the individual needs to understand the new information, and it must be expressed in a known language;

2. it must be **'contextualised',** whereby it must make sense relative to their existing knowledge; and

3. it must be **'valued'**, whereby the information is useful for application.

If the information clashes with any of these steps it is rejected.

David Cash suggested that information must be 'credible', by being technically adequate; it must be 'salient' by meeting the needs of a decision-maker; and 'legitimate' by being unbiased.

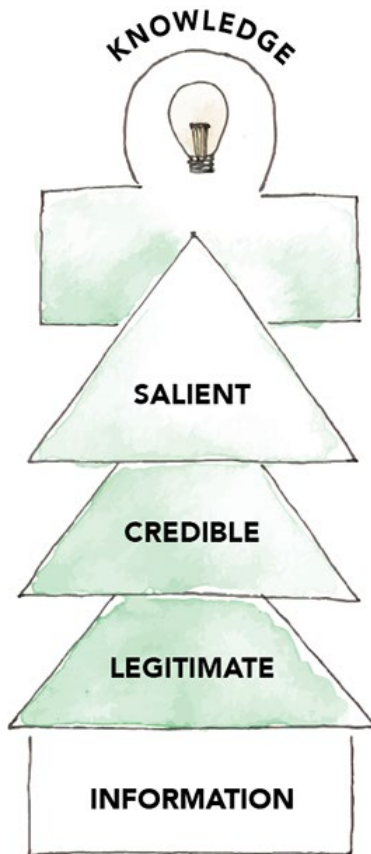Again, the information is rejected if any of these needs are unmet.

Figure 2 From Information to Knowledge. Diagram based on: Cash, D.W., Clark, W.C., Alcock, F., Dickson, N.M., Eckley, N., Guston, D.H., Jager, J., Mitchell, R.B. 2003. Knowledge systems for sustainable development. PNAS 100(14): 8086-8091. Artwork by Dr Manuela Taboada, Queensland University of Technology

Types of knowledge and power

Even when information is translated into knowledge, different types of knowledge may emerge, depending on the culture of the people involved. Everyone has their own individual knowledge, but depending on their occupations and professions, this becomes different types, including:

- Local (e.g. community knowledge)
- Specialised (e.g. scientific or professional knowledge)
- Strategic (e.g. political or planning knowledge)
- Holistic (e.g. traditional knowledge)

Brown (2008) suggests a hierarchy exists between these types of knowledge – strategic knowledge is often more powerful than all others, and local knowledge is often the weakest. Remember the saying: "knowledge is power"?

However, multiple types of knowledge are an asset. A metaphor that shows the danger of relying on a single perspective. We have adaped the Indian folktale about the blind men and the elephant, to be blind men and a whale. There were once four blind men who had heard of the animal called a 'whale' but did not know what one looked like. To satisfy their curiosity, they decided to use their sense of touch to determine the creature's appearance. Matters became confusing, however, when each man touched a different part of the whale and became convinced that he alone understood its true nature. "The whale is very like a slide!" proclaimed the man who had rode its tail. The fellow who had touched its side, however, declared the whale to be "nothing but a wall," whereas the man who touched the creature's spout claimed that the elephant was "like a fountain," and so on.
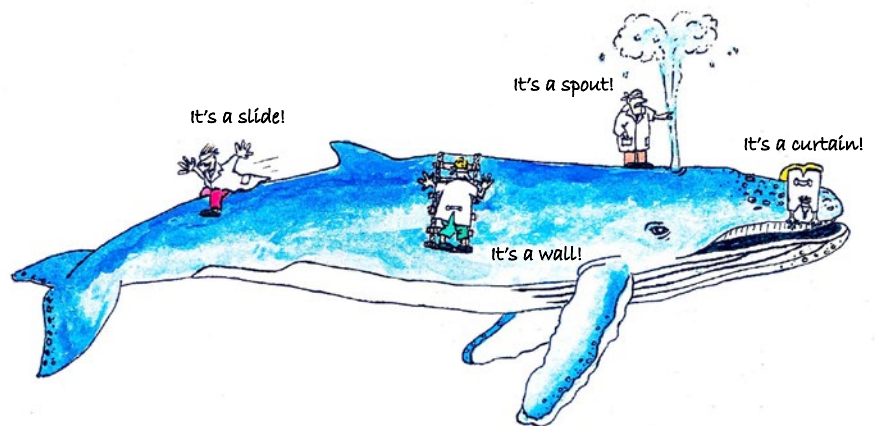
Figure 3 Whale image [Inspired by the Indian folktale about the blind men and the elephant (adapted from Himmelfarb et al 2002)] Artwork by Samara Cosijn

The moral of the story for knowledge brokering is that there are many different perspectives about a problem, and each person's perspectives can be narrow.

However, all types of knowledge must be combined to see the bigger picture and solve a complex problem.

Decisions and action

So, what is a knowledge broker?

Following Brown and Lambert (2013), we define it as someone who acts as a bridge between the information, the learner and the new knowledge. However, being a knowledge broker may also need to go further and engage with decision-making, and turning knowledge into action. As the cartoon below suggests, it's not easy!

There are numerous barriers to achieving action that will have to be recognised and overcome by brokers. If decision-makers do not accept the information, the action will be rejected. If the information is accepted, politics, power, or the differing goals of stakeholders and their 'rules of the game' may stop information being used. For action to happen, decision-makers must have the motivation and capacity to implement their decisions. The process of collating information and turning this into knowledge and action can be thought of as a journey down a river, with rapids and crocodiles that must be navigated before a boat of brokers and decision-makers can collectively reach action.

Knowledge brokers need to be able to deal with the challenges that lurk "under the bridge" during the journey from information to knowledge to decisions.
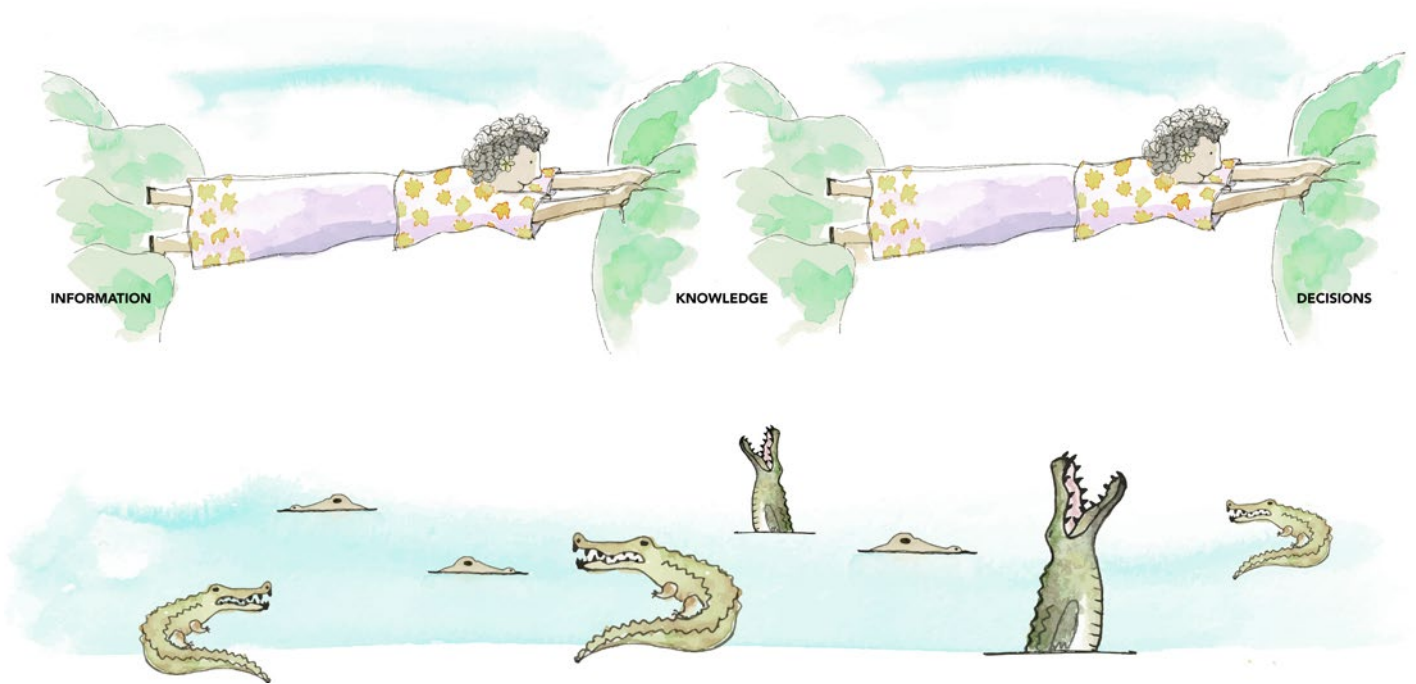

INFORMATION KNOWLEDGE DECISIONS

Figure 4 Knowledge broker bridging the information, knowledge and decision gap. Idea by the KBSP Team.
Artwork by Dr Manuela Taboada, Queensland University of Technology

> "A knowledge broker is someone who acts as a bridge between the information, the learner and the new knowledge."

Adapted from: Brown and Lambert (2013)

The process of collating information and turning this into knowledge and action can be thought of as a journey down a river, with rapids and crocodiles that must be navigated before a boat of brokers and decision-makers can collectively reach action.

Figure 5 The journey of the knowledge broker. Idea by the KBSP Team.
Artwork by Dr Manuela Taboada, Queensland University of Technology.

The spectrum of knowledge brokering

Knowledge broker is a broad term that covers many different activities and roles.

Blane Harvey and colleagues suggested that there is a spectrum of brokering types, starting with an **'Infomediary'** or **'Knowledge Translator'** that enables access to information and its use.

Then a **'Knowledge Broker'** improves information to use in decision-making, and therefore helps turn it into knowledge. However, a 'Knowledge Broker' must also be an 'Infomediary-Knowledge Translator'.

Finally, an **'Innovation Broker'** facilitates innovation and change, involving skills of the 'Knowledge Broker' and the 'Infomediary-Knowledge Translator'. It is important to remember that an Innovation Broker's job probably requires more time and resources and will be ongoing – by comparison, an Infomediary-Knowledge Translator's job could be more straightforward and involve less time.

ENABLING ACCESS TO INFORMATION AND ITS USE

TURNING INFORMATION INTO KNOWLEDGE IN DECISION-MAKING

FACILITATING INNOVATION AND CHANGE

KNOWLEDGE BROKERING

INFOMEDIARY KNOWLEDGE TRANSLATOR

KNOWLEDGE BROKER

INNOVATION BROKER

TIME AND RESOURCES
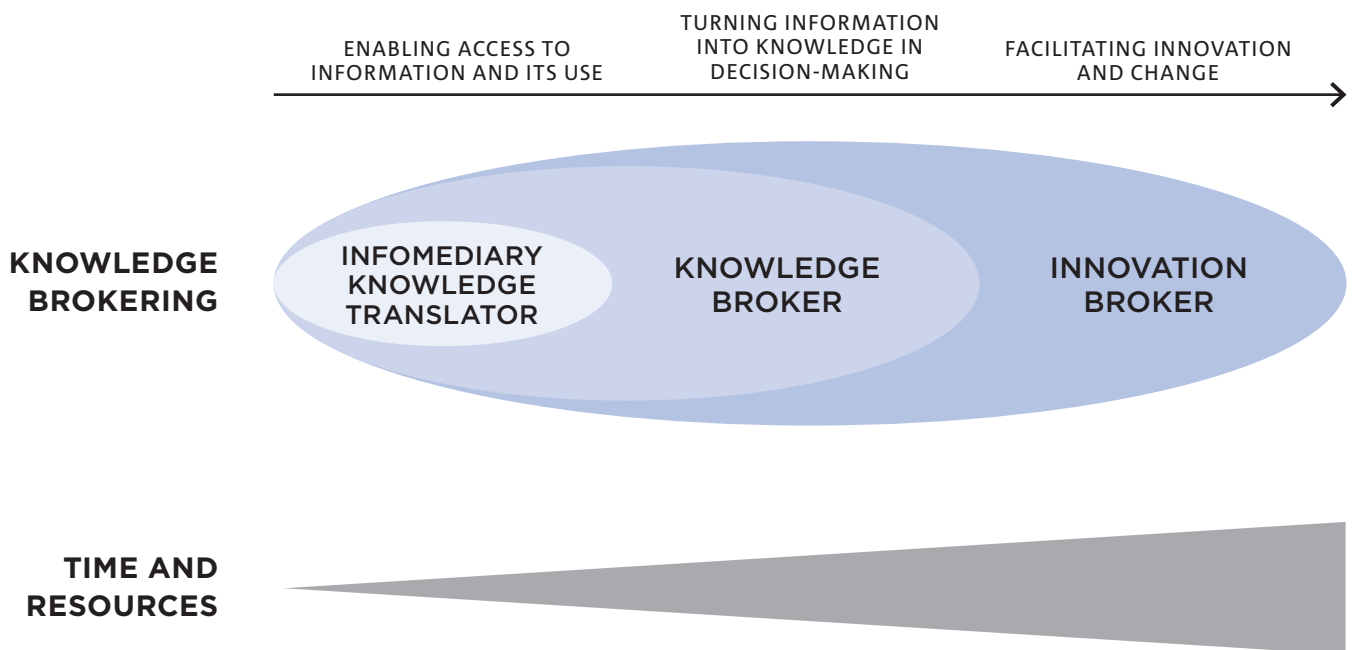
Figure 6 Knowledge broker spectrum. Based on Harvey, B., Lewin, T. and Fisher, C. 2012. Introduction: Is development research communication coming of age? IDS Bulletin 43(1):1-8.

Adaptation decision-making and knowledge brokering types

As a broker, you may be involved in different kinds of decision making processes about climate change and adaptation.

Here is a simple framework to think about the different types of decision-making, and the kinds of information or knowledge that may be needed to make those decisions.

'Clear' decisions only involve a few stakeholders with the same goals and need technical information to inform the decision – for example, an extension officer working with a farmer to decide when to plant a crop with some monthly climate forecasts.

A more **'complicated' decision** involves several stakeholders who also have the same goals, and the problem needs several sources of expert knowledge and skills – for example, managing tuna stocks in the Pacific, which are moving across many countries' international borders. Importantly, within this decision, there may still be 'clear' decisions needing only technical information to be passed between a few stakeholders, such as the sensitivity of one tuna species to temperature increases.

Finally, **'complex' decisions** involve many diverse stakeholders with varied or competing goals. In this case, multiple forms of knowledge and an inclusive process are necessary to integrate everyone's perspectives and thinking. An example might be planning a community-based tourism venture, including landowners, government, NGOs and the private sector. Note that this may also include 'complicated' and 'clear' decision-making within it.

Figure 7 Nested adaptation decisions – clear, complicated and complex. Diagram adapted by Dr Samantha Stone-Jovicich (CSIRO) from: Snowden, D. and Boone, M.E. 2007. A leader's framework for decision-making. Harvard Business Review. November 2007: 69-76.
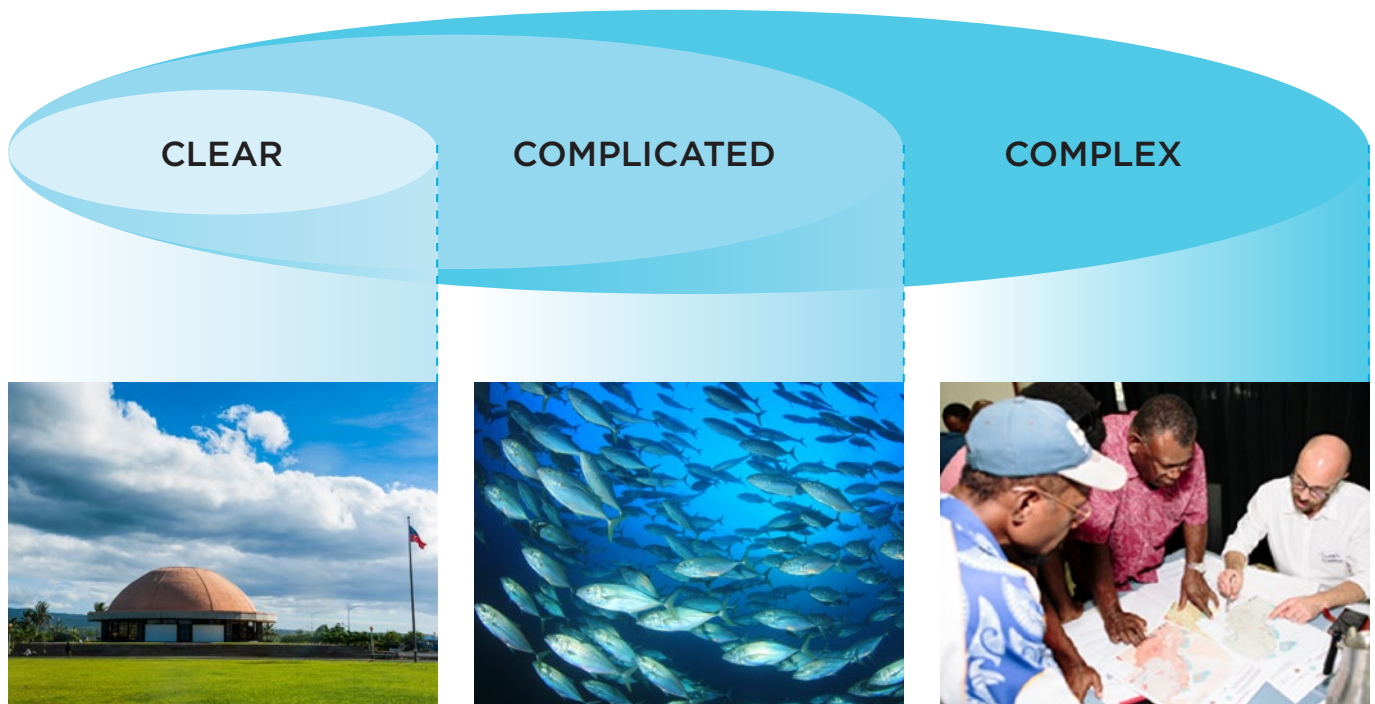

CLEAR **COMPLICATED** **COMPLEX**

Figure 8 Clear problem – Samoa's climate-proofed parliament house

Figure 9 Complicated problem – Climate change is causing tuna to migrate

Figure 10 Complex problem – Developing adaptation pathways for climate adapted tourism in Papua New Guinea.
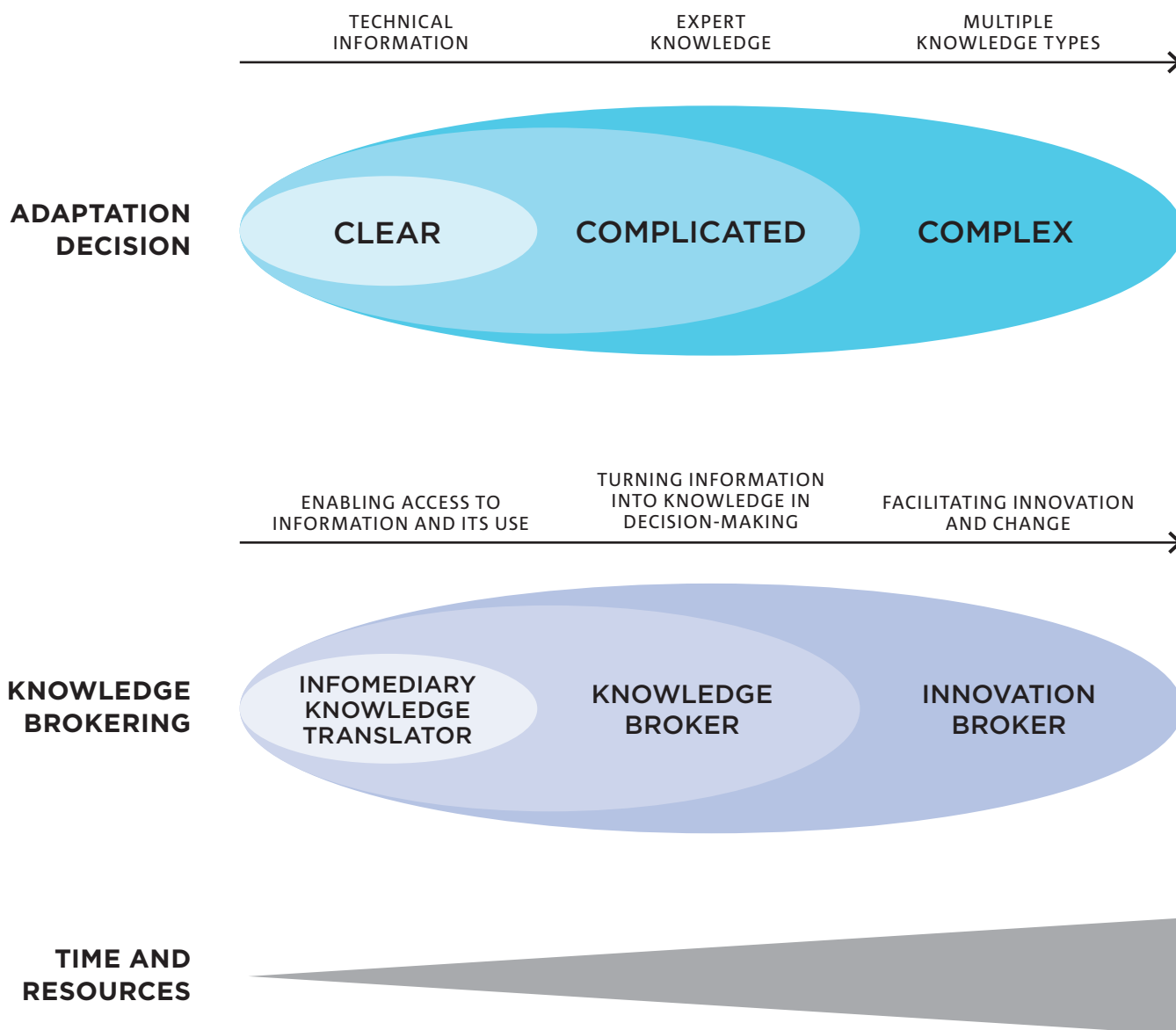Image by Tom Greenwood

The knowledge brokering spectrum aligns well with these different kinds of decision-making.

For community development and climate change, much of the decision making will be complicated or complex, involving multiple stakeholders and knowledge types.

To facilitate these types of decision-making, brokers will have to be 'Innovation Brokers'. Meaning that they will need to be Knowledge Brokers and Infomediaries to deal with complicated or clear decisions that are part of complex decision-making.

The diagram below shows the relationship between adaptation decisions and the knowledge brokering spectrum.

TECHNICAL INFORMATION	EXPERT KNOWLEDGE	MULTIPLE KNOWLEDGE TYPES

ADAPTATION DECISION

CLEAR   COMPLICATED   COMPLEX

ENABLING ACCESS TO INFORMATION AND ITS USE	TURNING INFORMATION INTO KNOWLEDGE IN DECISION-MAKING	FACILITATING INNOVATION AND CHANGE

KNOWLEDGE BROKERING

INFOMEDIARY KNOWLEDGE TRANSLATOR   KNOWLEDGE BROKER   INNOVATION BROKER

TIME AND RESOURCES

References and additional resources

References

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Acknowledgements

As Australia's national science agency, CSIRO is solving the greatest challenges through innovative science and technology.

CSIRO. Unlocking a better future for everyone.

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