

A. PROJECT TITLE	T4 Te Tāhuhu Matatau o Tangaroa, mai Tauranga Moana ki te Ao: Empowering the kaitiaki of Tangaroa from Tauranga Moana to Aotearoa and beyond
“SHORT” TITLE	Te Tāhuhu Matatau: Empowering kaitiaki of Tangaroa
B. THEME / PROGRAMME	Tangaroa Programme

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D. CO-DEVELOPED WITH	
Organisation / company / agency	Level of partnership
Te Whanau o Tauwhao ki Otawhiwhi, Te Rungana o Ngai Te Rangi, Manaaki Te Awanui	Advisor & Iwi, Hapu Partner
Pirirakau, Ngati Hangarau, Ngati Ranginui Incorporated Society, Manaaki Te Awanui	Advisor & Iwi, Hapu Partner
Ngati Kau, Ngati He, Manaaki Te Awanui	Advisor & Iwi, Hapu Partner
Ngai Tukairangi, Tauranga Moana Iwi Customary Fisheries Trust	Hapu Partner
Ngai Tukairangi	Hapu Partner
Manaaki Whenua	Project Link & Dissemination
NIWA	Project Link & Dissemination
Haunui Tech, Mahia Mataitai Committee	Advisor, Project Partner & Tech Development
Cawthron Institute	Project Link & Dissemination
Parliamentary Commission for the Environment	Project Link & Dissemination
Bay of Plenty Regional Council	Project Link & Dissemination
Tauranga City Council	Project Link & Dissemination
University of Waikato	Project Link & Dissemination
Biological Heritage NSC	Project Link & Dissemination
Te Kotahitanga o Te Atiawa	Project Link & Dissemination
Paepae o He'eia Fish Ponds, Hawaii	Project Link & Dissemination

#### E. ABSTRACT

Reclaiming and reframing mātauranga Māori enables kaitiaki to develop relevant and meaningful tools based on their world view. These tools help streamline kaitiaki responses to marine degradation and increase efficiencies in the capture and dissemination of reclaimed knowledge to assist decision-making. Throughout the phase one development process of the online resource centre, 3.1.3. Te Tahuhu Matatau i te Ao Tangaroa (Taipiri project), it was evident that there were limited digital resources available for kaitiaki that were developed by Māori for Māori. The Taipiri project focussed on the reclamation of mātauranga Māori, through hapū engagement, wānanga and kaitiaki interviews. Reframing the learnings from that reclamation process, using pou matua (guiding principles) developed with kaitiaki, helped to enhance the expression of kaitiakitanga by connecting kaitiaki to trusted sources of knowledge and tools.

Wānanga and kaitiaki interviews highlighted the importance of engagement with tangata whenua and lead to the emergence of key questions for future developments: (i) How might the specific tools of marine spatial mapping encourage the capture and storage of mātauranga Māori to streamline kaitiaki responses to marine degradation?, (ii) How might scientific reports and articles be produced to increase efficiencies of kaitiaki capture and dissemination?, (iii) How might future developments of digital storage and sharing of mātauranga Māori be implemented in a fast changing technological world?, and (iv) How might Māori frameworks and tools, assist academic researchers and governing bodies, in building trusting relationships with kaitiaki?

#### F. RELEVANCE TO CHALLENGE OBJECTIVE

The challenge aims to improve the understanding of environmental and biological constraints. We propose that building on Phase one of the Taipiri project will allow us to explore further how we connect kaitiaki to relevant and trusted sources of academic science and tools for ecosystem-based management. The incorporation of tikanga Māori and pou matua will continue to be a hallmark feature of this work, including the improved development of tikanga surrounding the safe storage and sharing of reclaimed mātauranga Māori (F04). The connection of kaitiaki stories to academic science tools will continue to be of importance into phase two with the additional development of marine spatial / temporal mapping tools for improved decision making throughout an Ecosystems Based Management (EBM) approach (F02). The project will also look to develop tools and frameworks that will assist academics and governing bodies to improve kaitiaki relationships aiding in knowledge co-development within an EBM approach (F02).

G. OUTPUTS	This project will produce the following Outputs:	Linked to which Theory of Change Outputs:	Explain briefly your plan to ensure uptake by iwi and stakeholders:
	<ul style="list-style-type: none"> <li>Develop a marine spatial mapping tool to assist in the reclamation of mātauranga Māori</li> </ul>	(b) developing capabilities for capturing knowledge that supports an EBM approach	Engagement throughout phase one was underpinned by the principle of kanohi ki te kanohi. Wānanga (intentional in-depth consideration & debate), uiui (interviews) and kōrero (discussion) were used to bring kaitiaki together to share experiences and knowledge from their varied perspectives. It created a safe space to openly and honestly give feedback on the progress of the program.
	<ul style="list-style-type: none"> <li>Develop digital mediums that improve science communication between academics and kaitiaki</li> </ul>	(k) developing pathways for improved and efficient communication between kaitiaki and the challenge	A core component of the tool development in phase two will continue to follow the successful engagement processes utilised in phase one. This project will continue to ensure that kaitiaki have time to build relationships with the tool developers, building trust and confidence in the vision and the process of tool development. This approach will ensure continued uptake and use of the tools past the end of the project.
	<ul style="list-style-type: none"> <li>Investigate Māori tools and frameworks that can assist academics and government agencies to engage with kaitiaki</li> </ul>	(b,k) improving pathways for knowledge between kaitiaki, academics and resource managers	The phase two project will continue to utilise the core values and guiding principles laid out by kaitiaki: whakapapa, whanaungatanga, kanohi ki te kanohi, rangatiratanga, kawa and tikanga, whakapiri, whakahāpai, and whakamana.
	<ul style="list-style-type: none"> <li>Investigate changing technologies of information capture, storage and dissemination to ensure the digital platform remains relevant after the challenge</li> </ul>	(k) maintaining digital pathways of knowledge beyond the challenge	

H. OUTCOMES	This project will contribute to the following Theory of Change Outcomes:
	<ul style="list-style-type: none"> <li>(3) Knowledge stored in the online resource centre used in management to improve ecological health</li> </ul>
	<ul style="list-style-type: none"> <li>(4) Enabling kaitiakitanga to inform an EBM approach</li> </ul>
	<ul style="list-style-type: none"> <li>(8) Ensuring kaitiaki are involved throughout the challenge and promoting their involvement in the research and the fit for purpose tools that they helped co-develop</li> </ul>

## I. INTRODUCTION

The overarching aim of this project is to empower kaitiaki with relevant environmental management approaches, frameworks and tools, via the development of an online resource centre. This online resource centre will utilise core Māori values to guide the digital build process, 'tell kaitiaki stories' and link these stories to relevant knowledge via digital hyperlinks based on whakapapa / genealogical connections.

Although this research project was initially structured as a stepwise process (3.1.3. Te Tahuu Matatau i te Ao Tangaroa Proposal) that pre-laid the development pathways for construction of an online resource centre, it was important that the project allowed the space and time to explore the process of kaitiaki mediated tool development. The phase one tool development process required a flexible approach and an openness to change. This method not only highlighted several key lessons along the way, but it also changed the face of the final product. The lessons from phase one will continue to guide the development process into phase two.

Some of the key learning from phase one included:

- *Building Trust: Through kanohi ki te kanohi, kōrero, uiui and wānanga*
- *Telling Our Stories: Acknowledging kaitiaki stories and their whakapapa connections*
- *Connection: Building whanaungatanga by connecting kaitiaki to knowledge, tools and people*
- *Ownership: Maintaining tino rangatiratanga over kaitiaki knowledge*
- *Protocols: Creating the space to wānanga tikanga and kawa required for the safe keeping of kaitiaki stories*

These key lessons established the pou matua of whakapiri, whakahāpai and whakamana; to connect, enhance and empower the work of kaitiaki, and inform the development of the core values of kanohi ki te kanohi, whakapapa, whanaungatanga, rangatiratanga, tikanga and kawa. The learnings from kaitiaki interviews indicated that any tool developed for use by kaitiaki should be based on the fundamentals of kawa, tikanga and kaupapa, which also incorporates further core values of whanaungatanga, manākitanga and mātauranga.

The Manaaki Te Awanui research team will continue to operate under the pou matua and core values from phase one and will:

- (i) Further develop the marine spatial mapping tool ("explore" function in the phase one web application), in accordance with tikanga Māori,
- (ii) Further develop/adapt digital mediums ("collections" function in the phase one web application) to improve the dissemination of scientific information amongst kaitiaki.
- (iii) Further develop mātauranga Māori tools and frameworks ("networks" function in the phase one web application) for academic researchers to more effectively take part in co-management.
- (iv) Further develop the phase one web application to remain technologically current throughout the lifespan of phase two.

## J. AIMS

Develop an online experience that uplifts the mana of mātauranga Māori through: (i) the reclamation of mātauranga in geospatial/temporal digital mapping solutions, (ii) the storage of mātauranga in a safe accessible digital platform, and (iii) the dissemination of mātauranga through applicable digital mediums (e.g. videos) that are meaningful to kaitiaki and researchers, now and into the future.

The research aims to find mapping solutions that enable kaitiaki to geo-reference knowledge related to their traditional indicators, and observations of marine degradation and recovery. Investigations will be made into the possibilities of temporal mapping to aid in the recovery of intergenerational knowledge transfer.

It is important that solutions for the safe storage and dissemination of reclaimed mātauranga be developed in accordance with tikanga Māori. The project aims to ensure that the appropriate consents are received prior to collection, and the online upload system is capable of categorising information into the appropriate privacy levels.

The research team will investigate the changing digital storage and dissemination technologies available to remain current through phase two and beyond the life of the project. We also aim for the dissemination of stored knowledge to remain accessible or transferable to more modern systems after the challenge is complete.

## K. PROPOSED RESEARCH

### *Proposed Research Methodology Explained:*

This section provides a research method and methodology based on, and adapted from, the Te Aho Tū Roa framework “Pūnaha Akoako”, developed for creating Māori environmental education programmes. The Pūnaha Akoako framework asks the following Pātai (questions):

- Pātai 1: Nō hea tātou (where did we come from?),
- Pātai 2: Kei hea tātou ināianei? (where are we now?),
- Pātai 3: Me ahu pēhea? (what are our aspirations and where do we want to go?),
- Pātai 4: Whakatinanatanga? (what are we doing to get there?)
- Pātai 5: Pūmahara (reflection on what we have achieved).

The Manaaki Te Awanui research team will engage with the Kaitiaki Steering Group; Kaihautu (case study group leaders), Kaiurungi (research advisors) and Kaiwhakatere (lead researchers), through wānanga, to produce key learning outputs for each of the Pūnaha Akoako Pātai (Pātai 1-5) relating to the Taipiri Research Themes (RT1-3):

RT 1 – Spatial Mapping tools: How might the specific tools of marine spatial mapping encourage the capture and storage of mātauranga Māori to streamline kaitiaki responses to marine degradation?

RT 2 – Navigating new spaces: How might future developments of digital storage and sharing of mātauranga Māori be implemented in a fast-changing technological world? How might Māori frameworks and tools, assist academic researchers and governing bodies, in building trusting relationships with kaitiaki?

RT 3 – Scientific Communications: How might scientific reports and articles be produced to increase efficiencies of kaitiaki capture and dissemination?

### *Pou Matua and Core Values Explained:*

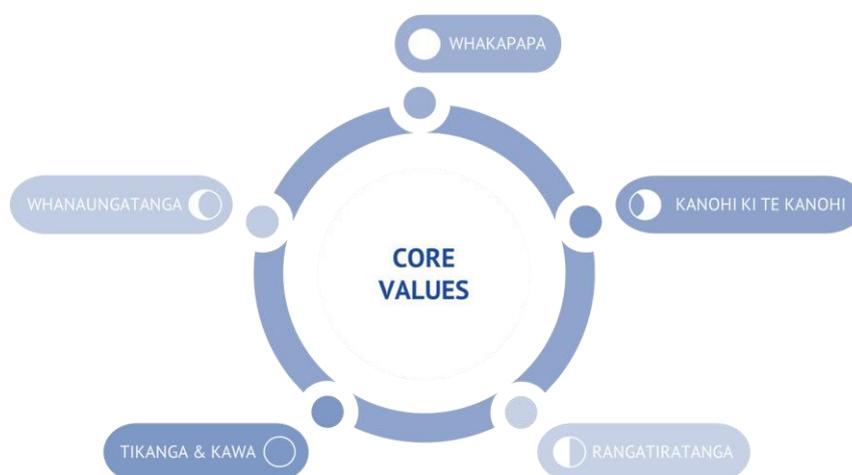
The phase one Taipiri project developed pou matua and core values based on the key learnings throughout the initial development of the online resource centre. The pou matua of whakapiri, whakahāpai and whakamana; to connect, enhance and empower the work of kaitiaki, will continue to guide the engagement and developments during the early stages of phase two, as will the core values (Figure 1). It is envisaged that the key learnings during phase two may result in evolving the phase one pou matua and core values. Below we outline how these pou matua and core values will be applied in our research.

#### *Pou Matua:*

*Whakapiri (Connect):* We will create an avenue for kaitiaki to share their own stories and articulate their unique connection to the environment, people and knowledge via our wānanga and online platform.

*Whakahāpai (Enhance):* Our wānanga will be a place where tangata whenua deliberate and discuss information that creates and enhances mātauranga Māori.

*Whakamana (Empower):* Using Uiu and kōrero we will facilitate in-depth examination and analysis of each development stage, where kaitiaki are able to make informed decisions for the safety of their knowledge, based on their tikanga.



*Figure 1: The development of the core values of whakapapa, kanohi ki te kanohi, whanaungatanga, rangatiratanga, tikanga and kawa and whanaungatanga were based on the key learnings that arose from the phase one kaitiaki interviews.*

#### *Core Values:*

*Whakapapa:* We will support kaitiaki to *relate* to each other and the environment through whakapapa connections. Whakapapa explains how tangata whenua are connected to their tīpuna, to each other and to te taiao.

*Kanohi ki te kanohi:* We will seek to support kaitiaki and their unique connection to the environment through *face to face* relationships. Kanohi ki te kanohi is a principle of engagement that is crucial to tangata whenua as it provides a safe environment to share information.

*Rangatiratanga:* We will support kaitiaki strive for self-determination and authority over their rohe and taonga. Kaitiaki mātauranga is a taonga and must be cared for appropriately.

*Tikanga and Kawa:* Our research process will be governed by tikanga and kawa (lores, rules and guidelines) in accordance with Te Ao Māori. Tikanga are the procedures and lores that govern a Māori way of life, they can evolve and differ between hapū and marae. Tikanga is host specific but remains true to the overlying kawa.

*Whanaungatanga:* We will enable kaitiaki to make *key connections* between themselves, others and the environment through whanaungatanga. Whanaungatanga is an extension of whakapapa whereby tangata whenua and kaitiaki are able to make links with others to share their interactions with the world around them.

### Co-development Program Explained:

It remains important that the program development follows an iterative feedback loop, whereby each stage is researched, developed, tested, refined, and reviewed by the Steering Group. Constant feedback loops, primarily through wānanga, will be required to ensure the project remains on track throughout the tool development process (Figure 2). This engagement process has been adapted from the successful phase one framework for validating and mediating the transfer of benefits from relevant academic science (3.1.3. Te Tahu Matatau i te Ao Tangaroa) and other knowledge bases to kaitiaki.

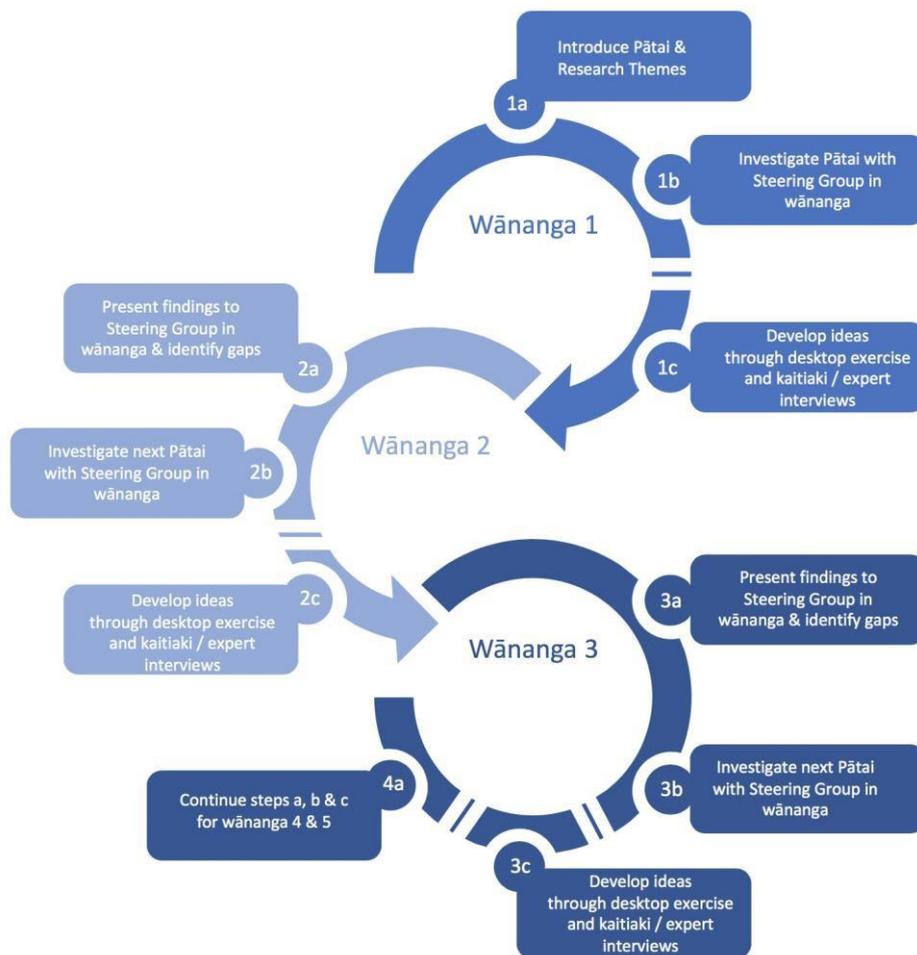


Figure 2: The proposed method for validating and communicating each Pātai and Research Theme.

The method depicted in Figure 2 demonstrates the anticipated process for (a) validating the investigations of Pātai and Research Themes with the Kaitiaki Steering Group, (b) the identification of gaps in knowledge, models, frameworks, and tools associated with real-world problems confronting case study groups and kaitiaki and (c) further developing ideas through desktop exercises interviews with kaitiaki and knowledge experts. Each wānanga will investigate one of the pātai in the pūnaha akoako framework. It is envisaged that each wānanga will be co-developed and run alongside the T3: Ngā Tohu o te Ao project. Each of these wānanga are outlined below:

### **Pātai 1: Nō hea tatou? Where did we come from?**

*Focus: What are examples from Te Ao Kōhatu (the world of old)?*

Outputs: Produce an infographic digital resource collection that summarises the key learnings from wānanga with regards to the Te Ao Māori solutions, frameworks and protocols for spatial mapping (RT1), navigating new spaces (RT2) and science communication (RT3).

Wānanga 1 will focus on investigating Te Ao Māori solutions, frameworks and protocols for spatial mapping, navigating new spaces and science communication. The phase one learnings that arose through kaitiaki interviews were that any tool developed for use by kaitiaki should be based on the fundamentals of Te Ao Mārama, building on whanaungatanga, manākitanga and mātauranga. It is important that investigations are made through wānanga 1 to find Te Ao Māori solutions in the first instance, building a foundation and framework for our Research Themes. Examples of successful innovations that come from Te Ao Māori identified in phase one was the return to the teachings of whaikōrero to communicate the project learnings. We will also continue to adhere to tikanga and kawa surrounding the protocols of safe knowledge storage, validating this continually throughout phase two.

Wānanga 1 will investigate Te Ao Māori solutions, frameworks and protocols for spatial mapping, navigating new spaces and science communication, and as a part of that process the research team will engage with Te Ohu Kaimoana and look at the development learnings for Ikanet and how that may inform the T4 project.

### **Pātai 2: Kei hea tātou? Where are we now?**

*Focus: What are examples from Te Ao Hurihuri (the changing world)?*

Outputs: Provide guidance in the form of a digital resource presentation that summarises the key learnings from wānanga and a desk top exercise of investigating current and future digital technologies for storing and sharing knowledge.

Wānanga 2 will look to investigate current technologies for spatial mapping, navigating new spaces and science communication that could be appropriate to being intergrated with the kaupapa Māori frameworks and solutions investigated during wānanga 1. The phase one technology developments demonstrated that a web application for storing information could be successfully merged with a pātaka kai framework (based on the storehouse for food), which will be further developed in phase two. Currently the mapping solution investigated in phase one is a rudimentary trial that can store information spatially, however with the emergence of the T3: Ngā Tohu o te Ao project, it will be necessary to develop the technology to input temporal data series and observations into the mapping technology. There will be a conscious effort to adapt and evolve the technology development to remain relevant after the lifespan of the Sustainable Seas challenge.

Wānanga 2 will investigate current technologies for spatial mapping, navigating new spaces and science communication that could be appropriate to merge with the Te Ao Māori frameworks and solutions investigated during wānanga 1. The research team and steering group will further investigate current tools such as Seasketch and QGIS.

The Taipiri online resource centre has the ability to link websites to collections and projects where whānau find appropriate. The Taipiri online resource centre can upload GIS shapefiles from LINZ. The project team may investigate with the steering group the possibilities that the LINZ data can be searched for and uploaded, directly from the Taipiri online resource centre (similar to Ikanet).

### **Pātai 3: Me ahu pēhea? What are our aspirations and where do we want to go?**

*Focus: How can we bring together Te Ao Kōhatu and Te Ao Hurihuri?*

Outputs: Provide sciart mockups for interfacing Nō hea and Kei hea tātou. Sciart examples may include web page designs, reporting designs and presentation designs that link mātauranga Māori and academic science.

Wānanga 3 will be dedicated to developing the visual concepts of how Pātai 1: Te Ao Kohatu (the world of old) and Pātai 2: Te Ao Hurihuri (the changing world) will be interfaced. Key learnings will be taken from phase one from the development of the front end web application design and the Taipiri project report design, to help inform phase two investigations. The design experts will work with the technology developers to create the digital platforms that communicate mātauranga Māori (as informed by the Kaitiaki Steering Group) and academic science. Background work will focus on ensuring that the phase one web application will be “fit for purpose” and ready for case study trials in Wānanga 4.

#### **Pātai 4: Whakatinanatanga? What are we doing to get there?**

*Focus: Support case study groups to produce their own digital resource collections.*

*Outputs: Collecting of data, connecting kaitiaki to develop monitoring programs, uploading data and following tikanga to safely store or share knowledge.*

Wānanga 4 will focus on trialling the use of the spatial and temporal mapping solutions, and the knowledge storage and sharing web application (with knowledge sharing tikanga incorporated), within the case study group areas.

#### **Patai 5: Pumahara? What have we achieved?**

*Focus: Identifying successes and areas for improvement*

*Output: Submit an infographic report summarising the key learnings throughout the project*

Wānanga 5 will summarise the entire project and look to reflect on the learnings and validate any outputs required for final submission and reporting of phase 2.

It is our expectation that this research method will make it possible to create an online resource centre that can be validated through case study groups with a view to being deployed nationally in the future. We also expect that this research journey will contribute to better understanding of: (i) problems that prevent the successful communication of knowledge across cultures and worldviews, (ii) gaps that exist between academic science research / knowledge and mātauranga Māori, and (iii) opportunities that exist to build and develop tools that will more effectively mediate the movement of knowledge across linguistic / cultural / worldview boundaries.

## **N. LINKS TO PHASE I RESEARCH**

- 3.1.2 He Poutokomanawa: Evaluating Māori environmental views to develop a kaitiakitanga framework. How might the specific tools of marine spatial mapping encourage the capture and storage of mātauranga Māori to streamline kaitiaki responses to marine degradation?
- 3.1.3. Te Tahuhu Matatau i te Ao Tangaroa: Improving the storage and dissemination capability of the online resource centre. How might future developments of the Taipiri project be implemented in a fast changing technological world?
- 2.1.2. Mauri Moana, Mauri Tangata, Mauri Ora: Te waka taurua and how this informs development of Māori tools and frameworks that enable and assist academic researchers to build trusting relationships with kaitiaki. How might Māori frameworks and tools, assist academic researchers in building trusting relationships with kaitiaki?
- VM4.1. Repository of knowledge consent forms for collection and storage of digital information. How might tikanga Māori inform the safe storage of mātauranga in a digital platform?

#### M. LINKS TO & INTERDEPENDENCIES WITH PHASE II RESEARCH PROJECTS

The Taipiri project aims to work directly with the Nga Tohu o te Ao project (T3) this will test and improve novel mechanisms for the reclamation, storage, synthesis and dissemination of outputs and outcomes for both projects (T3 & T4). The research team aim to also connect with all Tangaroa research projects (T1, T2, T3 & T5) within the challenge by initiating and attending wananga to share learnings and discussions on the effectiveness of engagement models and project implementation with hapu and iwi.

The research team also envisage that the online resource centre developed within the Taipiri project will be a catalyst for kaitiaki to synthesise and reinstate traditional methodologies towards ecosystem-based management. This will create a mechanism to implement such knowledge in a contemporary context as well as provide an opportunity to connect other knowledge systems (*for example ecological sciences and spatial planning*) developed throughout the challenge and aboard. In the first instance we aim to use the online resource centre to connect outputs and outcomes of the Nga Tohu project with projects 1.1 *“Understanding ecological responses to cumulative effects”* and 1.2 *“Tools for incorporating ecological responses to cumulative effects into management action”* by creating a space for informed discussion (i.e. invitation to wananga, maintaining general relationships) of how we map ecological responses and stressors as well as overlay collated assessments of place specific cultural indicators to inform holistic management action. This process will also assist in the investigation of how scientific reports and articles might be produced to increase efficiencies of kaitiaki capture and dissemination.

The research team also envisage the Taipri project will align with project 4.2 *“Options for policy and legislative change to enable EBM across scales”* by drawing out key differences between kaitiakitanga and EBM. As part of the workplan we aim to investigate and develop mātauranga Māori tools and frameworks for academic researchers to more effectively take part in co-management activities. This will give the project an opportunity to discuss, *“How do we communicate science better?”* and how do we develop/adapt new digital mediums for capturing scientific knowledge, in accordance with connecting with kaitiaki Māori, that helps kaitiaki to connect, discuss and disseminate scientific information to the wider whānau/hapū/iwi.

## N. VISION MĀTAURANGA (VM)

### Partnerships

*Evidence of newly established, or effectively leveraged existing partnerships and/or relationships with iwi, hapū and/or Māori entities:* The Taipiri project will work along the Nga Tohu project to engage with case study leaders in three rohe. We will look to build newly established partnerships (Tokomaru Bay and Taitokerau) and will also leverage existing partnerships (Tauranga moana, Tamaki Makarau). The case study leaders from each rohe will make up a portion of the collective research group.

*The development of 2-way capability resulting from the project:* The Taipiri project aims to build collective capability in storing and managing traditional knowledge within a digital medium and provide a tool to synthesis knowledge that is relevant and important for kaitiaki and researchers to respond to EBM. The workplan provides an iterative stepwise process where the development of the online resource centre will be tested and evaluated via a feed back loop during each wananga. This will enable the research collective (Case study leaders, advisors and researchers to 1) continually work to co-develop the online resource centre further so it is fit for purpose during the project, 2) provide an opportunity to first hand identify how relevant forms of science uptake will connect to the research aspirations of the case study groups and 3) evaluate the outcomes of the project to be influential in implementing a process to establish the online resource centre beyond the life of the project.

### Distinctive Contribution

*A clear programme for the delivery of activities and/or outputs specifically for Māori partners and/or end users (through approach, capability and/or resource allocation).* The success of the Taipiri project is heavily weighted on how an online resource centre can be used by kaitiaki in responses to EBM. For this process we have created a research collective to enable hapu kaitiaki from three case study areas (Tokomaru, Tai Tokerau and Tauranga moana) to indigenize how we use technology to safely store, synthesise and disseminate knowledge for the management of cultural land and seascapes.

*Evidence that project outputs are specifically tailored to supporting Māori needs, interests and aspirations:* The project outputs and desired outcomes will be co-developed during a series of co-planned wananga. We will work closely with the case study leaders to ensure the key learnings, process and outcomes are presented in a culturally appropriate way. Ultimately, we aim to ensure that the online resource centre will provide a mechanism for the case study leaders to confidently collate forms of information for dissemination to their wider whanau, hapu and iwi as well as external organisations.

### Meaningful Outcomes

*Clear provision of appropriate delivery, dissemination and uptake of research outputs and findings to Māori audiences:* The Taipiri project will work conjointly with the Nga Tohu (T3) project. As this project aims to better understand kaupapa maori frameworks to inform dissemination of research findings the Taipiri project will support the research collective to develop digital catalogue's and will support exploration of appropriate dissemination and uptake pathways.

*Māori resources, people and/or knowledge has been enhanced as a result of the project and/or its outputs:* The Taipiri project aims to provide a holistic pathway for the uptake of multi-disciplinary knowledge systems. This project, therefore, will not only enhance the repository of matauranga maori, but it will support the reclamation of locally derived tribal knowledge while identifying and connecting to relevant science tools and understandings. The learnings from this project will serve as a resource to support other maori and/or indigenous communities to reclaim traditional marine management practices and will connect kaitiaki across Aotearoa and the world.

## O. ENGAGEMENT REQUIRED WITH IWI AND STAKEHOLDERS

Manaaki Te Awanui have drawn on previous experiences in conducting research with hapu by initiating early engagement and co-development of the project before commencement. This has allowed us to shape the workplan in conjunction with the Nga Tohu o te Ao Project (T3) project and identify its relevance within the case study areas of Tokomaru Bay, Te Taitokerau and Tauranga Moana. Additionally, both projects are kaupapa Maori led and enables the case study leaders of each area to establish and define foundational tikanga and kawa principles to guide, protect and evaluate the project. This process will also create a mechanism for the case study leaders to inform and disseminate their findings through tribal and other associated networks. To facilitate and enhance the engagement there will be at least seven wananga throughout the duration of the project, with each wananga providing a scope for reaffirming relationships as well as being guided by the research group (case study leaders, advisors and researchers) to identify appropriate pathways for introducing and disseminating successes and challenges from project to tribal affiliations as well as local and regional organisations.

## P. PROJECT COMMUNICATIONS

This project aims to set a precedence by sharing learnings through successes and challenges as well as outputs of the project by the research group (case study leaders, investigators and research leaders). This will be achieved initially by connecting the case study groups to networks within the area of marine and coastal sciences (through the challenge & with key people identified as links and dissemination of the project) as well as present at wananga and hui, set within the project and the sustainable seas challenge. It is envisaged that this will provide an opportunity for tangata whenua to speak about their whenua and taiao using the online resource centre. During this time, it is also envisaged that the research team will identify the appropriate pathways for introducing and disseminating successes and challenges from the project to tribal affiliations as well as local and regional organisations. This project will also use the Nga Tohu o Te Ao (T3) project as a catalyst to test the workings and development of the online resource centre and create working exemplars in the form of digital collections. As part of the workplan and the succession of the online resource centre the research team also aim create a series of "how to use" resources in regard to the online resource centre.

## Q. RISK & MITIGATION

### *Kaitiaki Steering Groups*

Problem: Steering groups not lasting the entirety of the project Risk:

Medium

Remedy: Identify groups and individuals with established track records

### *Kaitiaki Engagement*

Problem: Kaitiaki are very busy and finding the time to engage can be problematic Risk: High

Remedy: Take all opportunities to engage when kaitiaki are present for other kaupapa

### *Wānanga Disruptions*

Problem: Tangihana and other iwi engagements can override priority of this project Risk: Low

Remedy: Ensure back up venues and presenters are planned for each wānanga

### *Computer System Failure*

Problem: Loss of data Risk:

Low

Remedy: Data backed up to two different hard drives immediately after capture. Both hard drives stored separately and backed up to the Manaaki Te Awanui server and dropbox upon arrival to the office.

*Obsolete Technology*

Risk: Medium

Remedy: Continuously monitor new and developing technologies. Review technologies for at the end of the second year to evaluate relevance.

R. CONSENTS & APPROVAL  
required to undertake  
research

Pou matua and core values were developed from key lessons learned throughout phase one and will continue to be refined through wānanga and korero. These pou matua and core values provide the research team with ethical guidelines to ensure the appropriate use of knowledge throughout the reclamation and reframing process.

It is important that solutions for the safe storage and dissemination of reclaimed mātauranga be developed in accordance with tikanga Māori. The appropriate consents will be received prior to collection, and the online upload system will be developed with the appropriate privacy capabilities.

S. REFERENCES

Cole A. O., Taiapa C., and Rameka W., (2017) Research Proposal: Tāhuhu Matatau Te Ao Tangaroa: empowering the kaitiaki of Ngā Whare Tokotoru ki Katikati with mātauranga from Aotearoa and beyond. Sustainable Seas Challenge, Tangaroa Programme (Project 3.1.3).

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