

Te Huringa ki te Rangi – He Rautaki Tāwariwari

Adapting to Climate Change – A decision-making model for Indigenous Peoples



The challenge: adapting to climate change



What could climate change do?

We know that the earth is generally getting warmer. Warmer temperatures will mean many different things including a change in weather. There will be more extremes, heavier rainfalls, hotter summers and more droughts. While we know these trends are occurring and will continue, there is a lot of uncertainty around the impacts of climate change. We don't know for sure how fast the changes could happen or to what extent they will occur.

Why do we need to adapt?

As cultural and community assets and values are threatened by climate change, more communities will face the unavoidable task of addressing the complexity and uncertainty of climate change.

How might we adapt?

There is no silver bullet, no single solution. Every community's situation will be different and require different responses. Any decision or strategy on how to adapt to the challenges created by a changing climate and changing hazards requires a conversation involving many parties based on multiple types of information and knowledge.

Tangoio Marae climate change challenge

The hapū represented by Maungaharuru-Tangitū Trust (MTT) aspire to build a proud, vibrant and modern marae for present and future generations. The current Tangoio Marae complex is located in one of Hawke's Bay's worst flood zones and has been subject to numerous floods dating back to before 1924. Today, the marae complex remains the centre of the universe for the hapū and is still used, albeit by fewer whānau and less frequently.

Given the current flood risks, the uncertain future impacts of climate change and the hapū aspirations for present and future generations, MTT were resolute about providing robust information to enable informed decision-making about priorities and the future form and location of the marae.

To assist with this decision-making process, MTT partnered with NIWA to develop a project proposal which secured Deep South Science Challenge – Vision Mātauranga funding. The primary project objective: “to develop a decision-making model using a real-world example of a community grappling with the challenges and uncertainty of climate change impacts for others to learn from, adapt, improve and use for their unique situations.”



What is 'adaptation pathways'?

Pathways thinking is familiar to all of us. We think this way in our everyday lives, changing and adapting our plans as circumstances require.

'Adaptation pathways' is a strategic planning approach that allows for uncertainty and change. It encourages us to consider multiple futures. This means you can see what your options are, how long these might be effective for and when you might need to change tact.

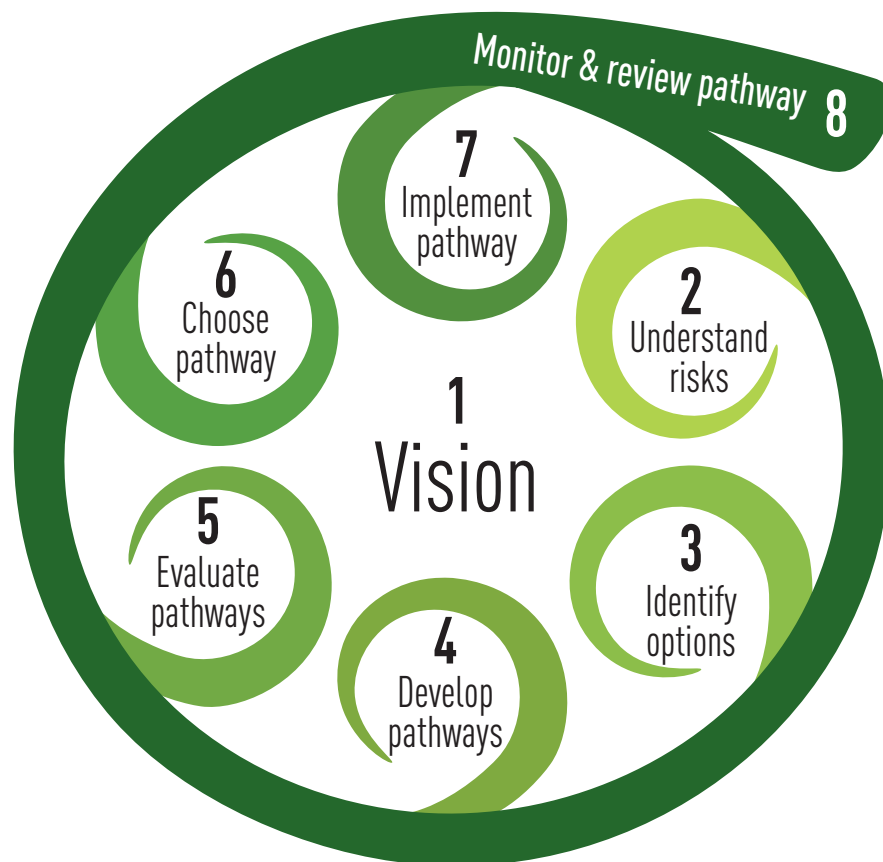
The approach is focussed on achieving an agreed vision and objectives, through proactive planning that acknowledges that there are many ways they can be achieved. Adaptation pathways also support staged decision-making and investment. It allows people to plan and know what they can expect to happen when a predetermined trigger arrives.

Taking an adaptation pathways approach to climate change allows us to develop and implement strategies that address current and foreseeable issues, yet does not compromise options for the future. This approach helps to be flexible and avoids being 'locked in' to a particular track by recognising that circumstances (including our objectives) can change.



Te Huringa ki te Rangi – He Rautaki Tāwariwari

Adapting to Climate Change – A decision-making model for Indigenous Peoples



Te Huringa ki te Rangi is the result of the collaboration between the hapū of Tangoio Marae, Maungaharuru-Tangitū Trust and NIWA.

This decision-making model is transferable and applicable to other Māori, indigenous and coastal communities who are grappling to understand and evaluate climate change impacts and risks, and how to integrate these into development plans that include many and varied objectives.

The model is relevant to any complex decision-making process involving competing objectives, uncertainty and the need to adapt to changing circumstances and knowledge.

Every journey begins with a single step

The steps of Te Huringa ki te Rangi are summarised below. Refer to the information sheets for each step for further details.

Step 1: Clarify vision and objectives

At the core of the decision-making process is a vision and set of objectives to guide the journey and outcomes.

Step 2: Understand risks

To identify, develop and choose appropriate pathways we must understand the nature, extent and impact of past, present and future risks.

Step 3: Identify options

Identify options that achieve community objectives including options to reduce or avoid present and future climate change risks.

Step 4: Develop potential pathways

Sequence options to develop possible pathways. Consider to what degree the different choices will achieve (or not achieve) the vision and objectives as well as the impacts of those choices. This stage requires some difficult conversations.

Step 5: Evaluate pathways

When different pathways have been developed, consider a reduced list of possible pathways and evaluate them further to support decision-making and action.

Step 6: Choose pathway

A good pathway will be staged, flexible and robust for a range of possible futures. Once the possible pathways have been evaluated it is decision-making time.

Step 7: Implement

When your preferred pathway is chosen, move forward and take the first step to put it into action.

Step 8: Monitor and review

This step is fundamental to an adaptation pathways approach as it enables effective, timely responses to changing circumstances and knowledge.



Resources

This folder is designed to share the decision-making model *Te Huringa ki te Rangī* as well as the tools developed and experiences gained from its application with the hapū of Tangoio Marae. We hope that these resources benefit your community and encourage you to use, adapt and improve them to suit your unique situation.

In this folder

- Information sheets describing each step in *Te Huringa ki te Rangī* and the associated Tangoio Marae experience.

Electronic resources

- Further information on the project and additional resources are available to download from:
www.niwa.co.nz/te-kuwaha/tools-and-resources
www.deepsouthchallenge.co.nz
- Available resources include:
 - Marae-opoly game material and instructions
 - video productions on the impacts of Cyclone Bola and 1968 Flood events on Tangoio Marae
 - overall project report
 - project presentations, surveys, evaluation forms and feedback
 - modelling results and animations.



Acknowledgements

'Ka pūwaha te tai nei, hōea ngātahi tātou!'

Kei ngā tōtara pū, kei ngā uru kahika o te marae o Tangoio, te Poari o Maungaharuru-Tangitū (Ngāti Marangatūhetaua, Ngāti Whakaari, Ngāti Taurira, Ngāti Kurumōkihi, Ngāti Te Ruruku ki Tangoio me Ngāti Tahu), tatū atu ki te whānau a Doohan, Te Kaunihera ā Rohe o Te Matua-a-Māui, otirā Te Kōmata-o-te-tonga hoki, nā koutou i utu ai ngā nama mō tā mātou mahi rangahau, tēnei te mihi kau atu a NIWA ki a koutou katoa e aku rangatira. Mei kore ake ō koutou pūmau ki te kaupapa, ka kore, kore rawa atu tēnei kaupapa e ora ai. Nō reira tēnā hoki koutou katoa. E hiahia ana hoki te rōpū o NIWA ki te whakanui i a Sam Toka nō Waikato me Ngāti Mahuta, nāna i homai te ingoa, 'Te Huringa ki te Rangī'.

'When there is a break in the waves, we paddle together!'

To the esteemed ones, the leaders of Tangoio Marae, the Maungaharuru-Tangitū Trust (Ngāti Marangatūhetaua, Ngāti Whakaari, Ngāti Taurira, Ngāti Kurumōkihi, Ngāti Te Ruruku ki Tangoio me Ngāti Tahu), to the Doohan family, the Hawkes Bay Regional Council, and also the Deep South National Science Challenge, who funded our research programme, the project team would like to take this opportunity to acknowledge you all. If it wasn't for your commitment and support, this programme would not have been successful. For that reason salutations to you all. The project team would also like to acknowledge Sam Toka (Waikato, Ngāti Mahuta) for the name 'Te Huringa ki te Rangī'.

Find out more

For more information on the decision-making model – Te Huringa ki te Rangī or exploring adaptation pathways for Tangoio Marae please contact:

Jackie Colliar

Project Manager/Environmental Engineer
Email: Jackie.Colliar@niwa.co.nz
Tel: +64 7 856 7026

Dr Paula Blackett

Environmental Social Scientist
Email: Paula.Blackett@niwa.co.nz
Tel: +64 7 856 7026

Darren King

Environmental Scientist – Climate Applications
Email: Darren.King@niwa.co.nz
Tel: +64 9 375 4533

Tania Hopmans

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

Te Huringa ki te Rangī - literally translated is "The changes within the heavens". This title reflects the eternal battle between Tāwhirimātea (god of wind and storms) and Tūmatauenga (the god of war and of mankind) which followed the separation of Papatūānuku and Ranginui. In the creation story, the children of Ranginui (the sky father) and Papatūānuku (the earth mother) wished to separate their parents so that light could come into the world. The only brother who did not agree to this was Tāwhirimātea who plotted revenge against the other brothers. After defeating Tāne-nui-a-rangi (also known as Tāne Mahuta), Tangaroa, Rongomātāne, and Haumia-tiketike, Tāwhirimātea then turned his wrath towards Tūmatauenga, the one who suggested killing their parents.

Tūmatauenga stood firm and endured the fierce onslaught of gale force winds, lightning, thunder, driving rain and hail sent by his brother. Tū cast incantations known as tūā to cause the raging tempest of the heavens to calm down. His endurance against Tāwhirimātea's eternal need to seek revenge is a symbol of mankind's resilience when faced with extreme adversity. However, this is a battle that can never be truly won by Tāwhiri or Tū. Tāwhirimātea continues to attack people in storms and hurricanes, trying to destroy us on sea and land. In return, we must resist, plan, strategise, and adapt to survive the attacks served us.

He Rautaki Tāwariwari - literally translated is "A Flexible Strategy" and reflects the need for our planning to be strategic and proactive whilst also having the flexibility to be adjusted to meet changing circumstances and needs.