Knowledge Broker Support Program

Volume 2 – Knowledge Broker Tools – Welcome and Community Adaptation Pathways module

The Knowledge Broker Support Program (KBSP) was funded by the Australian Department of Foreign Affairs and Trade, through the Australia Pacific Climate Partnership.

CSIRO Australia's National Science Agency

Citation

Cosijn, M., Meharg, S. Grigg, N., Busilacchi, S., Barbour, E., Nadelko, A., Skewes, T., Hayes, D., Dutra, L.X.C., van Putten, I., Taboada, M.B., Laka, J., Konia, R., Souter, R., Anisi, A., Teava, B., Petsakibo, E., and Butler, J.R.A., 2023, Knowledge Broker Support Program Volume 2 – Knowledge Broker Tools, CSIRO, Canberra, 92 pp.

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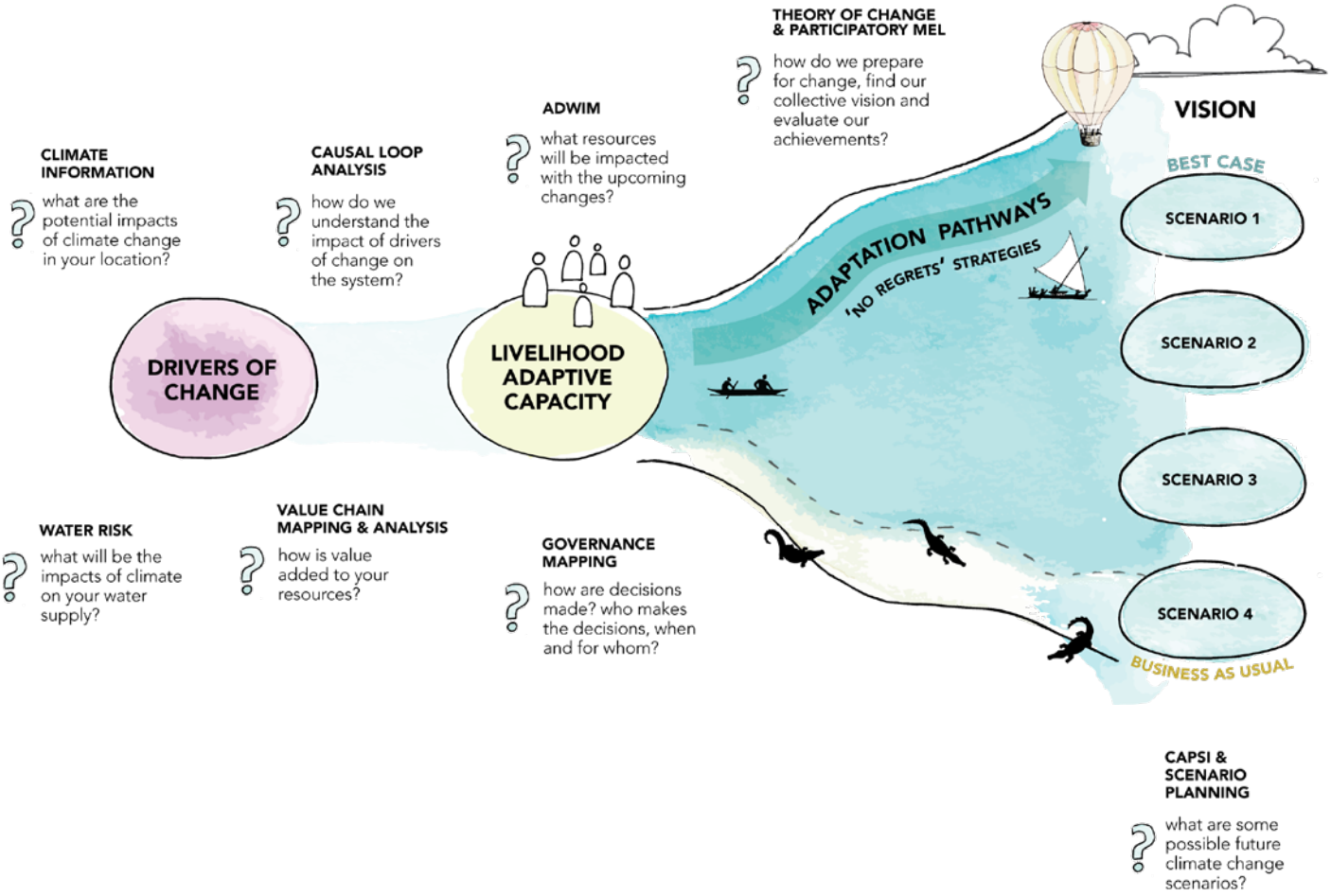
Cover photo: Knowledge broker in action. Photo by Tom Greenwood, 2017. Photo below by Seona Meharg.



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.

Acknowledgements

The development of the KBSP benefitted from the following:

- Module co-design, development and artwork by Dr Manuela Taboada (Queensland University of Technology). Dr Taboada was assisted by Lydia Boyle (QUT School of Design / Symplicit, Jess Greentree (QUT School of Design), and Jason Bell (QUT School of Design),
- the support and advice from the Australian Centre for International Development (ACFID), especially Jess Smith and Shweta Tank,
- the Pacific Climate Change Centre (PCCC),
- Zelda Hilly's detailed review and ideas on how to contextualise the manual for the Pacific, and
- participants from the first two KBSP cohorts.

How to use the KBSP Manual Volume 2

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

Community Adaptation Pathways

This module focuses on what an adaptation pathway is and the process of developing pathways at community level.

It also demonstrates how various systems tools can support the development of adaptation pathways. This module focuses on community adaptation pathways, but adaptation pathways can be used at all scales, from local to national to international. The module will also show you how adaptation pathways were developed in the Solomon Islands.

This module includes:

1. **What are Adaption Pathways?**
2. **Decisions, politics and power, knowledge**
3. **How to develop Community Adaption Pathways?**
   - **An example from the Solomon Islands – Community Adaptation Pathways for the Solomon Islands (CAPSI)**
4. **Scenario Planning**
5. **Repeating Adaption Pathways Planning**
6. **Including other Knowledge Broker Support Program tools**

What are Adaptation Pathways?

The future is uncertain, and change is happening faster and faster. Climate change is accelerating. But future climates may be very different depending on global emissions, and models have many different results, even for the same emissions models. Other factors may also impact communities, such as global pandemics, terrorism, financial crises and natural disasters. Meanwhile, other change is also happening – advances in information technology and renewable energy, plus population growth and cultural shifts. These factors could combine to form very different futures for the world and communities. This is especially true because globalisation connects the world far more than before, meaning that events in one region can quickly affect communities in another. COVID-19 is a very clear example of this.

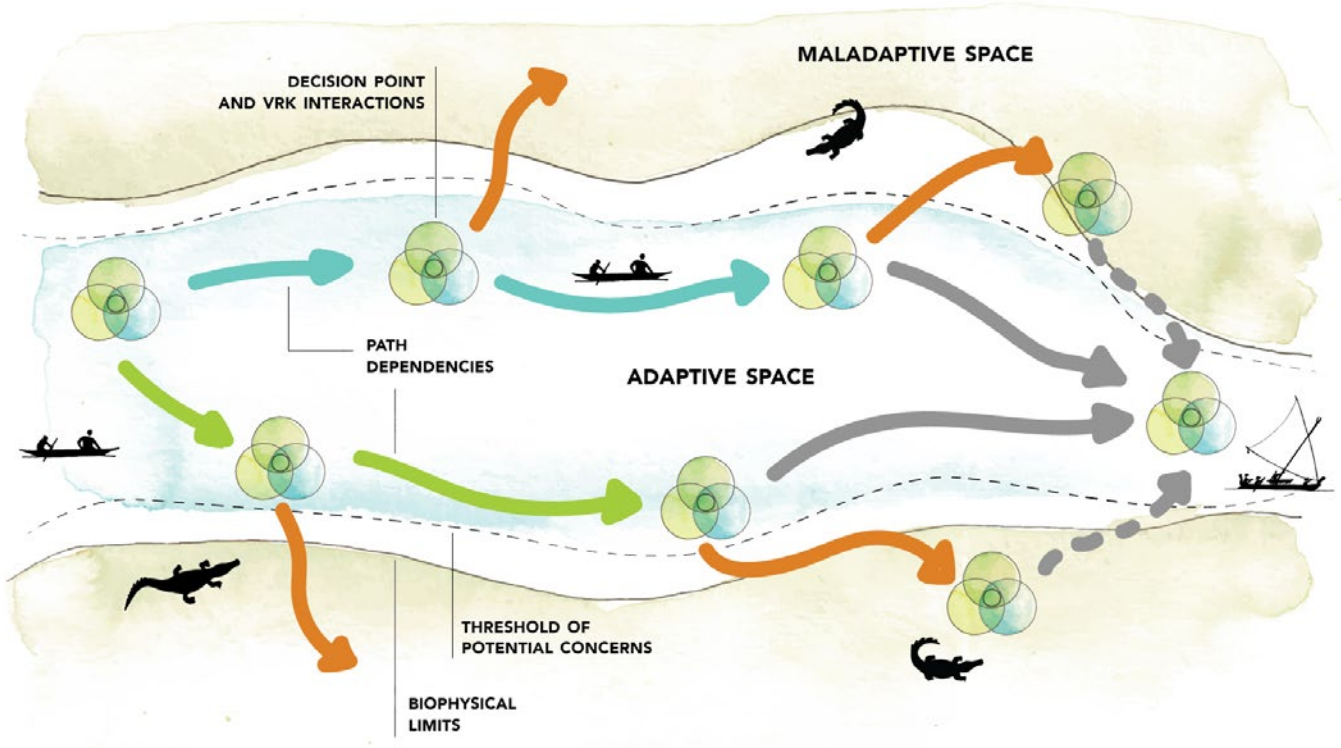


Figure 1 Adaptation pathways. Adapted from: Wise, R.M., Fazey, I., Smith, M.S., Park, S.E., Eakin, H.C., Van Garderen, E.A. and Campbell, B., 2014. Reconceptualising adaptation to climate change as part of pathways of change and response. Global environmental change, 28, pp.325-336. Artwork by Manuela Taboada, Queensland University of Technology

So, how do we plan community development with so much uncertainty?

Some decisions might result in what we need, but others might leave communities more exposed to climate and other impacts or even result in negative or unintended outcomes, termed 'maladaptive'. 'Adaptation pathways' is the practice of decision-making that creates sequences of actions over time to account for rapid change, future uncertainty and shocks (Werners et al. 2021).

The key aim of adaptation pathways is to maintain flexibility to steer away from 'maladaptive' pathways and maintain a pathway towards a community's desired vision for their future. Taking an adaptation pathways approach means regularly scanning the changing future and making adjustments to decisions over time.

Decisions, politics, power and knowledge

Understanding how decisions are made and who makes them central to adaptation pathways. In community development, there are likely to be many different decision-makers involved, with different goals and values, and different kinds of knowledge – creating complex decisions. As a knowledge broker, you will need to know who these 'actors' are and decide how to navigate the politics and power between them, and how best to bring them together and integrate their knowledge. Doing requires acting across the knowledge broker spectrum, from being an infomediary (i.e. facilitating access to information) to being an innovation broker.

As a knowledge broker, you must identify the key decision-makers, how to bring together their knowledge types, and manage the politics and power relations between them.

Figure 2 Different sectors of the community come together to discuss their goals and values.

How to develop Community Adaptation Pathways?

An example from the Solomon Islands (CAPSI)

From 2018 to 2020, a CSIRO project funded by the Australian Government and in partnership with the World Wide Fund for Nature (WWF), Plan International, the Solomon Islands Development Trust (SIDT) and the Australian National University developed a method called Community Adaptation Pathways in the Solomon Islands (CAPSI). In summary, CAPSI involves six steps depicted in this 'roadmap'.

ROADMAP

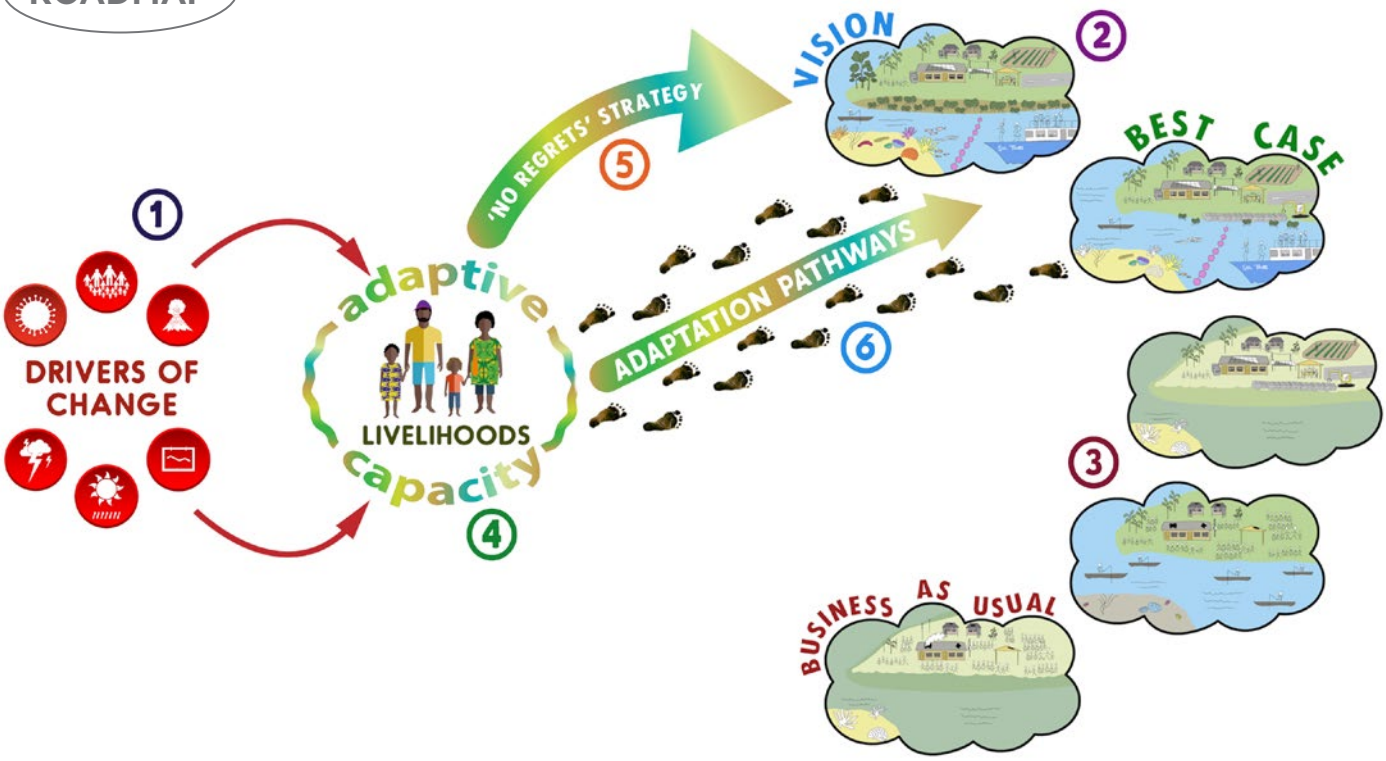


Figure 3 This roadmap outlines the steps of the process that leads to an adaptive plan for your community. The steps are outlined on the following pages. Visual created by Tom Greenwood.

STEP 1 Identify drivers of change affecting the community

Step 1 explores 'drivers of change' which are affecting communities today. 'Drivers of change' are defined as "Any natural or human-induced factor that directly or indirectly causes a change in the system of interest". Examples include climate change, sea level rise, environmental degradation, population growth, economics, pandemics, cultural change, politics, and technology.

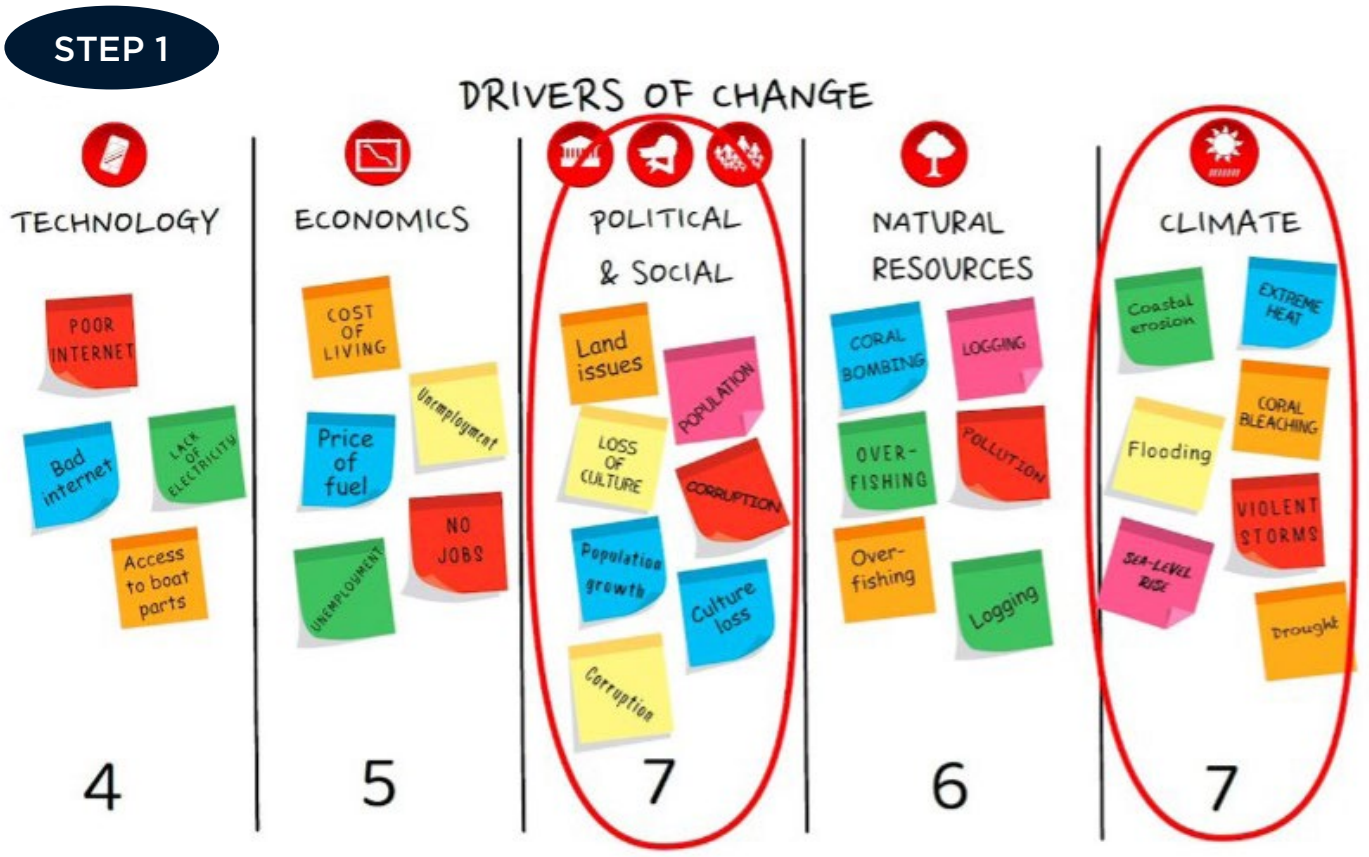


Figure 4 STEP 1 – exploring the drivers of change. Visual created by Tom Greenwood.

STEP 2
Community visions

Step 2 asks participants to discuss and draw the future they want for their children or grandchildren. They should consider all aspects of their lives, including education, food, culture and governance. This vision could be for any year in the future – perhaps 2030, 2050 or 2070. The visions can also consider issues around social inclusion, such as women and girls and people with disabilities.

Figure 5 STEP 2 – developing community visions. Visual created by Tom Greenwood.

STEP 3
Future scenarios / different possible futures

Step 3 explores futures that might happen for the community and their livelihoods based on the drivers of change prioritised in Step 1. Because there is so much uncertainty about the future, and community and government actions may also have an influence, many different futures are possible. Participants create four different scenarios, ranging from 'Best Case' to 'Business as Usual'. The exercise starts by taking the most important drivers identified in Step 1, and drawing them as arrows ranging from 'good' to 'bad' on an axis. You can do this on a white board, paper, or even a flat area of sand.

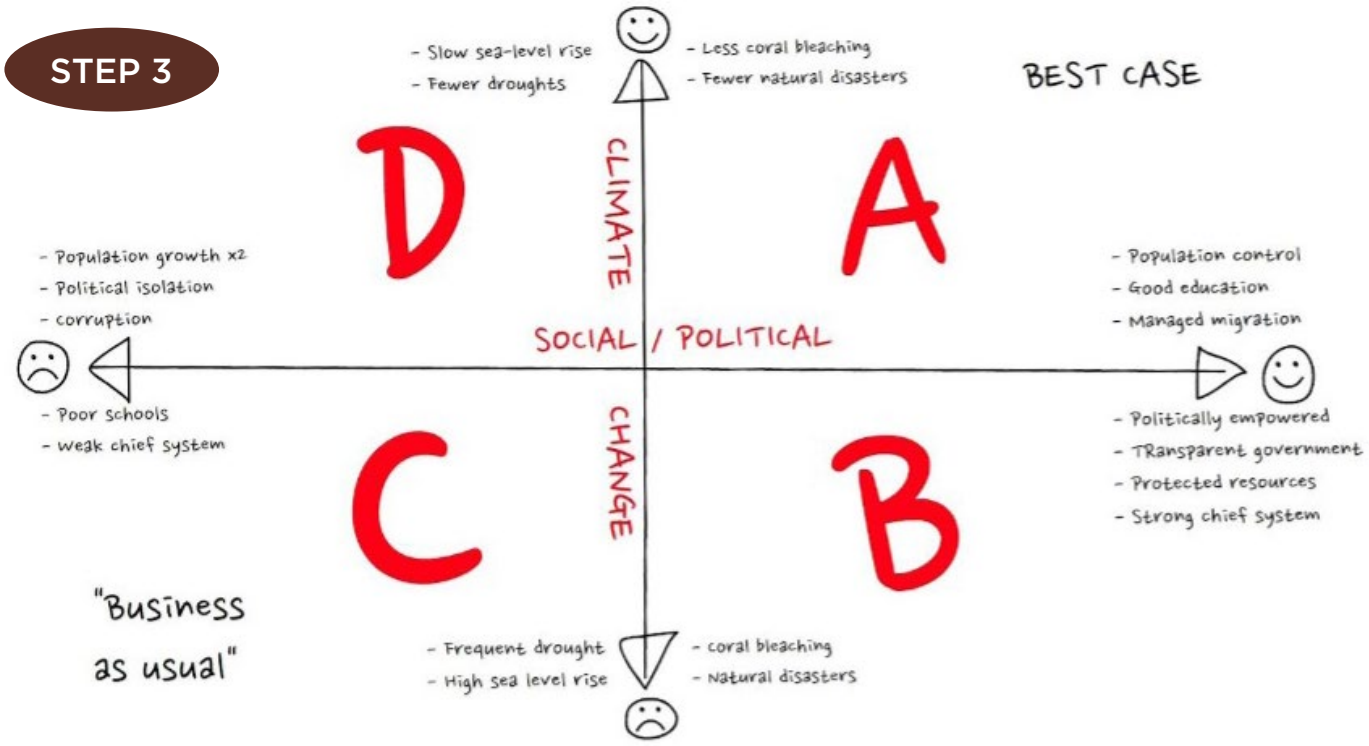


Figure 6 STEP 3 – exploring possible futures. Visual created by Tom Greenwood.

In this example, climate change and social and political issues were the most important drivers. The combinations of these drivers create four potential futures:

A. the 'Best Case', with less extreme climate change and good social and political conditions;

B. an intermediate future with extreme climate change and good social and political conditions;

C. 'Business as Usual', with extreme climate change and poor social and political conditions; and

D. another intermediate future with less extreme climate change but poor social and political conditions.

Participants then draw what they think the community will look like under each scenario and give it a name. This exercise is also covered in more detail in the next lesson.

Scenario under development East New Britain, PNG.
Image credit: Seona Meharg

People discussing their adaptive capacity.
Image credit: Seona Meharg

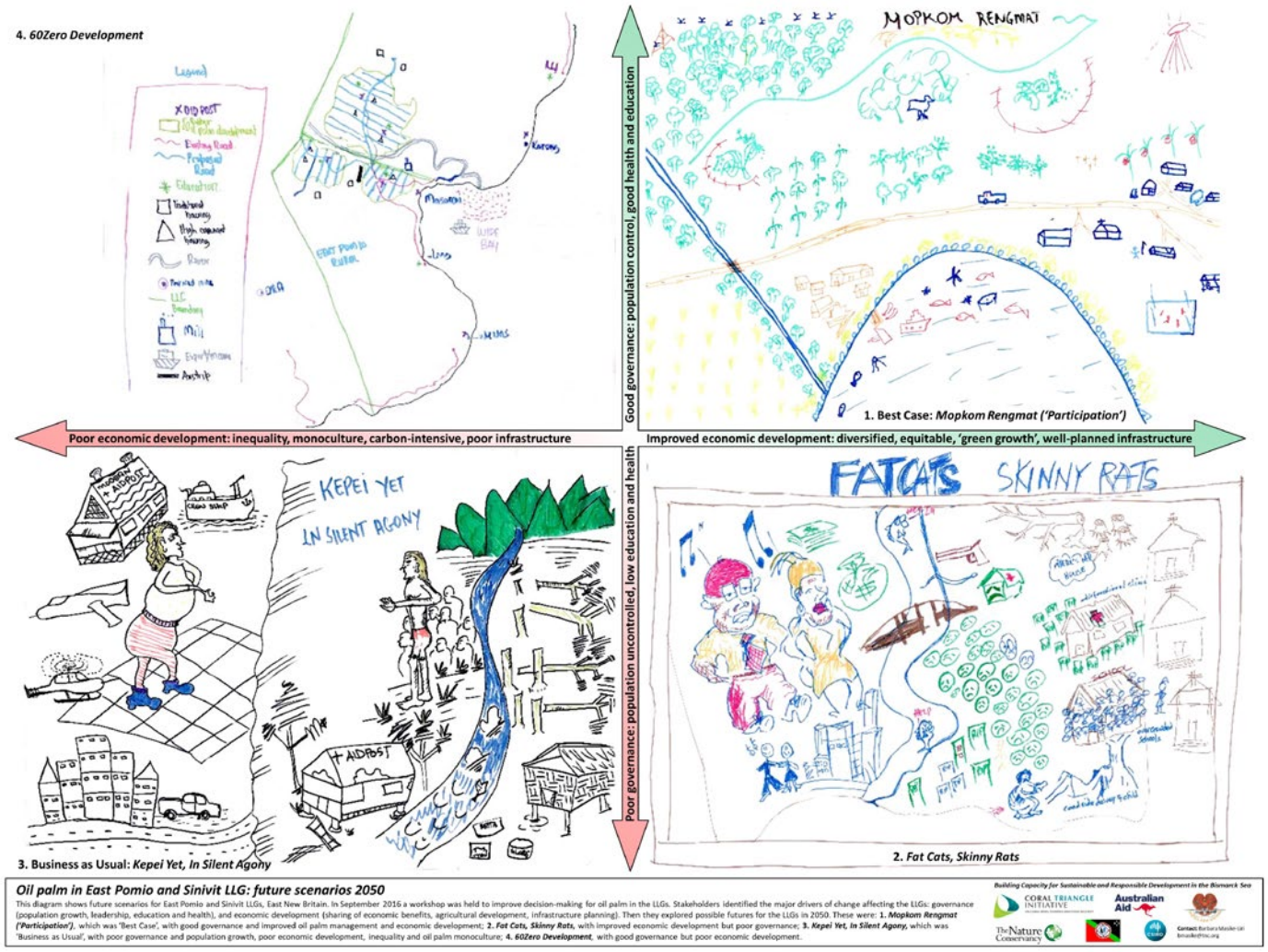


Figure 7 Example of some scenarios on oil palm in East Pomio and Sinivit LLG, Papua New Guinea.
Source: Bismarck Sea project – https://research.csiro.au/bismarcksea/

STEP 4
Community adaptative capacity

STEP 4 asks participants to discuss the 'adaptive capacity' of the community today. Adaptive capacity is "the ability of people and ecosystems to adjust to actual or expected stresses, or to cope with the consequences". We use the 'livelihood capitals' to help people define their strengths and weaknesses: natural, human, social, financial, physical and political. We also consider enabling factors, such as markets, that allow the community to apply their capitals.

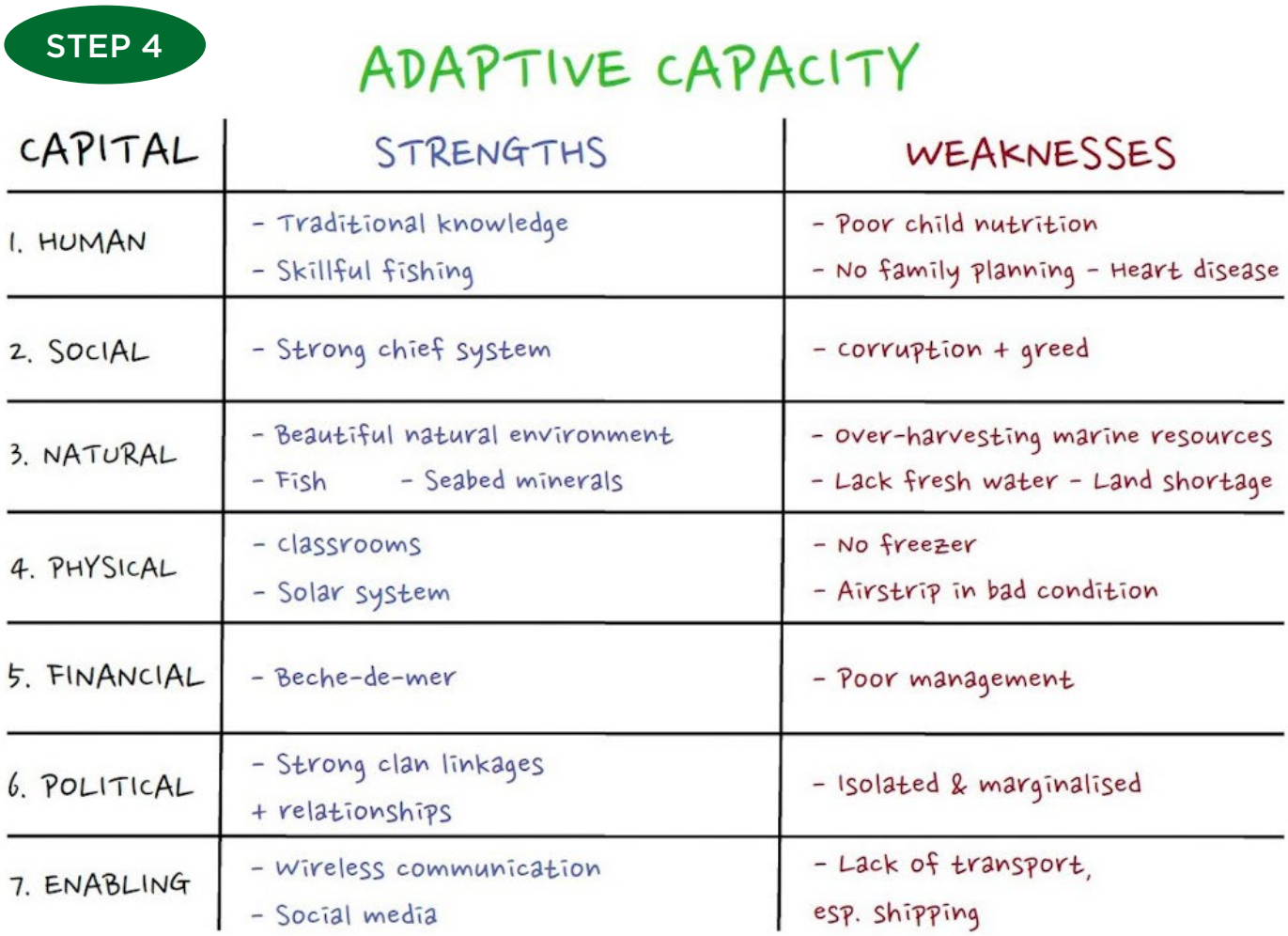


Figure 8 STEP 4 – exploring a community's adaptive capacity by better understanding their livelihood capital strengths and weaknesses.
Visual created by Tom Greenwood

STEP 5
Low or no regret strategies

In **STEP 5**, participants identify the most important strategies needed to progress towards their vision. The results of the adaptive capacity assessment in Step 4 are used to guide them.

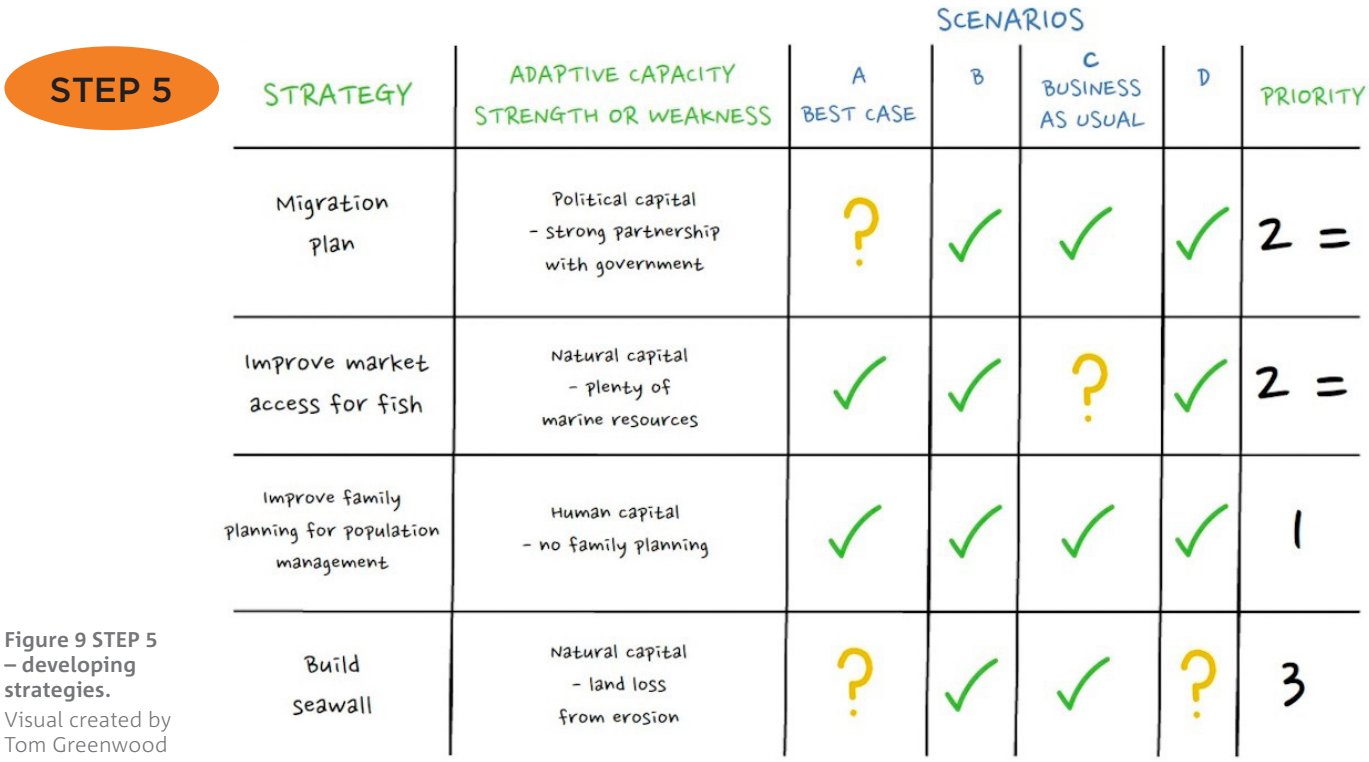


Figure 9 STEP 5 – developing strategies.
Visual created by Tom Greenwood

For example, a migration plan might be necessary to relocate people from an island due to sea level rise. This could build on the community's strong partnerships with the government, which is political capital. Next, participants check each strategy's 'low or no regrets' status.

They use the scenario pictures from Step 3 to compare each strategy and ask:

- What if this scenario happened?
- Would the strategy be a good or a bad thing?"

They place a question mark if the strategy might be maladaptive and a tick if the strategy would be compatible with the scenario. Finally, they prioritise the strategies by totalling the number of ticks – in the example below, improving family planning for population management is the highest-ranked and is the most 'low or no regrets' strategy because it would be compatible with any future scenario

Brokers can ask participants to also think about other changes they are experiencing. The facilitators then divide a board or wall into various themes and invite participants to stick their drivers under the appropriate theme. The drivers are then counted, and the themes with the most drivers are the most important. Through this exercise, it is possible to link local knowledge with an expert or scientific information and understand how different drivers combine to influence the community and its development.

STEP 6
Adaptation Pathways

In the final step, participants draw the 'pathways' of decisions and actions needed to implement the strategies and who should be responsible. In the example strategies from Step 5, a pathways map may look like the picture below. The most important low or no regrets strategy, family planning, should be started immediately, with a series of actions into the future.

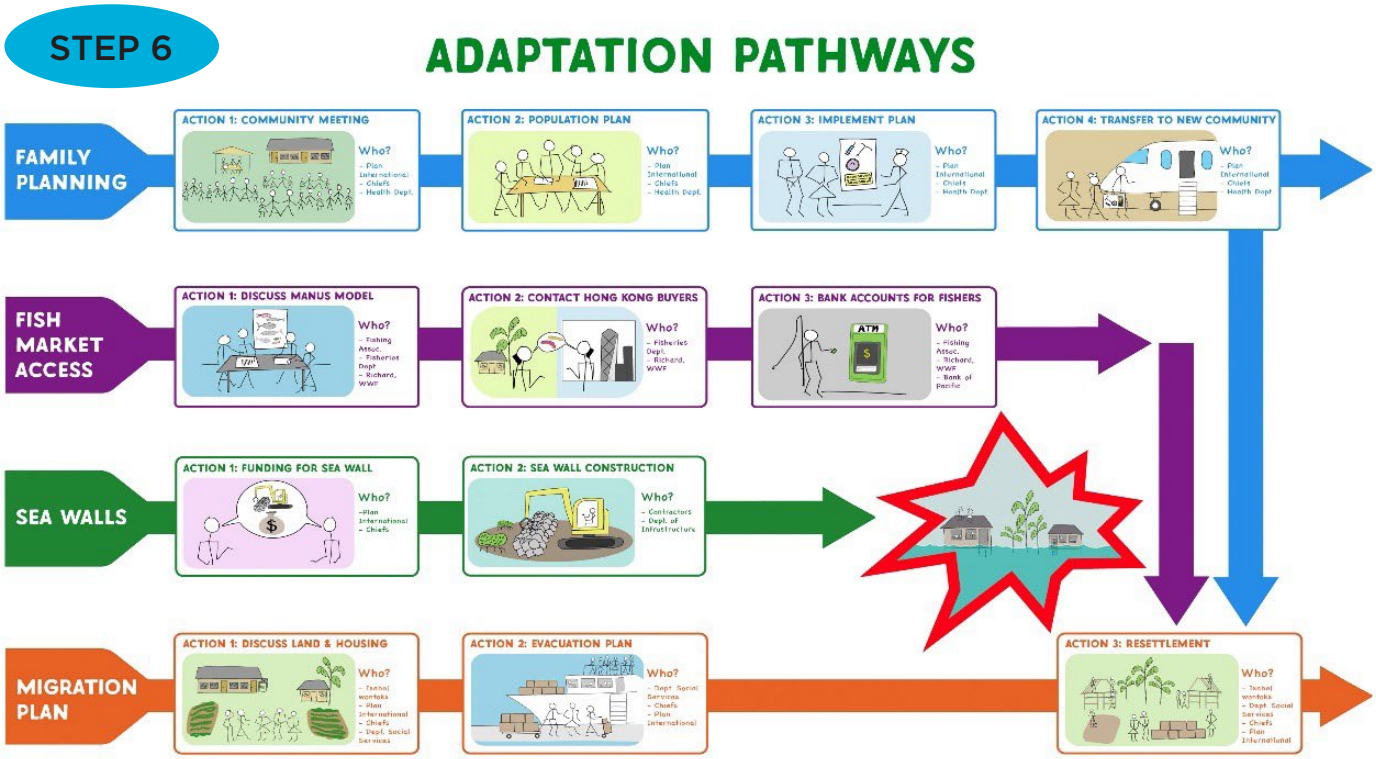


Figure 10 STEP 6 – develop adaptation pathways. Visual created by Tom Greenwood

For example, these might include the Health Department meeting with chiefs to request resources, community meetings to agree on the need for population control, and developing and implementing a population management plan.

Other actions should also begin immediately, such as improving access to fish markets. Building sea walls would start with funding before moving to construction. A migration plan might mean discussing land and housing with the government and other partners on the mainland before developing a community evacuation plan. However, if sea level rise inundates the island, the sea walls and fish market pathways will no longer be relevant because people will have to move off the island, which will be the next action of the migration plan. When inundation happens, the family planning and fish market pathways will have to be linked with the migration plan and the community's new settlement.

Scenario Planning

Scenario Planning is about exploring future scenarios that represent potential uncertainties in the drivers of change. It can also be useful as a stand-alone tool.

Future scenarios are defined as 'articulations of multiple alternative futures that span a key set of uncertainties, applying quantitative or qualitative methods and data to describe plausible trajectories of a system'. (Carpenter et al. 2015)

They are very useful for integrating different types of information and knowledge to explore the future. They can be applied to almost anything – a household, a city, a river catchment, a community, a country, or even the world.

You can learn more about the many **types of scenarios** at https://www.aidr.org.au/media/6932/04-scenarios.pdf

For more on **scenario planning** you can:

- Watch a YouTube video on this module, please see https://www.youtube.com/watch?v=zIAFSUCgAnk
- Explore the scenario planning tool on Learn with ACIFID at https://learnwithacfid.com/pluginfile.php/7580/mod_resource/content/2/Scenario-Planning-Tool.pdf

Repeating Adaptation Pathways Planning

Finally, it is worth remembering that the community adaptation pathways process should be repeated over time, and the pathways reviewed and revised to adjust as change happens. If the strategies are low or no regrets, they should be appropriate under any circumstances, but constant learning and reflection are always important when dealing with complex decisions. This diagram shows how adaptation pathway cycles help maintain the pathway towards the vision and avoid maladaptive pathways.

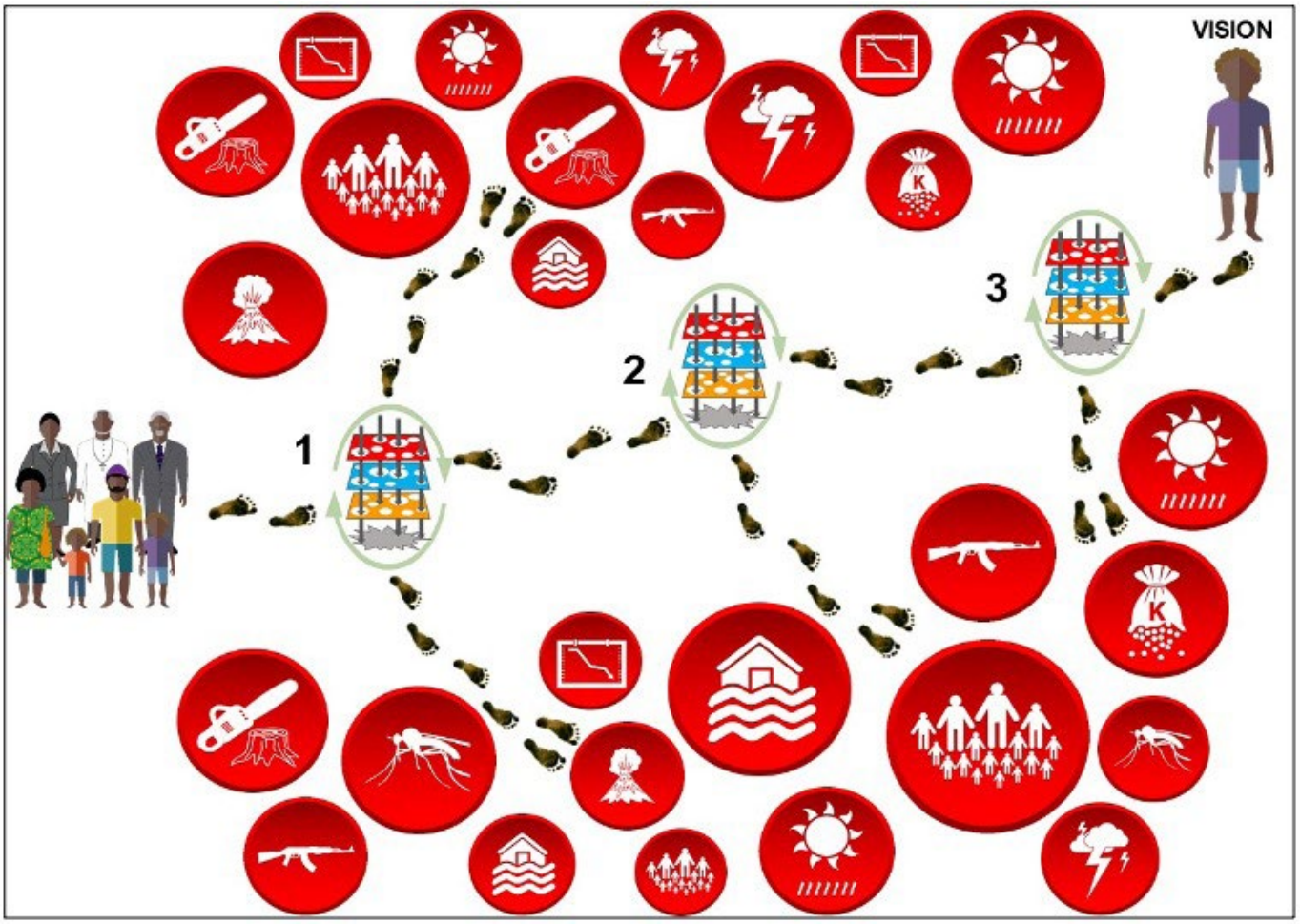


Figure 11 Repeating adaptation pathways. Visual created by Tom Greenwood

Including other Knowledge Broker Support Program tools

The other tools offered in the KBSP program can contribute to different aspects of the community adaptation pathways process by answering particular questions in more depth.

Adding these tools to a CAPSI process is not strictly necessary and depends on the amount of time and resources available and the scope of a community development project.

These tools can also be useful as stand-alone activities, depending on the aims of your project and the resources available.

For example:

- **Governance Mapping** can analyse current decision-making, and identify who should be involved in the adaptation pathways process. It can also inform aspects of Step 4, the livelihood adaptive capacity assessment.
- **Downscaled climate projections** and their impacts on water security and value chains can be used to examine drivers of change in Step 1. More generally, projections of potential climate change can inform possible future scenarios in Step 3.
- **The Well-being Impact Model** (also called ADWIM) can combine climate projections and population projections to analyse their potential impacts on natural resources and livelihoods in Step 1 or Step 3.
- **Theory of Change and Participatory Monitoring Evaluation and Learning** (MEL) can map out the actions needed to implement adaptation pathways, assess whether they are being achieved, and if not, how to make adjustments.
- **Causal Loop Analysis** can be used to understand the drivers within the system and the potential impacts in order to develop interventions.
- **Value Chain Mapping & Analysis** can be used to understand the impact of climate change and other external drivers of change on value chains important for livelihoods of vulnerable communities.
- **Water Risk** and tools, such as for estimating water balance, can be used to gain a better understanding water systems to improve decision making.

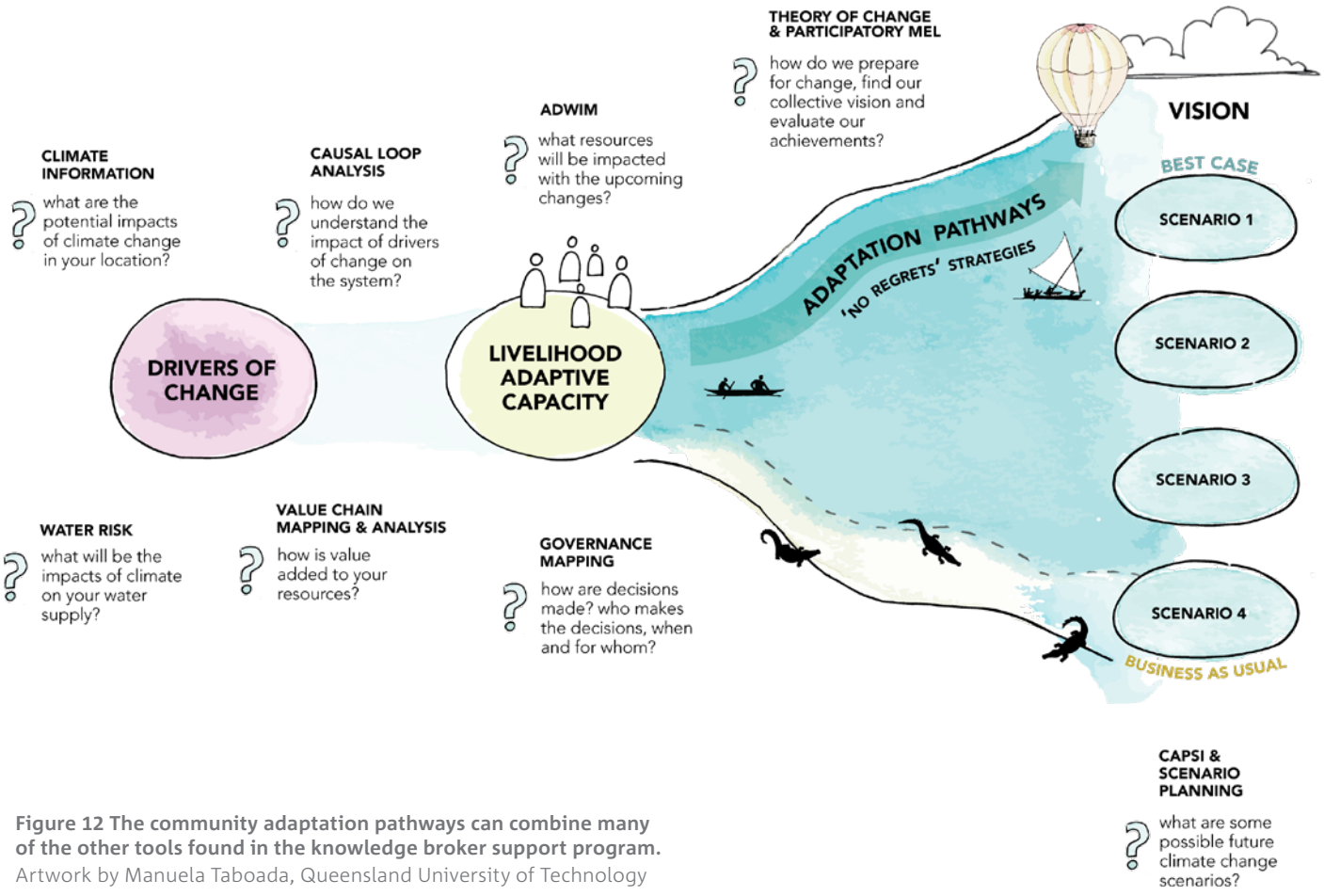


Figure 12 The community adaptation pathways can combine many of the other tools found in the knowledge broker support program.
Artwork by Manuela Taboada, Queensland University of Technology

References and additional resources

If you would like to watch a YouTube video on this module, please see https://www.youtube.com/watch?v=zIAFSUCgAnk

Resources

You can watch this 20 minute video to **learn more about CAPSI** https://vimeo.com/579566387

If you would like to **learn more about the many types of scenarios,** see: Australian Government, Department of Home Affairs. 2019. Climate and Disaster Risk: What they are, why they matter and how to consider them in decision making. 3 Guidance on Scenarios

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Acknowledgements

This module was developed by:

James Butler (CSIRO): a sustainability scientist with a background in agricultural economics, terrestrial, freshwater and marine ecology gained in southern Africa, Europe and Australia.

CSIRO would also like to thank the following people that have been involved in the development of CAPSI and this Module, including:

- **Jamal Namo (Plan International)**
- **Minnie Rafe (WWF)**
- **Nat Burke (WWF)**
- **Remy Barua (Plan International)**
- **Matt Colloff (Australian National University)**
- **Shannon Seeto (WWF)**
- **Richard Makini (WWF)**
- **Zelda Hilly (WWF)**
- **Slade Pita (Solomon Islands Development Trust)**

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