



Environmental  
Protection Authority  
Te Mana Rauhi Taiao

Partnership  
in action:  
The EPA's  
mātauranga  
framework

# mātauranga framework



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# **Partnership in action: The EPA's mātauranga framework**

This report describes the EPA's mātauranga framework, which is a tool to enable decision-makers to understand, probe and test mātauranga evidence effectively.

# Foreword from the Chairperson

The EPA is embarking on a transformational change to focus our expertise, effort and resources to the things that matter most to the environment, and to the nation. As a proactive environmental regulator we are giving greater emphasis to our level of engagement with communities and stakeholders, and to building our compliance, monitoring and enforcement roles. We are committed to our strategic goal of delivering the right decisions.

Effective incorporation of mātauranga into our decision-making processes and wider work is being delivered under the EPA's mātauranga programme. It is a strategic priority that is helping us strengthen the public's trust in the EPA. To be confident in our decisions, we must be rigorous in the process of reaching them. Our decisions will always be based upon the best available mātauranga and scientific evidence.

The mātauranga framework – a tool to help EPA decision-makers test and probe mātauranga when it is presented in evidence – is the first of its kind to be developed in the natural resources sector. I commend the EPA on its insightful approach to designing the mātauranga framework, which has taken a deliberate dual focus on the expressed needs of decision-makers, while being underpinned by tikanga Māori, to reflect the worldview of Māori who participate in our decision-making processes.

I would like to acknowledge the leadership and vision of Ngā Kaihautū Tikanga Taiao, the Chief Executive, and the Executive Leadership Team, as they continue to prioritise this ground-breaking work. I also wish to sincerely thank members of our Te Herenga network for their significant contribution to the mātauranga programme.



**Julie Hardaker**  
Chairperson of the Board  
Environmental Protection Authority

# Ngā Kaihautū Tikanga Taiao kōrero

**E kore e ngāro tō purapura i ruia  
mai i Ranigiātea.**

The seeds that were sown in Ranigiātea  
will never be lost.

**Ko te wehi ki a Ihoa, nānā nei  
ngā mea katoa.**

Acknowledgements to the source  
of all things.

**Kei ngā mate huhua o te wā,  
haere ki a nunui mā, ki roroa mā.  
Haere ki te moenga tē whakaarahia.**

To the many deceased, we bid you  
farewell to the resting place from  
which you will not arise.

**Kei ngā ringa raupā, kei ngā  
kaitiaki huri noa i te motu;  
kei ō koutou waka, ō koutou hapū,  
tēnā koutou, tēnā koutou,  
tēnā tātou katoa.**

Sincere greetings to those of  
you throughout the country  
vigorously involved in kaitiaki  
roles. I also acknowledge your  
various tribal connections.

Ngā Kaihautū Tikanga Taiao is the statutory Māori advisory committee established to provide advice and assistance to the EPA on matters relating to policy, processes, and decisions. Our purpose is to provide advice and guidance to the EPA Board, and ensure Māori perspectives are known and incorporated into the EPA's daily work. Māori perspectives are critical to decision-making across the breadth of work undertaken by the EPA.

In recent years, our focus has been to support the EPA's mātauranga programme, and the successful development of the mātauranga framework. The mātauranga framework is a testament to the shared vision and strong leadership across the EPA about the importance of weaving mātauranga – and the rich cultural knowledge and practices embodied therein – into EPA decision-making and work.

Ngā Kaihautū Tikanga Taiao wishes to sincerely acknowledge the extensive contribution of members of Te Herenga, the EPA's network of Māori environmental practitioners centred in the regions, and Ngā Parirau o te Mātauranga, the kaumātua group drawn from within Te Herenga, who have tirelessly shared their wisdom and expertise with the EPA for many years.

Ngā Parirau o te Mātauranga, “the wings of knowledge”, or messengers of cultural wisdom and knowledge, aptly describes the role of our kaumātua through this work. Ngā Kaihautū Tikanga Taiao thanks them for the depth of knowledge and guidance they have generously provided to ensure the mātauranga programme – and most recently the mātauranga framework – have integrity from a tikanga Māori perspective.

The EPA is working hard to embed the mātauranga framework into its work. There is only one Aotearoa and one world. He waka eke noa – we're all in this canoe together.



Mā tini, mā mano, ka rapa te whai  
**Lisa te Heuheu**  
Tumuaki – Ngā Kaihautū Tikanga Taiao

# Foreword from the Chief Executive

The EPA is ambitious in the pursuit of our vision of an environment protected, enhancing our way of life and the economy. We work every day to protect our fauna and flora, while growing our vibrant economy, with the work we undertake on land, at sea and in the air. The decisions we make today affect the lives of many New Zealanders, both now and in future generations.

New Zealand's environment is constantly evolving, as are the pressures it faces. As New Zealand's environmental regulator, the EPA makes decisions on complex issues, based on evidence from science, mātauranga, and data. We strive to find a balance among competing and complex pressures, in the search for a better New Zealand. We operate independently and transparently, providing detailed reasons for our decisions.

It is with considerable pride that we launch the EPA's mātauranga framework, a tool to help our decision-makers weave mātauranga and conventional science to create a uniquely New Zealand way of addressing environmental issues.

The development of the mātauranga framework has truly been partnership in action – it is the culmination of an evolving discussion over many years on incorporating Māori perspectives into our decision-making and daily work between the EPA (and its predecessor, the Environmental Risk Management Authority), Ngā Kaihautū Tikanga Taiao, Te Herenga, and Ngā Parirau o te Mātauranga.

I acknowledge the substantial contribution and commitment of Ngā Kaihautū Tikanga Taiao to encourage the EPA to explore the place for mātauranga within EPA decision-making processes and policies.

I would also like to express my heartfelt thanks to the EPA's Te Herenga network, and Ngā Parirau o te Mātauranga, for their willingness to share their experience and wisdom, providing a strong tikanga basis to the mātauranga framework, which underpins its integrity.

I congratulate EPA staff for rising to the challenge set by the EPA Board through its strategic intention for the EPA to increase the trust of the nation, Māori, and business through our decision-making processes. We continue to break new ground as we make the weaving of mātauranga and conventional science real in our daily work.



**Dr Allan Freeth**  
Chief Executive  
Environmental Protection Authority

# Contents

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	<b>Foreword from the Chairperson</b>	<b>02</b>
	Ngā Kaihautū Tikanaga Taiao korero	03
	Foreword from the Chief Executive	04
	Executive summary	06

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<b>01</b>	<b>Background</b>	<b>08</b>
	The EPA's aspiration	09
	The nature of mātauranga	09
	Recognising and incorporating mātauranga	11
	The EPA's current practice	11
	The EPA's mātauranga programme	12

---

<b>02</b>	<b>Developing the mātauranga framework</b>	<b>14</b>
	Waka hourua: a partnership approach	15
	Mātauranga framework work streams	16
	Building the evidence base	16
	Effectively testing and probing mātauranga evidence	17
	Mātauranga framework	18

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<b>03</b>	<b>Qualitative analysis: findings</b>	<b>24</b>
	Interviews with past decision-makers	25
	Mock hearings	26

---

<b>04</b>	<b>Implementing the framework</b>	<b>28</b>
	Building decision-makers' cultural capability	29
	Engaging with Māori and industry	29
	Refining EPA processes	30
	Next steps	30

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	Glossary	31
	References	33
	Bibliography	34
	Case law references	38

# Executive summary

The Environmental Protection Authority (EPA) has developed a framework to help its decision-makers to understand, test and probe mātauranga when it is presented in evidence.

Mātauranga<sup>1</sup> is the pursuit of knowledge and understanding of Te Taiao – the natural environment – following a systematic methodology based on evidence, and incorporating culture, values and world view (Hikuroa 2017).

Mātauranga has its own unique characteristics which are as valid as, but different from, other knowledge systems, including science.

To enable a partnership approach, and to facilitate well-informed decisions, EPA decision-makers and staff need to assess both mātauranga and science-based evidence<sup>2</sup>.

Ngā Kaihautū Tikanga Taiao (Ngā Kaihautū) and Ngā Parirau o te Mātauranga<sup>3</sup> (Ngā Parirau) stress that evidence based on mātauranga knowledge should be capable of being given equal weight to evidence based on science. Further, the veracity and rigour of mātauranga-based evidence should be evaluated by applying a mātauranga-based framework.

The EPA has commissioned a multi-year mātauranga programme of work. Its primary goals are to:

- enable well-informed decision-making;
- ensure the EPA understands the issues and implications of mātauranga for its decision-making processes;
- increase the understanding of mātauranga across the EPA.

A waka hourua, or double-hulled canoe, symbolises the EPA's approach to mātauranga. The two hulls represent two knowledge systems – mātauranga and science – moving together in the same direction. The interwoven sails represent the information, evidence, advice, and risk assessment that inform EPA decisions.

To identify how a decision-maker might effectively test and probe mātauranga when it is presented in evidence, Kaupapa Kura Taiao<sup>4</sup> synthesised key themes from the evidence base they developed with advice and support from EPA staff. This incorporated feedback gathered over a number of years from Ngā Parirau. Kaupapa Kura Taiao created a set of criteria to measure effectiveness. The evidence base shows that, in order to test and probe mātauranga evidence effectively, EPA decision-makers could use a sequence of questions. These are portrayed diagrammatically in this report, and are discussed in detail in “Effectively testing and probing mātauranga evidence” on page 17.

Kaupapa Kura Taiao interviewed a range of past decision-makers to canvass their experience and understanding of Māori perspectives – including mātauranga – and their confidence to test and probe mātauranga evidence. Their feedback informed development of the mātauranga framework.

1 Ngā Parirau choose to drop “Māori” from “mātauranga Māori”, as it needs no qualifier.

2 A decision-maker can only consider evidence that is submitted to them, or that they obtain on request. The evidence needs to be relevant to the issues to be decided.

3 The EPA's kaumātua group, formally established in 2010 under the previous Māori National Network of the Environmental Risk Management Authority, drawn from Te Herenga members. Te Herenga is the EPA's network of Māori environmental practitioners from across New Zealand. Ngā Parirau o te Mātauranga, which means the wings of knowledge, are the messengers of cultural wisdom and knowledge.

4 The EPA's Māori policy and operations unit.

Kaupapa Kura Taiao also held three mock hearings to check the effectiveness of the framework as a tool for decision-makers to understand, test and probe mātauranga presented as evidence. It invited senior EPA managers and members of Ngā Kaihautū to play the role of EPA decision-makers, using mock scenarios relevant to applications about Hazardous Substances and New Organisms, and the Exclusive Economic Zone. Participants had two hours to use the framework, as they tested and probed oral submissions given by mock submitters. The results are reported in “Mock hearings” on page 26.

To meet the expressed needs of its decision-makers, the EPA aims to enhance their capability to consider different world views, and confidence to incorporate both mātauranga and science into their decision-making. This is explained further in “Building decision-makers’ cultural capability” on page 29.

Well-informed decision-making includes effectively incorporating Māori perspectives. The EPA wants to ensure that Māori, whānau, hapū and iwi perspectives are heard. Kaupapa Kura Taiao will invite Te Herenga members to a series of regional wānanga to share how their views have been incorporated in the framework’s development. It will also explain what Māori submitters may expect in a hearing situation, when decision-makers use the framework. Kaupapa Kura Taiao may also offer guidance about what information may be helpful to include in a submission on any application before the EPA.

The EPA encourages anyone planning to submit an application or proposal to the EPA to engage with Māori groups whose interests may be affected by the application. Over the past year, the EPA has shared its aspirations for the mātauranga framework with industry groups at conferences, workshops, and meetings during the pre-lodgement phase of applications. The EPA will build on communicating its aspirations with industry and applicants, including the value of meaningful engagement with Māori.

The EPA will work to further facilitate the sharing and transmission of mātauranga in its processes.

The mātauranga programme is breaking new ground for the EPA. The mātauranga framework will be refined as the work streams progress, and new lessons emerge. This iterative approach was agreed by Ngā Kaihautū, the Executive Leadership Team and the EPA Board.

The mātauranga programme’s methodology will remain underpinned by the ongoing guidance of Ngā Kaihautū, Ngā Parirau, and Matakīrea<sup>5</sup>. This will continue to ensure integrity from a tikanga Māori<sup>6</sup> perspective.

5 The mātauranga programme’s external working group that informs development and delivery of the EPA’s mātauranga framework and work programme. It also ensures the integrity of this work from a tikanga and mātauranga perspective. Matakīrea means the end feathers of a bird’s wings, which are used as navigational aids.

6 Set of practices, customs and traditions that are accepted as a reliable and appropriate way of achieving and fulfilling certain objectives and goals.

# Background

# 01

## The EPA's aspiration

The Environmental Protection Authority (EPA) has commissioned a work programme to help its decision-makers to understand, test and probe mātauranga when it is presented in evidence. Mātauranga is broadly defined as a body of knowledge, experience, values and philosophy of Māori (Mead 2016, Winiata 2001).

In its decision-making, policies and processes, the EPA considers Māori interests, values and perspectives, and to the extent that is consistent with its statutory frameworks, takes into account the principles of Te Tiriti o Waitangi, the Treaty of Waitangi.

When assessing applications that may impact on the environment, EPA decision-makers assess and balance statutory factors, which may include cultural, environmental, social, and economic factors. This is complex, and may involve making difficult trade-offs. EPA decision-making committees with specialist knowledge are convened to consider a wide range of applications. These cover such things as:

- proposals to introduce new organisms to New Zealand
- applications seeking approval for use of a particular hazardous substance
- proposals seeking consent for activities to be conducted within New Zealand's Exclusive Economic Zone.

Members of decision-making committees are adept at weighing scientific and economic evidence, and can interrogate the most technical of data. But a number lack confidence to understand, test and probe mātauranga when presented as evidence. That conclusion is based on discussions with past decision-makers, and with Ngā Kaihautū, Ngā Parirau and Matakīrea.

EPA staff advise and support decision-makers, but members of decision-making committees themselves need to be confident in hearing and evaluating mātauranga evidence, as they are with other types of evidence. This responsibility cannot be devolved to others.

## The nature of mātauranga

Mātauranga can be described as the pursuit of knowledge and comprehension of Te Taiao – the natural environment – following a systematic methodology based on evidence, and incorporating culture, values, and world view (Hikuroa 2017).

Mātauranga has its own unique characteristics which are as valid as, but different from, other knowledge systems, including science. However, some disregard mātauranga, because they perceive it as “myth and legend, fantastic and implausible”. In fact, mātauranga includes knowledge generated using techniques consistent with a scientific approach, but which are explained according to a Māori world view (Hikuroa 2017).

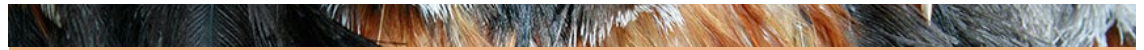
In an article entitled *Mātauranga Māori – the ūkaipō of knowledge in New Zealand*, Dr Daniel Hikuroa – a member of Ngā Kaihautū, and senior lecturer in Anthropology at the University of Auckland – puts it like this.

“Pūrākau (traditional Māori narratives) and maramataka (the Māori calendar) comprise codified knowledge and include a suite of techniques empirical in nature for investigating phenomena, acquiring new knowledge, and updating and integrating previous knowledge. They can be both accurate and precise, as they incorporate critically verified knowledge, continually tested and updated through time” (Hikuroa 2018).

Mātauranga pertains to universal phenomena of life experienced by all living beings, not only to knowledge specific to human beings. It makes no distinction between the spiritual and material worlds, which are conceived of as constantly interacting with one another.

“Mātauranga...is essentially a system of knowledge and understanding about Māori beliefs relating to creation, the phases of creation and the relationship between atua (supernatural guardians), and tangata (mankind). This relationship or whakapapa (genealogy) determines the way people behave in the context of their environmental ethnical practices” (EPA 2016).

Mātauranga has a strong oral tradition – it is transmitted in a variety of forms, including whakapapa, waiata, haka, whakataukī, pūrākau, kōrero tuku iho, and whakairo. Whakapapa is a central principle that connects and orders the universe, linking the physical and spiritual worlds, tracing the universe back to its origins. Below is an example of a pūrākau guiding environmental research into natural hazards (Walker 1993).



### **Pūrākau as an example of mātauranga**

Dr Darren King, a member of Te Kuwaha o Taihoro Nukurangi – the National Institute of Atmospheric Research Limited (NIWA) National Centre for Māori Environmental Research – works in partnership with hapū and iwi to improve their shared understanding of the seismic and tsunami hazards facing Aotearoa New Zealand.

In Te Tau Ihu (the top of the South Island) Ngāti Kuia, Ngāti Koata and researchers are weaving mātauranga and science together to trace tsunami through history. Written ethnographical records, oral histories, and a pūrākau of past tsunami that describes impacts focusing on Rangitoto<sup>7</sup>, have informed geological surveying sites. Deepening knowledge of past tsunami events in Raukawa<sup>8</sup> region will help to build a clearer picture of future risk.

Pūrākau are Māori narratives – sometimes referred to as stories or legends – that deal with ancestral deeds, teachings and whakapapa (King 2017, King 2018).

Mātauranga embraces intergenerational continuity. Drawing on the knowledge of ancestors, it allows contributions to knowledge in the present to be passed on to descendants in the future. It can therefore be dynamic, regenerative, and capable of evolving to respond to modern day situations.

As landowners, kaitiaki, governors and managers of significant natural resources, Māori contribute a unique range of knowledge, skills, and experience. The insights from mātauranga can assist both robust, effective decision-making, and a holistic approach to environmental management.

While key principles and features of mātauranga are consistent between hapū and iwi, there are important regional and tribal differences. As members of Ngā Parirau point out, kaumātua from one rohe would not speak about the mātauranga from another rohe – mātauranga is, by its nature, local knowledge.

Different hapū and iwi have developed their own maramataka, for example, drawing on centuries of observation, prediction, and testing of this knowledge. Maramataka is used to schedule certain activities, such as planting and harvesting kai, gathering kaimoana, or fishing, as well as important rituals or hui. Maramataka varies among hapū and iwi, depending on factors such as local climate, flora and fauna.

So while some examples of mātauranga are specific to their locality, others may have national application. The following pūrākau is a good example.

7 D'Urville Island.

8 Cook Strait.



## Taniwha as an example of mātauranga

Taniwha can mean different things to different whānau, hapū and iwi. A widespread understanding is that taniwha are kaitiaki – our guardians – for specific areas, waterways or resources. When used in that sense, they may serve as a warning of danger.

In 2002, during construction of the Waikato expressway, Ngāti Naho voiced concern that a section near Meremere would encroach upon the lair of Karu-tahi, a taniwha. After consultation with Transit New Zealand, the section was re-designed and the route slightly altered.

Almost 14 months after construction, a flood inundated the lair of Karu-tahi. However, the re-design ensured that the expressway was not threatened. In this case, it can be argued that Karu-tahi is an explanation for observed potentially dangerous flooding events, explained according to a Ngāti Naho worldview.

Heeding Karu-tahi, as Transit New Zealand did, is a form of risk reduction, and accordingly Karu-tahi acted as guardian of the expressway.

## Recognising and incorporating mātauranga

Cultural models and frameworks that incorporate mātauranga and science are increasingly being used in various jurisdictions to inform environmental management, policy, processes and decision-making (Harmsworth 2013, Ellis 2005).

Te Tiriti o Waitangi provides a foundation for recognising the rights and interests of Māori, and this is reflected in national legislation. It has taken considerable time and resources for agencies and institutions to grasp how best to give effect to Māori rights and interests, and further work will be done.

In the broader context, the incorporation of mātauranga into environmental decision-making has largely been driven by rights-based environmental pressure by Māori, mainly based around:

- the Resource Management and Local Government Acts
- Treaty of Waitangi settlements
- Waitangi Tribunal reports
- growing recognition and understanding of Māori rights and interests by institutions and agencies
- informing sustainable environmental management, using a more holistic understanding of the relationships among Te Taiao.

Overall, the EPA considers it has a broad mandate to inform itself about Māori perspectives (whether in the form of mātauranga or otherwise) on any matter, including in relation to its decision-making functions. The EPA can, and should consider and use Māori perspectives in decision-making, to the extent that they are relevant within the statutory context.

## The EPA's current practice

As an environmental decision-maker, the EPA considers both mātauranga and science. EPA decision-makers and staff are capable and confident to query, test and assess matters pertaining to science. Metaphorically, they are able to turn over the stones of familiar knowledge systems, and scrutinise what lies beneath. However, their confidence and ability to turn over the stones of Māori perspectives, including mātauranga, is limited.

To enable a partnership approach, and to facilitate well-informed decisions, EPA decision-makers and staff need to assess both mātauranga and science-based evidence.<sup>9</sup>

The EPA recognises the unique relationship of Māori with the New Zealand environment, their place as tāngata whenua – the people of the land – and the important role they play in economic, environmental, social, and cultural wellbeing.

<sup>9</sup> A decision-maker can only consider evidence that is submitted to them, or that they obtain on request. The evidence needs to be relevant to the issues to be decided.

This recognition is not new. The EPA, and its predecessor, the Environmental Risk Management Authority, have had evolving discussions about the relationship of Māori to the environment over many years. Groups involved have included Ngā Kaihautū, Ngā Parirau, and Te Herenga.

The EPA has taken further steps to help decision-makers and staff to incorporate Māori perspectives into their work. These include developing *He Whetū Mārama* – a framework to provide staff with guidance on how to meet the EPA's statutory and other obligations towards Māori. Developed in collaboration with Ngā Kaihautū and Ngā Parirau, *He Whetū Mārama* provides the foundation statement for the EPA's strategy, expressed through the wawata:

### **Ka whai mōhio ā Te Mana Rauhi Taiao whakatau i te hononga ake, i te hononga motuhake a Ngāi Māori ki te Taiao.**

**The unique relationship of Māori  
to the environment informs EPA  
decision-making.**

The EPA's strategy includes the intention to increase the trust of the nation, Māori, and business through decision-making based on science, evidence, mātauranga, and risk assessment.

In collaboration with Ngā Kaihautū, the EPA has also developed the *Incorporating Māori Perspectives into Decision-making* protocol, to help decision-makers incorporate Māori perspectives appropriately into their work.

## **The EPA's mātauranga programme**

The EPA's Chief Executive, Dr Allan Freeth, commissioned Kaupapa Kura Taiao to develop a work programme to foster and embed understanding of mātauranga across the EPA. The EPA sought Ngā Kaihautū's perspective on how to approach such a programme.

When developing the original business case, Kaupapa Kura Taiao drew on the experience and feedback from Ngā Kaihautū, Ngā Parirau and Te Herenga, and identified a number of

challenges for the EPA regarding mātauranga. Themes to emerge included:

- testing or probing of mātauranga is currently being done using a science framework, rather than a mātauranga framework
- while EPA staff understand science, to ensure the appropriate weight is given to all evidence, they also need to understand the systematic methodology that underpins mātauranga as a knowledge system with its own veracity and rigour
- understanding of what mātauranga is, and its relevance to the EPA's work, is uneven across the organisation
- there is no clear pathway or framework enabling decision-makers to assess mātauranga evidence effectively
- there is potential to misuse mātauranga, which could compromise its integrity
- information regarding mātauranga is not always easily accessible
- there is risk of mātauranga being 'buried' within institutions, or withheld by kaitiaki who may not trust a third party (in particular, there may be preconceived issues with government).

Ngā Kaihautū and Ngā Parirau stress that evidence based on mātauranga should be capable of being given equal weight to evidence based on science and other disciplines. Further, the veracity and rigour of mātauranga-based evidence should be evaluated by applying a mātauranga-based framework.

Former decision-makers emphasised the following:

- non-Māori decision-makers may lack confidence to test and probe mātauranga evidence
- decision-makers tend to defer to the Māori decision-maker regarding Māori perspectives, including on mātauranga evidence
- decision-makers need mātauranga evidence to be relevant, specific and detailed, particularly with regard to the impacts of an application
- cultural capability-building tools are needed to help decision-makers effectively incorporate Māori perspectives, including mātauranga, into their decision-making.

The above initiatives and insights provide a sound platform on which to build the EPA's mātauranga programme.

The primary goals of the mātauranga programme are to:

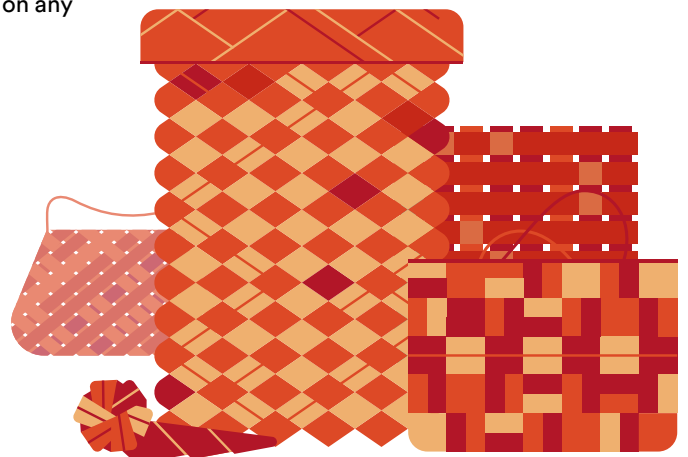
- **enable well-informed decision-making**
- **ensure the EPA understands the issues and implications of mātauranga for its decision-making processes**
- **increase the understanding of mātauranga across the EPA**

A key task was to develop a mātauranga framework (the framework), so that decision-makers can understand, test and probe mātauranga evidence.

Underlying principles include:

- framework design being underpinned by tikanga Māori, and informed by Te Tiriti principles
- decision-makers should consider mātauranga – including Māori cultural concepts, values and practices – from a Māori point of view, rather than a scientific or non-Māori perspective
- decision-makers will be aware of how to respectfully test and probe mātauranga evidence
- decision-makers can effectively incorporate mātauranga into their decisions
- decision-makers will understand that mātauranga is a taonga to Māori, whānau, hapū, and iwi, and will ensure that the integrity of mātauranga is protected.

The EPA also aims to improve its processes to encourage transmission of mātauranga evidence. It will scope how to undertake capability-building for EPA decision-makers and staff. Ngā Kaihautū and Ngā Parirau have identified this as critical to the mātauranga programme's success. The EPA will also work with Māori about what they may expect in a hearing situation, and what may be helpful in the preparation of a submission on any application before the EPA.



# Developing the mātauranga framework

# 02

## Waka hourua: a partnership approach

A waka hourua, or double-hulled canoe, symbolises the EPA's approach to mātauranga. The two hulls represent two knowledge systems – mātauranga and science – moving together in the same direction. The interwoven sails represent the information, evidence, advice, and risk assessment that inform EPA decisions.

This visual metaphor acknowledges the contribution each knowledge system makes towards environmental management. It also symbolises that the EPA is equipping itself to embark on a voyage of discovery.

Successful navigation depends on having clarity about one's destination before setting out. The EPA is guided by Ngā Kaihautū and Te Herenga, which together provide leadership, encouraging us all to explore the place for mātauranga within EPA decision-making processes.

By adopting the waka hourua approach, the EPA shows it places real importance on having the trust and confidence of Māori. This will encourage realisation of aspirations for the EPA, and for Māori, that have been discussed over many years.

The EPA considers that successful development of a programme that weaves mātauranga and science into decision-making requires an alignment of aspiration, willingness, and expertise between all parties involved. For the EPA, the waka hourua approach enables the aspirations of Ngā Kaihautū, Ngā Parirau and Te Herenga to be set for mātauranga in alignment with the willingness and courage of EPA's leaders to invest in and adopt a three-year mātauranga programme.

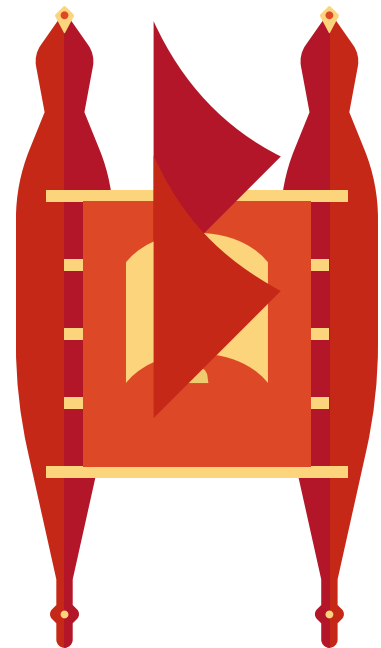
EPA staff are eager to learn more about Māori world views and perspectives, and to incorporate this knowledge into their day-to-day work. The EPA's willingness to increase Māori capability, combined with the willingness of staff to learn, will lead to a considerable culture shift. This shift will occur alongside other ambitious organisational goals, including the EPA's aspiration to be a more transparent, proactive regulator, and the launch of a work programme to modernise how chemicals are regulated.

The role of Kaupapa Kura Taiao in maintaining open communication, incorporating feedback on the mātauranga programme, and increasing Māori capability within the organisation, will also help the EPA to realise its goals.

The waka hourua approach is broader than weaving together two knowledge systems in and of themselves. For this to be successful, framework design needs also to reflect a partnership approach. This will ensure all parties are successfully brought on this journey.

Matakīrea provides expertise, advice and guidance to the EPA, to ensure the integrity of the mātauranga programme from tikanga and mātauranga perspectives. An internal working group, whose members are drawn from across the EPA, will continue to provide expertise, advice, and peer review as the mātauranga programme progresses.

In developing the mātauranga programme, Kaupapa Kura Taiao focused on maintaining open lines of communication in multiple directions – with Ngā Kaihautū, Matakīrea, Ngā Parirau, and Te Herenga; and also with the EPA's Board, leadership and staff. Kaupapa Kura Taiao is working to ensure that the mātauranga programme has integrity from a tikanga perspective, and contains the necessary elements to deliver on Māori aspirations for mātauranga.



## Mātauranga framework work streams

Eight work streams contributed to development of the framework.

### Completed work streams

- Gathering information from multiple sources to develop an evidence base about what constitutes effective probing and testing of mātauranga evidence.
- Analysing the needs of EPA decision-makers.
- Testing the draft framework.
- Reporting on the framework’s development.

### Ongoing work streams

- Guidance and advice from Ngā Parirau and Matakīrea, to ensure the integrity of the mātauranga framework from a tikanga Māori perspective.
- Working with Ngā Kaihautū, who provide guidance and support for the mātauranga programme to the EPA Board.
- Working with EPA staff, who will be mātauranga programme champions, through their engagement with applicants.
- Engaging with iwi and industry.

## Building the evidence base

A wide range of sources were used, including:

- notes and minutes of past hui with Ngā Parirau o te Mātauranga, conducted over a number of years
- key EPA documents related to decision-making and mātauranga evidence, including *Incorporating Māori Perspectives into Decision-Making* (Environmental Protection Authority 2016)
- a preliminary report on other jurisdictions that hear mātauranga evidence
- *Making Good Decisions: a Guide for RMA decision-makers* (Ministry for the Environment 2018)
- more than 60 articles written by academics, judges and mātauranga practitioners about mātauranga and mātauranga evidence
- tikanga Māori and mātauranga frameworks developed in the Resource Management Act 1991 space
- engagement with Waitangi Tribunal and Māori Land Court staff
- a literature review of case law: 68 judgments and relevant commentary regarding effective testing and probing of mātauranga evidence.

The EPA met with current and former Waitangi Tribunal and Māori Land Court staff early in the project to identify opportunities and challenges regarding effective testing and probing of mātauranga evidence.

Issues identified from the source material were discussed, including:

- What helps decision-makers to understand, test and probe “metaphysical” or “intangible” concepts?
- “Expert witnesses” – how might kaumātua or tāngata whenua be accorded similar status?
- Is there a role for kaumātua or tāngata whenua as cultural advisors?
- What helps decision-makers test and probe oral history, which is often central to mātauranga?
- Where there is conflicting mātauranga evidence, how might this be resolved?
- Are there other processes that might help decision-makers to test and probe mātauranga (eg, pre-hearing meetings; preparation of reports)?
- Are there processes that might help the transmission of mātauranga?

The literature review of case law focused on judgments and relevant commentary from the Environment Court (and its predecessor, the Planning Tribunal), the Waitangi Tribunal, Māori Land Court, Court of Appeal, and the Supreme Court. This was reviewed by an external law firm in early October 2018.



## Effectively testing and probing mātauranga evidence

To identify how a decision-maker might effectively test and probe mātauranga evidence, Kaupapa Kura Taiao synthesised key themes from the evidence base they developed with advice and support from EPA staff. This incorporated feedback gathered over a number of years from Ngā Parirau. Kaupapa Kura Taiao created a set of criteria to measure effectiveness, where a decision-maker will seek to establish:

- the mana and/or expertise of the person giving mātauranga evidence
- the connection of the person giving mātauranga evidence (and, if relevant, the whānau, hapū, or iwi they represent) to the location, resource, and/or other relevant concept
- the mātauranga used to identify the application's impact/s, and the mitigations (if relevant)
- any differences in the use or practice of the mātauranga being given as evidence – including historical/contemporary differences, or localised practice
- whether there is external evidence (eg Māori Land Court minutes) or corroborating information (waiata, whakataukī) regarding the mātauranga evidence
- the level of support for the mātauranga evidence.

These criteria require decision-makers to apply Māori meanings, cultural concepts, values and practices, rather than scientific or non-Māori world views.

The evidence base shows that, to test and probe mātauranga evidence effectively, EPA decision-makers could use a sequence of questions, as shown in the following framework, alongside a guide that has been developed to help decision-makers use the framework.

### He aha: Mātauranga can include...

Māori have a holistic, intergenerational view of the environment based on whakapapa and whanaungatanga, connecting people and all things in the world, living and non-living, animate and inanimate.

From a te ao Māori point of view, potential impacts of any application would be conceptualised holistically. Economic impacts, for example, would not be considered in isolation from impacts on health and wellbeing, the environment, or the ability for Māori to practise cultural concepts and values. In her book *Mountains to Sea: Solving New Zealand's Freshwater Crisis*, Tina Ngata observes that:

[W]hen others come to talk to us about the well-being of our waterways, we will often wind up talking about the well-being of our people, and our culture. For us, they are all one and the same thing, enshrined through whakapapa, enhanced through familiarity (Ngata 2018).”

To assist decision-makers to conceptualise the range of potential impacts on Māori interests, Kaupapa Kura Taiao developed a diagram with examples of mātauranga in four dimensions:

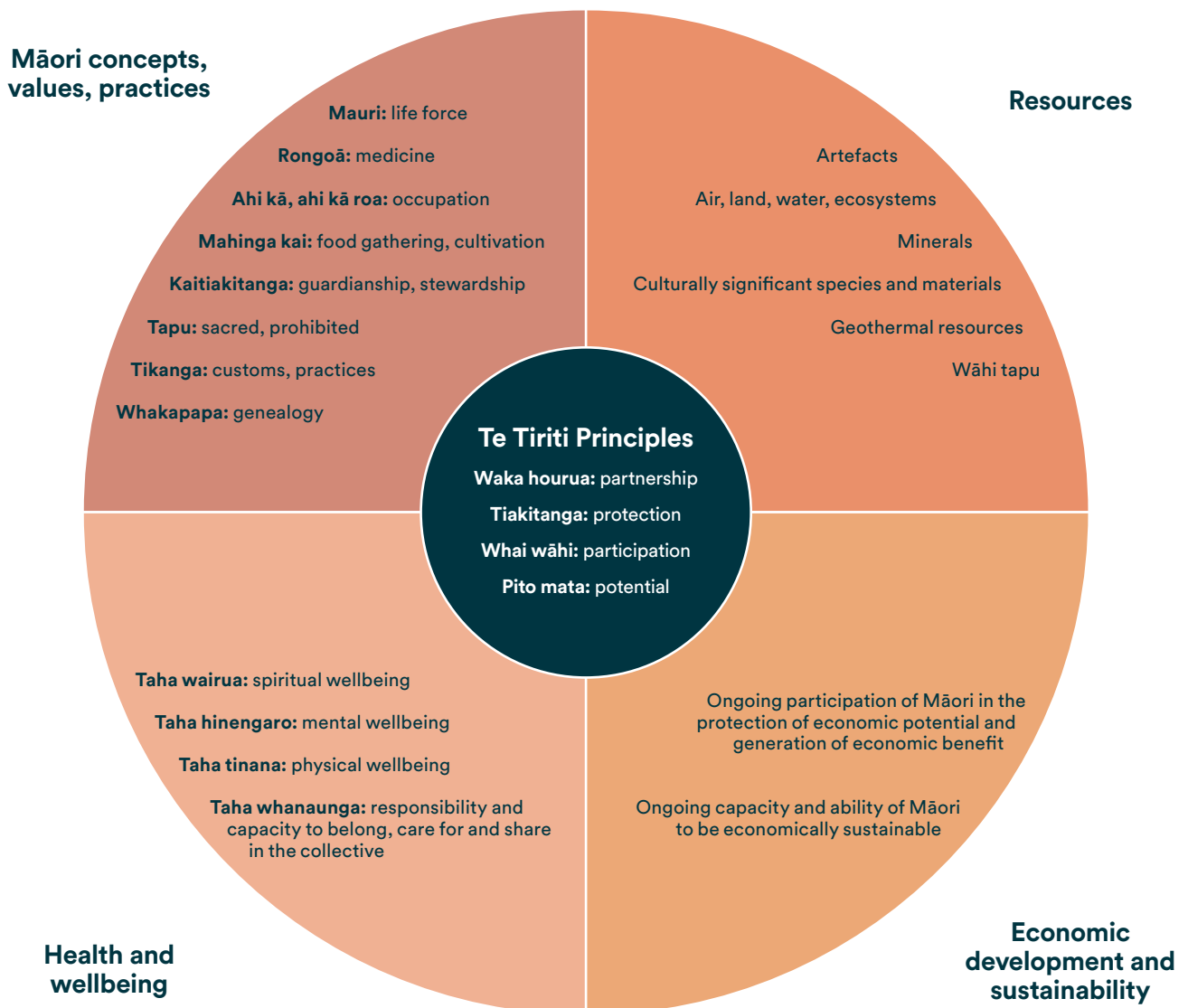
- Māori cultural concepts, values, and practices.
- Resources; health and wellbeing.
- Economic development and sustainability.

The EPA's relationship with Māori is guided by Te Tiriti Treaty principles, which are situated at the centre.

# Mātauranga framework

Mātauranga can be described as the pursuit of knowledge and comprehension of Te Taiao – the natural environment – following a systematic methodology based on evidence, and incorporating culture, values, and world view (Hikuroa, 2017).

## He aha... Mātauranga can include...



## Process for decision-makers to understand, test and probe mātauranga.

### He aha ngā hononga? What is your connection?

**Ko wai tēnei?**  
Who is speaking?

Please give us some background about yourself

**Mō wai, Nā wai?**  
Are you representing a group?

Are you representing whānau, hapū or iwi?

**Āe**  
Yes

- Which collectives are you representing?
- Has your whānau/hapū/iwi met and discussed this application?
- If yes, how was that hui called or notified? Was it well-attended? Were key people there?
- If no, how does your view reflect the view of your whānau/hapū/iwi?

**Kao**  
No

- Where did the mātauranga you're presenting come from?
- Who recognises you as having this knowledge?
- Is your view supported by others and, if so, by whom?

### He aha ngā pānga? What are the impacts?

Can you explain what impact this application will have on:

- the cultural concepts, values and practices of members of your whānau/hapū/iwi (historical and contemporary)?
- the health and wellbeing of members of your whānau/hapū/iwi?
- the relationship between your whānau/hapū/iwi and resources?
- the economic development and sustainability of your whānau/hapū/iwi?

How significant are the impacts you've told us about?

Can you give other examples of these effects (eg, other places or situations where this has happened)?

Are there any benefits to your whānau/hapū/iwi from this application?

### He aha te mātauranga? What is the mātauranga?

What mātauranga are you using to identify the impact?

How is this mātauranga recognised by your whānau/hapū/iwi, and by other whānau/hapū/iwi?

Are there any differences about how [X] is used, recorded or practised?

What are those differences?

Do you have a policy, plan or other instrument that has been lodged with central or local government regulatory agencies, or with industry? How does this apply to this application?

Have you given evidence about this mātauranga in any other forums (eg, Waitangi Tribunal, Māori Land Court)?

How does it apply to this application?

### He aha ngā whakangā- waritanga? What are the mitigations?

Is mitigation possible?

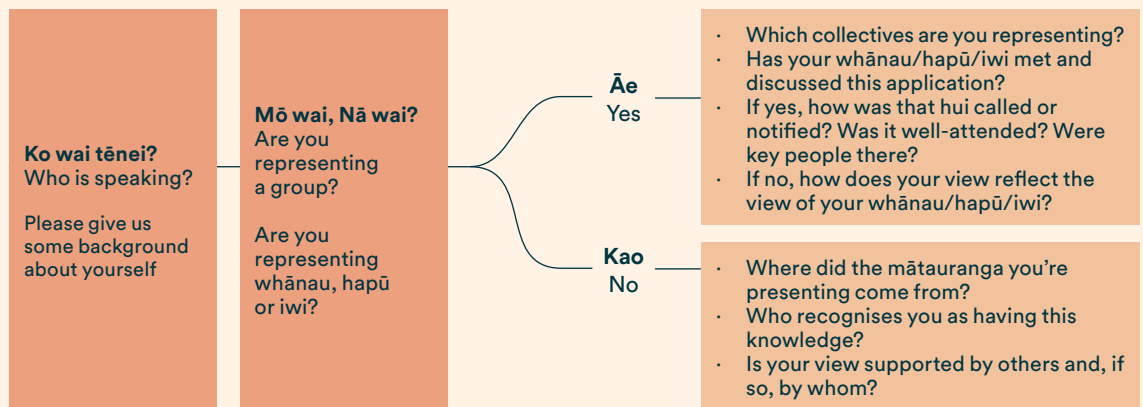
**Āe**  
Yes

- What would you do to mitigate the impacts?
- How effective will these mitigations be?
- Can you provide examples of similar mitigations elsewhere?

**Kao**  
No

Can you tell us why you don't believe any mitigation is possible?

# He aha ngā honoga? What is your connection?



This section of the framework helps decision-makers to clarify the mandate and expertise of a Māori submitter. In te ao Māori, that mandate or authority to speak is expressed through the depth of connection a person or group has with the matters under consideration.

Connection is commonly conveyed through whakapapa. Whakapapa speaks to who a person is, where they come from, as well as relationships between people, the environment, and all living things. Whakapapa may be recounted through waiata, pepeha, or whakataukī.

Connection can also be expressed through knowledge and experience, where a Māori submitter is a recognised knowledge-holder or practitioner of mātauranga. Māori communities know who their own experts are. Similarly, if a Māori submitter is representing the views of a group, their mandate will have been given to them by that group.

Once decision-makers have established the mandate and expertise of a Māori submitter, they apply the rest of the framework, to test and probe the veracity of the mātauranga evidence being presented.

# He aha ngā pānga? What are the impacts?

Can you explain what impact this application will have on:

- the cultural concepts, values and practices of members of your whānau/hapū/iwi (historical and contemporary)?
- the health and wellbeing of members of your whānau/hapū/iwi?
- the relationship between your whānau/hapū/iwi and resources?
- the economic development and sustainability of your whānau/hapū/iwi?

How significant are the impacts you've told us about?

Can you give other examples of these effects (eg, other places or situations where this has happened)?

Are there any benefits to your whānau/hapū/iwi from this application?

This section of the framework helps decision-makers to understand how, and to what extent, an application affects Māori interests. Decision-makers need Māori submitters to be specific about the nature and significance of potential impacts on these interests, and how they are relevant within the EPA's statutory context.

Participants in mock hearings, and former EPA decision-makers, commented:

- "A lot of submissions say this will impinge on the mauri of the ecosystem. We need to take it further regarding how much it will impact – it's the next level of detail that we need to hear."
- "It was hard to understand the consequences of mātauranga given, and to understand what this means."
- "I don't have a sense of gradation or ladder of effects... What is truly tapu? What are the trade-offs?"

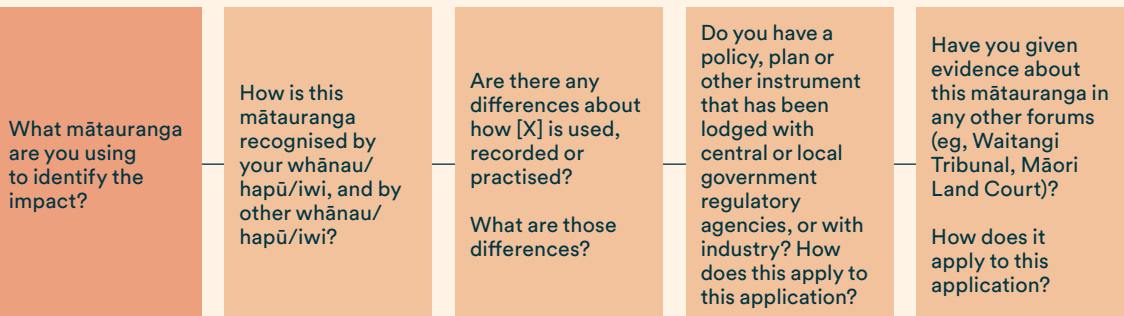
In te ao Māori, all living things are interconnected. Any application may affect Māori interests in a number of ways, as depicted by "Te Tiriti Principles" figure on page 18.

For example, an applicant may propose to undertake an activity in a particular area of the Exclusive Economic Zone. A Māori submitter may come from an iwi for whom access to water and customary fishing practices are longstanding cultural practices.

They may present mātauranga evidence that the proposal would affect their ability to exercise kaitiakitanga.<sup>10</sup> Discharges from the activity into the marine environment would degrade the mauri of the moana, and deplete traditional sources of kaimoana. This could compromise their ability to show manaakitanga to manuhiri, thereby diminishing their mana and rangatiratanga.

<sup>10</sup> Includes the concept of intergenerational regenerative guardianship, customs and traditions that provide for sustainable environmental management, including for future generations.

# He aha te mātauranga? What is the mātauranga?



This section of the framework helps decision-makers to delve more deeply into the mātauranga evidence presented. Decision-makers need Māori submitters to be specific about how mātauranga has been used to identify the impacts of an application on Māori interests, and how these are relevant within the EPA's statutory context.

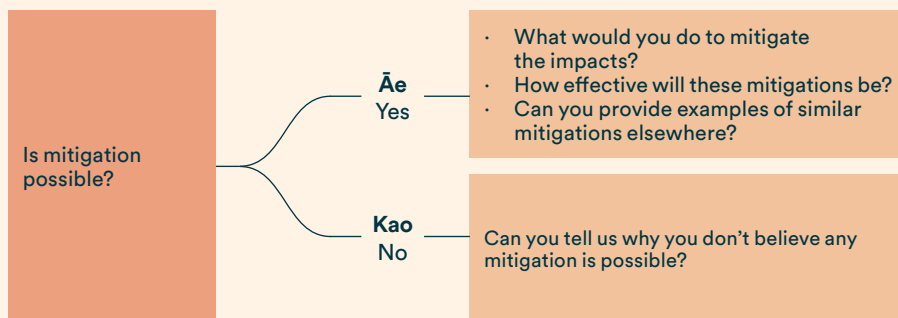
Using a marine consent scenario, a Māori submitter might present mātauranga evidence showing how they assess the state of ora of the moana and kaimoana, and how the submitter's ability to undertake cultural practices such as the harvesting of kaimoana, would be impaired. They might also provide evidence about other potential negative impacts, such as degradation to the mauri of the moana, or depletion of kaimoana.

Decision-makers need to understand the local impacts of an application. While key principles of mātauranga are generally consistent between hapū and iwi, there are important regional and tribal differences.

For example, an applicant may propose an agrichemical for use on crops. Two Māori submitters may present mātauranga evidence about differing impacts on their fishing practices. A Māori submitter from a rohe with waterways that are mostly slow-moving, low flow creeks may present evidence about significant impacts on their hinaki or rama tuna practices. By comparison, a Māori submitter from a rohe with a fast-moving, high volume rivers may report minimal impacts on pā tuna practices.

Decision-makers may explore the level of support for mātauranga evidence presented by a Māori submitter. They may also ask whether the mātauranga evidence has been given in another forum, say at a Waitangi Tribunal or Māori Land Court hearing, or whether it is represented in documented plans such as an Iwi or Hapū Management Plan.

# He aha ngā whakangāwaritanga What are the mitigations?



Once decision-makers have canvassed potential impacts of an application on Māori interests, they will explore whether any mitigation is possible, using a te ao Māori approach.

# Qualitative Analysis: Findings

03

## Interviews with past decision-makers

Kaupapa Kura Taiao interviewed a range of past decision-makers to canvass their experience and understanding of Māori perspectives – including mātauranga – and their confidence to test and probe mātauranga evidence. Their feedback informed development of the mātauranga framework. Some of the key findings are noted below. The EPA would like to acknowledge that interviewees made their comments in confidence.

### Non-Māori decision-makers lack confidence to test and probe mātauranga evidence, and tend to defer to the Māori decision-maker

Non-Māori interviewees reported lacking confidence to test and probe mātauranga presented as evidence. This applied to interviewees with a range of experience with Māori perspectives and decision-making training prior to working for the EPA:

“I don’t see many of us intentionally, purposely integrating mātauranga into our decision-making. It’s not because we don’t want to... With science information...I feel confident that I can question and challenge that because I’m a scientist. With...mātauranga I don’t feel as comfortable asking questions, because I don’t feel I have the right to do that. Or the knowledge level necessary.”

Some interviewees said their understanding of Māori perspectives, including mātauranga, has grown through ongoing exposure to a variety of sources, including presentations by Ngā Kaihautū, Kaupapa Kura Taiao, and visiting speakers:

“Just reading papers doesn’t help...[we] get better perspective when involved in discussions.”

But they remain concerned that it may be inappropriate for them to test and probe mātauranga evidence presented in a hearing:

“It presents a real difficulty that, in trying to challenge something, we might be seen as culturally insensitive.”

Some interviewees observed that decision-makers tend to “defer to”, or feel “heavily dependent on”, their Māori colleagues when it came to questioning mātauranga evidence, or considering Māori perspectives:

“Often on a decision-making committee, the Māori perspective is held with an individual,

which could lend itself to them being seen as the repository.”

### Decision-makers need mātauranga evidence to be relevant, specific and detailed, particularly with regard to the impacts of an application

Interviewees noted that, as EPA decision-makers, they must be careful they are “not going beyond the legal framework set in the Act.” The EPA’s statutory frameworks mean they can only consider evidence, including mātauranga evidence, that is relevant within the statutory context, and that is of “probative value” (meaning it must tend to prove or disprove facts or conclusions).

Most interviewees observed that mātauranga evidence tends to be given at a high level, or from a general Māori perspective, and that submissions “...haven’t really addressed ‘how does this affect us in our rohe, our things’.” Interviewees reported that they need “the next level of detail”, including the magnitude or significance of any impacts, and how this affects Māori submitters and their wider hapū or iwi in their rohe.

An observation was made that the EPA might wish to:

“upskill our submitters in what the decision-making committee has to do, on how they can help the decision-making committee, and how they can get their points across most effectively.”

### Cultural capability-building is needed to help decision-makers effectively incorporate Māori perspectives, including mātauranga, into their decision-making

All interviewees saw a need to build decision-makers’ cultural capability. They needed “competence and confidence” regarding Māori perspectives, including mātauranga, interviewees said. The need to be culturally sensitive when asking questions was also noted:

“capability around understanding how to ask a question is just as important as what the question is.”

Some interviewees could not recall receiving any induction regarding Māori perspectives or mātauranga.<sup>11</sup> In addition, past Hazardous Substances and New Organisms Committee decision-makers noted that mātauranga is rarely offered in evidence, and therefore they have had HSNO opportunity to interact with mātauranga in a hearing process.<sup>12</sup>

Interviewees' most common suggestion regarding cultural capability-building was to develop training along the lines of the *Making Good Decisions* course, in particular its mātauranga component. This should be made relevant to the EPA's statutory frameworks. As one interviewee put it:

"The Resource Management Act context is different from the Exclusive Economic Zone."

Other cultural capability-building suggestions included access to a "cultural advisor" independent of the applicant, and noho marae, which would help a decision-making committee "internalise" te ao Māori.

## Mock hearings

Kaupapa Kura Taiao held three mock hearings to check the effectiveness of the framework as a tool for decision-makers to understand, test and probe mātauranga presented as evidence. Kaupapa Kura Taiao invited senior EPA managers and members of Ngā Kaihautū, to play the role of EPA decision-makers, using mock scenarios relevant to applications about Hazardous Substances and New Organisms and Exclusive Economic Zone scenarios. Participants had two hours to use the framework, as they tested and probed oral submissions given by mock submitters. Some of the key findings are noted below:<sup>13</sup>

### The framework and guide enabled participants to respectfully test and probe mātauranga evidence

All participants reported that the framework enabled them to respectfully test and probe mātauranga evidence, with a logical but non-prescriptive flow, helping them to draw out issues to explore:

The framework was well done...had a sense of building on the quality of the submissions. It helps to identify potential gaps in what the submitter said, so you can ask more on that."

The guide was seen as a useful resource, which gave participants "an appreciation of the spectrum of what needs to be considered". In the mock hearing scenarios, they found that the framework "tied nicely together" with the guide:

"I could systematically work through the guide and then on the day use the framework as my reminder, but then deep

11 The EPA has produced induction material regarding Māori perspectives, including mātauranga, but, we need to ensure consistency of how this information is shared with decision-makers. This is one of the matters to be addressed in the next steps of the EPA's Mātauranga Programme.

dive back into the guide....having more detail in the guide was good."

Some participants reported that these tools gave them "permission" to ask questions they would not otherwise have been comfortable raising:

"All decision-makers need that kind of enlightenment that helped you ask questions in a culturally sensitive way."

While some participants were uncomfortable testing the mandate and integrity of mock submitters, most found it helpful to establish their "credentials" before moving on to testing and probing the evidence being presented:

"If the validity of the person isn't established, the rest of the evidence won't be regarded."

Many participants reported that the framework and guide helped them to draw out what the impacts were from a Māori perspective, including issues of cultural offence:

"This is where the framework helps, this level of offence, this level of sacredness, you begin to get [that you're] straying into territory [that's] very sensitive."

### Participants who reported uncertainty about Māori perspectives found it challenging to understand the significance of impacts from a mātauranga viewpoint

While participants found the framework a useful tool to help them test and probe mātauranga evidence, many remained aware of their own limitations:

"The guide and the framework helped me to probe and test the evidence, however it did not allow me to think within a different knowledge system."

Participants who were uncertain about te ao Māori used the framework to clarify the impacts raised by mock submitters, but found it challenging to understand their significance, with some looking for "a sense of gradation or ladder of effects". This affected their ability to consider appropriate mitigations:

"What's the degree of offence I'm going to cause if I accept that [there will be these impacts] but provide this mitigation?"

12 Past decision-makers interviewed had participated in two or more Hazardous Substances and New Organisms and Exclusive Economic Zone decision-making committees or Boards of Inquiry.

13 Other than in relation to the framework and guide enabling participants to respectfully test and probe mātauranga evidence, the comments in this section were not provided by Ngā Kaihautū.

Some participants tended to view mātauranga as “ancient knowledge”, or made analogies between mātauranga and religious beliefs, and weren’t sure of the relationship between mātauranga that has been practised for generations, and its contemporary application.

“Mātauranga that talks about ancient knowledge – need the modern day, ways in which this is put into practice.”

Some participants observed that where mātauranga evidence was relatable to their own world view, it was easier to translate it into “today’s situation”. For example, participants could relate a pūrākau about a taniwha to a description of a hazard or warning not to enter a certain body of water.

### **Participants need mātauranga evidence to be relevant, direct and specific, to help with their decision-making processes**

Those who participated in both the first and second mock hearings observed that mātauranga evidence that was relevant within the statutory context, direct, and specific to the application, helped “triangulate” the discussion:

“Better submissions help for better decision-making.”

In comparison, where mātauranga evidence was generalised in nature, participants reported higher levels of uncertainty – they needed more specific information about the impacts of an application, particularly when the subject matter was challenging.

These observations generated suggestions about the nature of support or assistance the EPA could offer submitters:

“They’ll need guidance...that within this context...you’re going to have to provide, or someone else provide, the language and evidence that is easier for decision-makers to manage [within the statutory framework].”

### **Participants requested cultural capability-building initiatives to help all decision-makers to incorporate Māori perspectives, including mātauranga, into decision-making processes**

Participants said that each decision-maker needed to be capable of incorporating mātauranga into their decision-making processes, rather than looking to a member who may have this expertise.

“If there’s someone who’s mātauranga savvy the decision-making committee may turn to ask them, but they shouldn’t be relying on that person – they have to form their own view.”

Participants who reported uncertainty regarding Māori perspectives, including mātauranga, suggested making mātauranga more “relatable”, by finding “bridges” to translate between their world views and mātauranga.

“Are there any opportunities...in bridging that gap, say if a submitter came in and their submission was talking about the creation story from that lens, and not directly hooking it back into the science, where would that bridge come?”

These participants reported that their exposure to kōrero about Māori perspectives and mātauranga at the EPA had improved their level of understanding. Providing decision-makers with more of these types of experiences would be beneficial, they said.

“Experience is more valuable than books. You need to read things...but being with the people brings it to life. It’s all about hearing it from the source. Te Herenga has great people who can stand up and contextualise these things...Kaupapa Kura Taiao’s presentations are good.”

Many participants also thought that, in relation to local matters, a cultural advisor, tikanga expert, or group of kaumātua, could help decision-makers by explaining mātauranga concepts, and complex or sensitive issues, to improve their understanding.

[Decision-makers need] an expert to sit alongside a decision-making committee.”

“If we want [decision-makers] to incorporate a different world view, we need capability building and ongoing exposure to mātauranga.”

“In the same way that decision-making committees can call upon expert conferencing, they must be encouraged to do the same...a set of kaumātua to talk this through.”

Participants’ general view was that cultural capability building for decision-makers needs to be in-depth and sustained over time, so the EPA would “need to get people up to speed, then maintain knowledge.”

Extensive induction will be required for decision-makers, rather than the half hour given in the mock hearings, participants said:

“An induction at that level needs a lot more time.” But it would give decision-makers: “confidence and make it less intimidating. Particularly if it’s kaumātua giving evidence.”

# Implementing the framework

04

## Building decision-makers' cultural capability

To meet the expressed needs of its decision-makers, the EPA will explore development of a series of cultural capability building initiatives. The aim is to enhance decision-makers' capability to consider different world views, and confidence to incorporate both mātauranga and science into their decision-making, as relevant to the facts and circumstances of any particular decision.

A starting point may be to offer a more in-depth induction for all decision-makers prior to hearings. This might cover key Māori cultural concepts, values, and practices; and mātauranga as a knowledge system. Other elements might include the unique characteristics of mātauranga evidence, and how decision-makers can use the mātauranga framework effectively in a hearing.

Cultural capability training for decision-makers could assist them to be confident and competent in considering Māori perspectives – including mātauranga – from a Māori point of view. This could be delivered through a combination of workshops, in-depth training, and possibly noho marae.

The EPA may also:

- develop resources to help demystify mātauranga, making key concepts, values, and practices relatable across world views
- provide decision-makers with access to specialist tikanga Māori expertise to help them understand mātauranga evidence presented during a hearing, for example, local context. Kaumātua, Māori technical experts and academics could provide such advice
- make greater use of debriefings after hearings have concluded, to enhance decision-makers' understanding of Māori perspectives, mātauranga, and tikanga Māori.

The EPA will continue to build the cultural capability of staff to incorporate Māori perspectives into their work.

## Engaging with Māori and industry

Well-informed decision-making includes effectively incorporating Māori perspectives. The EPA wants to ensure that Māori, whānau, hapū and iwi perspectives are heard.

Kaupapa Kura Taiao will invite kaumātua and kaitiaki from Te Herenga to a series of regional wānanga to share how their views have been incorporated in the framework's development.

Kaupapa Kura Taiao will also explain what Māori submitters may expect in a hearing situation when decision-makers test and probe mātauranga that is presented in evidence. Kaupapa Kura Taiao may also consider what mechanisms may help Māori, as submitters, be effective in submitting on any application before the EPA.

A key message is that EPA decision-makers need all evidence – including mātauranga evidence – to be relevant, specific and detailed.

The EPA encourages anyone planning to submit an application or proposal to the EPA to engage with Māori groups whose interests may be affected by the application. Over the past year, the EPA has shared its aspirations for the mātauranga framework with a number of industry groups at conferences, workshops, and meetings during the pre-lodgement phase of applications.

The EPA will build on communicating its aspirations with industry and applicants, including the value of meaningful engagement with Māori.

# Refining EPA processes

## Sensitive information

Ngā Kaihautū, Ngā Parirau, members of Te Herenga, and Māori more widely, have expressed concerns about not wanting sensitive information (such as whakapapa or the location of mahinga kai) to be divulged, and the potential for mātauranga to be used inappropriately for commercial benefit. Examples include when users take the stories, images, whakapapa or information that is part of mātauranga, and use them without the knowledge of the kaitiaki of mātauranga.

The EPA operates transparently in all of its decision-making. Its default position is that fairness requires that all information and evidence used in its decisions is made publicly available to all participants.<sup>14</sup>

However, the EPA acknowledges that kaitiaki face a difficult choice when deciding how much, if any, mātauranga should be provided as evidence in support of submissions. On one hand, they are aware that decision-makers need accurate information to make decisions, on the other hand, once sensitive information is released, it is available to all to use as they please. The EPA is considering this issue.

## Improving the incorporation of tikanga Māori into EPA hearing processes

The EPA receives a modest number of Māori submissions on applications, particularly on Hazardous Substances and New Organisms applications. Ngā Kaihautū, Ngā Parirau and Matakīrea consider that improving the incorporation of tikanga Māori into EPA hearing processes will facilitate the sharing and transmission of mātauranga in these processes. The EPA is mindful of the significant resource and capacity constraints Māori face on a range of environmental priorities and other pressing issues.

It is important to the EPA that Māori see their perspectives are valued when they engage with EPA processes. Currently, the EPA incorporates tikanga Māori into its processes through the use of mihi whakatau and poroporoaki to open and close hearings, and by providing translation services for submitters who wish to be heard in te reo Māori. It is considering a range of options about how to build on this work, which may include, but are not limited to, processes adopted by the Waitangi Tribunal and Māori Land Court.

The EPA already considers holding hearings at marae (or at a neutral venue if more than one iwi has mana whenua). It may seek submissions on potential venues, and look at improving the ways in which it incorporates pōwhiri or less formal mihi whakatau into hearing processes.

Where there is a conflict of evidence between or among Māori submitters, the EPA may use pre-hearing meetings or mediation to identify areas of common interest, and as a way to address differences.

## Next steps

The mātauranga programme is breaking new ground for the EPA. The mātauranga framework will be refined as the work streams progress, and new lessons emerge. This iterative approach was agreed by Ngā Kaihautū, the Executive Leadership Team and the EPA Board.

The mātauranga programme's methodology will remain underpinned by the ongoing guidance of Ngā Kaihautū, Ngā Parirau, and Matakīrea. This will continue to ensure integrity from a tikanga Māori perspective.

Kaupapa Kura Taiao will closely monitor the framework's implementation.

<sup>14</sup> In some instances, there may be statutory provisions that vary this requirement.

# Glossary

**Ahi kā, Ahi kā roa:** (burning fires of) occupation of land.

**Atua:** supernatural guardians.

**Haka:** posture dance.

**Hapū:** collection of whānau with common ancestry and common ties to land.

**Hui:** meetings, gatherings

**He Whetū Mārama:** the EPA's framework for undertaking its statutory obligations to Māori.

**Hinaki:** eel pots.

**Iwi:** Māori social grouping made up of hapū and whānau.

**Kai:** food

**Kaimoana:** seafood, shellfish.

**Kaitiaki:** guardians.

**Kaitiakitanga:** includes the concept of intergenerational regenerative guardianship, customs and traditions that provide for sustainable environmental management, including for future generations.

**Kaumātua:** elders, a people of status.

**Kawa:** ceremonial protocols, rituals or actions.

**Kōrero tuku iho:** ancestral stories, history, oral tradition, passed down from generation to generation.

**Mahinga kai:** food gathering and cultivation practices, traditional Māori foods.

**Mana:** authority, dignity, integrity, prestige, power.

**Manaakitanga:** hospitality, generosity.

**Mana whenua:** not a traditional Māori concept, this term is used in various pieces of legislation which can mean customary authority exercised by iwi or hapū over an area of land or body of water.

**Manuhiri:** guests.

**Maramataka:** the Māori lunar calendar.

**Matakīrea:** the mātauranga programme's external working group that informs development and delivery of the EPA's mātauranga framework and work programme. It also ensures the integrity of this work from a tikanga and mātauranga perspective. Matakīrea means the end feathers of a bird's wings, which are used as navigational aids.

**Mātauranga:** a body of knowledge, experience, values and philosophy of Māori; the pursuit of knowledge and understanding of the natural world, following a systematic methodology based on evidence, and incorporating culture, values and world view.

**Mauri:** the spiritual integrity or life force of all things, animate or inanimate.

**Mihi whakatau:** welcoming ceremony; less formal than a pōwhiri.

**Moana:** sea.

**Ngā Kaihautū Tikanga Taiao:** the EPA's statutory Māori Advisory Committee. Ngā Kaihautū provides advice and assistance from a Māori perspective on policy, process and decision-making.

The EPA acknowledges that there are multiple meanings and nuances for each term in this glossary. These definitions are specific to this document.

**Ngā Parirau o te Mātauranga:** the EPA's kaumātua group, formally established in 2010 under the previous Māori National Network of the Environmental Risk Management Authority, drawn from Te Herenga members. Te Herenga is the EPA's network of Māori environmental practitioners from across New Zealand. Ngā Parirau o te Mātauranga, which means the wings of knowledge, are the messengers of cultural wisdom and knowledge.

**Ngāti Naho:** a Māori tribe from the Meremere district, which also has a small town of the same name located in the Northern Waikato region.

**Noa:** to be free from the restrictions of tapu.

**Noho marae:** Immersion-based learning at a marae.

**Ora:** wellness.

**Pā tuna:** eel weirs.

**Pepeha:** tribal saying, proverb.

**Poroproaki:** closing ceremony.

**Pōwhiri:** welcoming ceremony.

**Pūrākau:** traditional Māori narratives, story, legend.

**Rāhui:** embargo, quarantine, traditional Māori sanction to temporarily or permanently stop people using natural resources and/or manage the way those resources are used.

**Rama tuna:** eeling by torchlight.

**Rangatiratanga:** right to exercise authority, self-management, leadership, self-determination, sovereignty.

**Ritenga:** ritual, custom, practice.

**Rohe:** region.

**Taha hauora:** human health and wellbeing.

**Taha hinengaro:** mental wellbeing.

**Taha tinana:** physical wellbeing.

**Taha wairua:** spiritual wellbeing.

**Taha whanaunga:** responsibility and capacity to belong, care for and share in the collective.

**Taniwha:** guardians – or kaitiaki – that serve as a warning of danger.

**Tapu:** sacred, prohibited, restricted, set apart. The law of tapu is intended to protect the mauri and mana of all things.

**Te ao Māori:** Māori worldview.

**Te Herenga:** the EPA's network of Māori environmental practitioners from across New Zealand.

**Te taiao:** the natural world, the environment.

**Tikanga Māori:** set of practices, customs and traditions that are accepted as a reliable and appropriate way of achieving and fulfilling certain objectives and goals.

**Wāhi tapu:** sites of significance.

**Waiata:** song. Waiata often refer to the history of people or place and have many styles, including waiata tangi (laments), oriori (lullaby), mōteatea (ancient chants), and pātere (fast-paced chants).

**Waka hourua:** a partnership approach.

**Wānanga:** workshops, seminars.

**Wawata:** aspiration.

**Whakairo:** carvings.

**Whakapapa:** genealogy.

**Whakataukī:** proverb, significant saying.

**Whānau:** family (including extended family).

**Whanaungatanga:** relationships, connectedness.

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Published in June 2020 by the  
Environmental Protection Authority  
Te Mana Rauhi Taiao

Private Bag 63002  
Wellington 6140  
New Zealand

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