



Step 4: Develop potential pathways: Marae-opoly

After identifying possible options in Step 3, it's time to start piecing them together to develop potential pathways to achieve the agreed vision and objectives.

Marae-opoly is a serious game that was designed to encapsulate the complex adaptation challenge in a way which could be understood and played by all participants. It seeks to reflect reality wherever possible and rely on reasonable assumptions where necessary. The aim of the game is to develop a marae that will fulfil the vision and objectives of the iwi/hapū/whānau through making adaptation decisions over a 100-year time frame on a set budget.

Step 4

1. The players are organised into small groups and presented with a range of options (Step 3), including flood mitigation/protection and upgrading existing or developing new facilities either at the existing marae location or on a new site. Many protection options have ongoing maintenance costs associated with them, players may also decide to invest their money (for a fixed return) and insurance can be purchased if desired.
2. Decisions are made in 10-year blocks meanwhile a rainmaker* is running in the background unleashing a range of rainfall events on the catchment. At the end of each 10-year block, the groups were asked to rate their chosen pathway given the flood events of the preceding decade and against the vision and objectives of the hapū.
3. The game is a facilitated process and each group's decisions are presented back to all the other participants and recorded on a large notice board for other groups to see.
4. The game can be played repeatedly using one of several rainmakers to develop and test different pathways.

*Rainmaker – A simulated record of flooding frequency based on local rainfall records, with an allowance for increased rainfall intensity and flood frequency. The rainfall series used in any given gaming session is randomly selected from several different rainfall series. The rainmaker reflects the unpredictable nature of weather events and the uncertainty associated with different climate change futures.



TIP Playing the game with mixed and targeted groups (i.e., groups made entirely up of tamariki, rangatahi, pākeke, or kaumātua) can give different parts of the whānau a better opportunity to contribute to identifying pathways for further consideration. Targeted groups also offer the benefit of being able to compare different views and approaches between the groups within the whānau in a fun and non-threatening manner.



Resources

The instructions, rainmakers and game pieces can be downloaded from the NIWA website. The game pieces include:

Piece	Description
Game Board	A map of the marae and surrounds.
Cash	\$4,000,000 in pretend money to invest over the next 100 years.
Options Menu	A menu of options to choose from including flood protection improvements, marae upgrades and relocation options. The menu describes the options, pros and cons, the upfront costs, and ongoing maintenance costs.
Decision & Balance Sheet	To track and record decisions, and cash balance.
Emoji Lollipops	To rate how players feel about the performance of their decisions throughout the game.
Whānau wish list 'GREEN' card	Summary of whānau aspirations and priorities to consider when making decisions.
Operating & Maintenance information 'ORANGE' card	Details of operating and maintenance costs.
Insurance information 'BLUE' card	Details of insurance costs and the implications of choosing not to insure the marae.
Flood related maintenance cost table	Flood related maintenance costs for each option.

Tangoio experience

Each group applied a different option over the 100-year timeframe and was able to clearly describe the reason for their choices, their successes and the mistakes they made. Overall the players enjoyed the game and the key messages regarding adaptation were learnt in a memorable way – “It was an awesome way of seeing the bigger picture and what that would look like”.

For many, it enabled key conversations necessary for adaptation to occur in a non-confrontational, experimental way. Each group had to consider many factors in their decision-making like:

Q: What should we do and why should we do that?

Q: When should we act?

Q: What order should we do things?

Q: What will whānau think of these decisions?

Q: Do we have enough money?

Q: What can the whānau live with and live without?

The game was close enough to reality to reflect the necessary choices that needed to be made. Each group approached the simulation differently, some invested, others spent, they all experimented:

“Because we weren’t investing any money into the kete, and so our strategy sort of went a bit hori, spending, spending, spending, then deficit, whoops. For 30 years, a whole generation we went without, but we were still here, we had our land just like our old people.” (Group 1)

“At the beginning, we had lots of spending, we got land and infrastructure and a new marae. We wanted to also protect the current marae, while we had big dreams and aspirations we wanted to ensure that we could continue as a whānau here and protect it from what ever happened. We think our strategy did work. However, we could have done it better and saved ourselves 20 years if we made better decisions. We got too many big dreams up here, and spent too much money and, therefore, we had a lot of down time when we only could pay our costs and insurances, so we would definitely change that.” (Group 4)

“Our strategy was to use short term and long term goals. We looked at investments, we kept our focus and we considered what we had to work with and the needs of our people. The short-term/long-term approach gave us time to think about which direction and having a set budget helped us to realise what we could spend and what we couldn’t.” (Group 2)

Find resources and more information at www.niwa.co.nz/te-kuwaha/tools-and-resources

Jackie Colliar

Project Manager/Environmental Engineer
Email: tekuwaha@niwa.co.nz

Dr Paula Blackett

Environmental Social Scientist
Email: Paula.Blackett@niwa.co.nz

Tania Hopmans

Maungaharuru-Tangitū Trust
Email: info@tangoio.maori.nz