Phase II Research Proposal

A.	PROJECT TITLE	4.3 Enabling Kaitiakitanga and EBM
	"SHORT" TITLE	Kaitiakitanga and Ecosystem-Based Management
B.	THEME / PROGRAMME	Theme 4: Enhancing EBM practices

C. PROJECT KEY RESEARCHERS

Role	Name	Institution / company	Email
Project Co-leader and Principle Researcher	Lara Taylor	Manaaki Whenua Landcare Research	TaylorL@landcareresearch.co.nz
Project Co-leader and Researcher	Dr. Meg Parsons	University of Auckland	Meg.parsons@auckland.ac.nz
Research Advisor	Dr. Shaun Awatere	Manaaki Whenua Landcare Research	
Theme Leader and Mentor	Dr. Karen Fisher	University of Auckland	
Researcher	Māori scientist		

D. CO-DEVELOPED WITH

Organisation / company / agency	Level of partnership
Environment Protection Agency	Meetings, email/telephone correspondence.
Ministry for Primary Industries	Meetings, email/telephone correspondence.
Department of Conservation	Meetings, email/telephone correspondence.
Moana New Zealand	Meetings, email/telephone correspondence.
Terra Moana	Meetings, email/telephone correspondence.
Integrated Kaipara Harbour Management Group	Meetings, email/telephone correspondence.
Kaipara Moana Negotiations Reference Group	Meetings, email/telephone correspondence.
Mōtiti Hapū	Meetings, email/telephone correspondence.
Hauraki iwi rep on Implementation Advisory Panel for Sea Change, Tai Timu Tai Pari	Meetings, email/telephone correspondence.
Ngāti Kahu iwi member, diver and rāhui enforcer	Meetings, email/telephone correspondence.
Environmental Defence Society – Law and Policy, Rep on Implementation Advisory Panel for Sea Change, Tai Timu Tai Pari	Meetings, email/telephone correspondence.
Ecologist, Mountains to Sea Trust	Meetings, email/telephone correspondence.
Waiheke Collective – Marine Project	Meetings, email/telephone correspondence.

E. ABSTRACT

Aotearoa New Zealand's increasingly degraded coastal and marine environments is, in part, a product of the radical ecological changes that commenced following colonisation. One aspect of colonising processes involved the marginalisation of mātauranga Māori and kaitiakitanga-based environmental management in favour of Western scientific knowledge and associated environmental management and governance approaches. Māori and non-Māori alike are calling for new approaches to the management of coastal and marine spaces that incorporate multiple forms of knowledge (including scientific and mātauranga) and address Māori rights, interests and values (as Treaty partners, mana whenua, and kaitiaki).

In particular, there is a critical need for research that examines the compatibility of ecosystem-based management (EBM) with kaitiakitanga. This includes how to co-design and co-produce EBA in a way that draws on scientific knowledge and mātauranga Māori. A central component of this project, therefore, is to investigate and analyse strategies that allow Māori and non-Māori collaboratively to co-develop, co-design and co-produce plans and projects that draw on kaitiakitanga and EBM.

This project will develop a better understanding of contemporary kaitiakitanga practices within coastal and marine environments and how EBM can be incorporated within/alongside kaitiakitanga. The research findings from this project, (and other Challenge Research), will be consolidated into publications as well as a practical toolkit for end-users (Māori and non-Māori) who want to engage in their own kaitiakitanga-EBM co-design and co-production process. The conclusion of this project, therefore, will offer clearer understandings of how to enable and enhance kaitiakitanga within the context of EBM.

F. RELEVANCE TO CHALLENGE OBJECTIVE

The project seeks to offer a rigorous research base to support iwi, Crown agencies, local governments and stakeholders in how to navigate the practicalities of co-designing and co-producing EBM approaches that incorporate different forms of knowledge and resource use and management principles. The research will develop a toolkit, consisting of a suite of different strategies that can be employed and adapted by end-users (including iwi, hapū, Crown agencies, local governments and relevant industries), on how Māori and non-Māori can work together to co-design and co-produce EBM approaches that directly enable and enhance kaitiakitanga. The project will make significant contributions to answering some of the critical challenges involved in how to recognise and employ mātauranga Māori and kaitiakitanga within contemporary environmental management and governance approaches. Our focus addresses lack of research and practical guidance into how EBM initiatives in Aotearoa New Zealand can work within or alongside contemporary kaitiakitanga practices.

G. OUTPUTS	This project will produce the following Outputs: (numbering follows Section S)	Linked to which Theory of Change Outputs:	Explain briefly your plan to ensure uptake by iwi and stakeholders:
	3, 4, 5, 6, 8, 9: Underlying knowledge and practical requirements of iwi and hapū to participate in EBM co-design and co-production processes, and to form lasting cross-cultural and inter-institutional partnerships (across different scales) to allow them to practice kaitiakitanga alongside/within EBA. **6, 8:** A toolkit (a collection of strategies and guidelines designed to assist end-users co-design and co-produce plans and projects that incorporate kaitiakitanga within and alongside EBM). The toolkit is designed to enhance kaitiakitanga and provide guidance into best practices for incorporating the principle and practices of kaitiakitanga within EBM.	Effective partnership models and strategies for EBM approach to decision-making and management, developed, evaluated, and demonstrated	• We will co-develop the research with iwi and stakeholders including technical experts (scientific and policy) and government representatives. Along with targeted engagement with hāpu and iwi, it will include regular hui with our project's Advisory Group three times a year. • We will engage with cross theme and challenge projects. • We will engage in case studies that currently use kaitiakitanga practices and/or EBM, and those that are trialling the use of kaitiakitanga informed EBM
	4, 5, 7, 10: Case studies that explore the socio-cultural, spatial and temporal dynamics of contemporary kaitiakitanga practices are identified. **1, 2, 4, 5, 9, 10, 11:** Assessment of the	Traditional, local and other knowledges that supports EBM is captured, understood, and recognised	• We will develop case studies with partners that allow investigation of the different ways in which kaitiakitanga and EBM can be used together, and identifies best

	similarities and differences between kaitiakitanga and EBM practices and principles, and identification of intermediary (third) spaces between mātauranga Māori and western science that can provide fruitful ground for the co-production of hybrid knowledge, new practices, and equitable co-management and co-governance arrangements.		practices for Māori and non-Māori to work together to co-design and implement EBM approaches that are compatible with kaitiakitanga and tikanga.

H. OUTCOMES	This project will contribute to the following Theory of Change Outcomes:
	• EBM practices are understood and accepted as a viable approach by decision-makers, stakeholders and iwi
	• The complementarity of local expressions of Kaitiakitanga and EBM are well understood and enabled;
	• Knowledge from the Challenge is used in decision-making to improve ecological health and influences Aotearoa New Zealand's marine management practice and policy;
	• Māori rights, interests and values are supported through the application of EBM;
	• Researchers and iwi and stakeholders involved during the life of the Challenge continue to actively promote, research in and use knowledge from the Challenge.

I. INTRODUCTION

There is an urgent need to reimagine, reframe and redefine 'resource' governance and management in Aotearoa New Zealand to address the declining health of coastal and marine environments and to recognise the agency of Māori as kaitiaki and Treaty partners. While the marine and coastal region is the *receiving* environment of effects associated with land-based activities, EBM provides an approach to develop tools, frameworks, processes and strategies applicable across all 'resource management' domains. The development of 'how to' collaborate and empower mana whenua-based systems and approaches gives attention to the practical implementation and myriad practices that can assist in the uptake of EBM across multiple scales. According, project 4.3 builds on research from Phase I to deepen our understanding of the synergies, complementarities and divergences between EBM and kaitiakitanga, and the ways in which new approaches that allow for diverse knowledge systems and practices to co-exist and work together (while preserving the integrity of both knowledge systems) to address environmental degradation and biodiversity declines. Our project therefore explores how western science and mātauranga Māori – the knowledge systems informing EBM and kaitiakitanga in practice - can better inform how marine and coastal environments are governed and managed. In particular, this project seeks to identify different collaborative strategies, frameworks, and methods that are or could be used by Māori (iwi/hapū and other Māori groups), government agencies, and stakeholder groups engaged in processes of co-development, co-design, and co-production kaitiakitanga and EBM approaches.

The research acknowledges the legacy and ongoing effects of colonialism, and the legal, political, economic and socio-cultural complexities that complicate marine and coastal governance and management. We seek to identify opportunities to create new (or improved) new spaces for hybrid or pluralistic environmental governance and management to occur that draws on the strengthens of both mātauaranga Māori and scientific knowledge, and Māori kaitiaki and non-Māori environmental management practices through examining the ways to enable and enhance approaches that draw on both EBM and Kaitiakitanga. Conceptually, our research draws on postcolonial and decolonise scholarship, including Bhabha's work on 'third spaces' (Bhabha 1994), research into legal pluralism in Aotearoa New Zealand and other settler societies, and plural ontologies (worldviews and values). Such scholarship highlights the ways in which it is possible to uphold the integrity of multiple cultures and knowledge systems within governance and management approaches, and also offers insights into the transformational work that is or could take place in the future within Aotearoa New Zealand's moana. One of the key outputs from this project will be the creation of a toolkit (including a suite of different strategies that different end-users can chose form, adjust and use when they are engaging in co-development, co-design and co-production processes that involve kaitiakitanga and EBM). The toolkit will be designed to assign practitioners on the ground to push and traverse imagined (yet limiting) socio-political, cultural and environmental boundaries (Le Heron et al. - in draft).

The "He Waka Taurua" (Maxwell et al. - Submitted to Marine Policy) framework provides a way for the researchers in this project to facilitate the development of collaborative initiatives that recognise Indigenous worldviews, tools and approaches equitably with EBM. We will identify places and projects where mātauranga and science are already used to develop new management approaches for marine spaces, including (but not limited to) Challenge projects and case studies, as well as identify spaces where it could potentially be used in the future. We will employ a qualitative multi-case study methodology to allow researchers to explore and understand: how different individuals and groups of people collaborate and how the process of co-developing and co-designing approaches that draw on multiple forms of knowledge developed over time; how different forms of knowledge were collected and/or used, and who was in charge of deciding whose knowledge counted and how it was applied (including any intellectual property issues); how co-learning occurred and the identification of specific avenues that enabled or constrained cross-cultural, intra/inter-group learning to occur; how the use of different forms of knowledge contributed to changes in on-the-ground practices; what the benefits and limitations of current approaches to that combine/employ dual knowledge systems (mātauranga and science) are; and

the ways in which collaborations between kaitiaki practitioners, scientists, government officials, and other stakeholders to cross-fertilisation between knowledge systems and outcomes of this. The information gathered will be used to inform the development of the draft toolkit for kaitiakitanga-based collaborative EBM (Output 6), which in turn will be further co-developed with our Project Advisory Group (see Section S: Milestone 1.1) and other end-users. The draft toolkit will be evaluated by end-users (to consider its ease of use, end-user relevance, and effectiveness) and the final version (see Output 9) will be disseminated in accordance to our engagement strategy (see Section S: Output 1).

To help Aotearoa New Zealand achieve healthy ecosystems and a vibrant and strong blue economy; we address two key questions:

1. What are the alignments and differences between kaitiakitanga and EBM, and how can these approaches successfully work together?
2. How can place-based practitioners, policy makers and others engaged in EBM successfully bring both science and mātauranga together to underpin decision making?

J. AIMS

This project is divided into two parts and therefore has two aims. Part II will build on Part I.

Part I: Examines how different practitioners and groups around the world as well as within Aotearoa New Zealand are drawing on scientific knowledge and Indigenous Knowledge systems within EBM, and the strategies that are being used to facilitate cross-cultural collaborations. In particular, the first part of the project explores the synergies and complementariness of EBM and Kaitiakitanga, both in practices and principles, and considers the implication for the Challenge's tentative description of EBM principles; and

Part II: Building on a deeper understanding of the practices and synergies of EBM and Kaitiakitanga developed for Part I, which draws on wider experiences and learnings across the Challenge projects as well as project 4.3's case studies, Part II develops a practical toolkit that includes a suite of strategies (allowing to end-users to adjust and chose different strategies that suit them and the contexts they are working in) designed to assist end-users co-develop, co-design, and co-produce kaitiakitanga-based collaborative EBM.

K. PROPOSED RESEARCH

This research will develop practical toolkit for collaborative kaitiakitanga and EBM approaches in the marine and coastal area. The toolkit will be informed by research and case studies from Phase I and Phase II of the Challenge. The purpose of the research is to create transformative spaces that enable effective collaboration (between Māori and non-Māori, scientists and mātauranga Māori knowledge-holders) to take place at multiple scales. Those scales will correlate with the different governance and management scales required for the successful restoration of marine and coastal ecosystems i.e. national, regional, local and catchment scales. The researchers will work closely with 4.1 "Treaty relationships and EBM" and 4.2 "Options for policy and legislative change to enable EBM across scales" on those aspects.

Research Aim 1: Explore and communicate synergies between EBM and Kaitiakitanga, both in practices and principles, and consider the implications for the Challenge's tentative description of EBM principles.
This research aim focuses on summarising and analysing existing research, both generated within the Challenge and external to it (including international scholarship on Indigenous/non-Indigenous EBM collaborations),and co-producing new knowledge that documents practices and principles used by iwi, communities, agencies and organisations. Changes in legislation and policy in Aotearoa New Zealand, especially in respect of Treaty settlements but also a recent proliferation of bespoke regional legislation, is changing the ways in which Māori are able to intercede in governance and management spaces because of the increased acknowledgement of their status as Treaty partner. From an international perspective, the incorporation of Te Ao Māori principles within legislation, and the potential to disrupt the ontological dominance of western ways of thinking, is world leading. However, putting these changes into practice remains a key challenge. The first stage of this research project (Year 1 and Year 2) will involve the systematic review of peer-reviewed literature (book chapters/books, and journal articles) on how scientific knowledge and Indigenous Knowledge are being incorporated within different EBM approaches around the globe (Output 1).

In addition to analysing the research produced during Phase I of this Challenge project, the results of the systematic review will help identify what collaborative and co-design/co-production strategies are being employed by Indigenous peoples and non-Indigenous peoples and how it is feeding into new hybrid or pluralistic approaches to EBM that incorporate both scientific and Indigenous knowledge systems.

The second part of project 4.3 will involve an in-depth analysis of specific case studies, which will involve interviews, wānanga and focus groups, we will investigate how to transcend socio-cultural, political and environmental boundaries (such as those created by

ongoing effects of colonial discourse), and determine what it takes to build bridges between different value and knowledge systems (Le Heron – submitted to Marine Policy).

To achieve this research aim, we will conduct in-depth research in specific locations to gain a deeper understanding of how mātauranga and science have been utilised to give effect to EBM in line with the Waka Taurua framework, and to identify practices and principles that enable and enhance, and conversely suppress, effective collaboration. The table (see Appendix 1) summarises our potential case studies, the reasons why they were selected, and our engagement with our potential co-development partners in each location. We are co-developing the research with iwi/hapū and stakeholders leveraging off the meaningful relationships that Lara Taylor already possesses with individuals and groups in the potential case study areas. The research team already possesses ongoing relationships with institutions and individuals (be it active kaitiaki and/or environmental management practitioners as well as iwi/hapū, government agencies, and stakeholders) involved in collaborative environmental governance and management approaches. To date, we have conducted meetings, telephone discussions and email correspondence with all iwi/hapū identified as potential case studies, and all indicated their willingness to participate in the project. In addition, face-to-face meetings with representatives from Ngāti Whatua, who are involved in co-governance and co-management for the Kaipara Moana and Tikapa Moana/Hauraki Gulf, have been conducted, and further meetings will be conducted online with Ngāti Whatua and other iwi/hapū. Qualitative methods including thematic analysis and discourse analysis will be used to analysis both secondary (plans, policies, reports, historical materials, books and articles) and primary data (interviews). The research conducted in Research Aim 1 will directly contribute towards the development of Research Aim 2.

Research Aim 2: Develop a collaborative kaitiakitanga- and EBM-based toolkit on experiences and learnings from across the Challenge.

Research Aim 2 focuses on the co-development of a toolkit (with our Project Advisory Panel established under Milestone 2.1) to inform EBM approaches and on-the-ground practices, which directly builds on Research Aim 1. As a way to assist in the creation of holistic and inclusive approaches that help to more effectively manage and care for our moana, project 4.3 will develop a toolkit consisting of different strategies/tools that can be utilised by respective parties (be it iwi/hapū, governments, NGOs, community groups, Māori commercial operations) to develop collaborative EBA approaches that draw on mātauranga and scientific knowledge. Such strategies that adhere to co-governance and co-management principles and practices at multiple scales, and which can accommodate ontological and epistemological pluralism.

While every EBM-like initiative is important, the inherent nature of cumulative effects plus the fact that our moana and much of the flora and fauna within it know no boundaries, means that application of effective EBM is needed nation-wide. The first stage Research Aim 2 involves the analysis of the primary data collected from the case studies and the identification of what strategies enable successful collaborative mātauranga-inclusive and/or -centred EBM, and the ways in which co-learning between end-users (who possess different knowledge, worldviews, and practices) within co-design and co-production of EBM approaches can be facilitated.

The development of the toolkit (see Output 6 and 9) forms the major component of Research Aim 2, and will be informed by and build on the experiences of these rangatira and kaitiaki who are working at the 'coal-face' to empower kaitiakitanga and EBM for the health and wellbeing of our marine and coastal taonga. We might also engage with bodies established to support these initiatives, and policy and planning advisories such as the Marine Special Interest Group and the New Zealand Planning Institute and Papa Pounamu. The final phase of RA2 is to test the toolkit with a wider Māori advisory group and other practitioners and partners.

As part of both Research Aims, we will establish a Project Advisory Group (see Section D) that will be comprised of these iwi and stakeholder co-development partners who were involved in the co-development process for this proposal, and indicated their commitment to be involved in the research project. The involvement of the Project Advisory Group is of critical important to the research design and methods as we are 'using' case studies that belong to iwi and communities outside of the research team and they (members of the Project Advisory Group) are the experts and knowledge holders. Equally, agency representatives are the ones working in the relevant policy spaces that we need to engage.

Therefore, we should work with them appropriately, recognising and leveraging off the knowledge and expertise that they can contribute and ensuring appropriate acknowledgement. We will also reciprocate with our knowledge and expertise where it will benefit them as well. Genuine and effective partnership and ongoing meaningful relationships is paramount to the research team and to our future Project Advisory Group. The project outputs are design to be meaningful to those iwi, hāpu, communities and organisations who are directly involved in the case studies as well as end-users throughout Aotearoa New Zealand. In addition, the research will provide significant insights for wider international audiences who are interested in and/or directly involved in cross-cultural EBM planning and projects. The active and ongoing involvement of our co-development partners from start to finish of this project reflects the true nature of co-development and collaboration, and the integrity of the project. As well as ensuring buy-in from end-users, the ongoing process of co-development with end-users is designed in a way to enhance the uptake of outputs once they are completed.

The potential case studies and co-development partners (also refer section D) are outlined in depth in Appendix 1. Please refer to this table for further detail. The choice of case studies is a reflection of three things: 1) relationships (Taylor's existing networks and meaningful relationships with iwi/hapū involved in collaborative coastal, marine, and biodiversity management); 2) research (conducted during Phase I of the Challenge); and 3) emerging issues and/or opportunities (for instance Treaty settlements and the creation of new institutions mean that certain places are engaged in new forms of coastal and marine management that can provide important insights into the mechanisms and practices of collaborative EBM).

L. LINKS TO PHASE I RESEARCH

This project links strongly with Phase I. The first part of project 4.3 (in Year 1 as part of Research Aim 1) will include a desktop review of Tangaroa projects, in addition discussions with Tangaroa project leaders will help us (the research team for 4.3) build our understanding of the various applications and conceptualisations of kaitiakitanga and utilisation of mātauranga Māori by participants within those projects. The review of Phase I will inform us about the iwi, hapū, whanau learnings in terms of the processes, practices and principles that helped to build their capacities. We will also learn what factors they might need more support with for future collaborative approaches to marine and coastal management that enables and enhances kaitiakitanga alongside EBM. Further desktop analysis of cross-programme projects from Phase I such as CP1.1 and 1.2 will also be conducted and then inform the second phase of this project (Research Aim 2). They will provide insight into the synergies between EBM and kaitiakitanga and ways that we might be able to create transformative spaces for collaborative marine and coastal management.

M. LINKS TO & INTERDEPENDENCIES WITH PHASE II RESEARCH PROJECTS

1.1 Understanding ecological responses to cumulative effects. This project will provide vital information the cumulative effects on ecosystems, and offer insights into the avenues for ecological recovery. Our project will draw on this knowledge base and identify potential synergies between science and mātauranga Māori, and examine how kaitiaki practitioners draw on different types of knowledge.

1.2 Tools for incorporating ecological responses to cumulative effects. This project provides vital information about the scales and types of management actions that are required to address cumulative effects, the provide avenues for ecological recovery, and tools for environmental management action scenario testing. Our project will both draw on and add to these projects' knowledge bases by evaluating how the options may be put into practice (identifying potential synergies or mismatches between Māori tikanga and Western legal systems and mātauranga Māori and western scientific knowledge).

4.1 Treaty relationships and EBM. Understanding how the interests of whanau, hapū and iwi are provided for under management regimes, and the ways in which Treaty obligations are addressed within EBM is of critical importance to our project. We intend to work closely with this project (with our lead PI Taylor possessing FTE in 4.1) and draw on their research findings to ensure that our toolkit is in line with their Treaty-based recommendations and guidance.

4.2 Options for policy and legislative change to enable EBM across scales. This research investigates current gaps in policy and practice and evaluates options for policy and legislative changes to enhance uptake of EBM. Taylor has FTE in this project to collaborate on shared outputs related to complexities of scale, and policy and legislative guidance and advice.

T1 Awhi Mai Awhi Atu – enacting a Kaitiakitanga-based approach to EBM: This project provides an excellent study into contemporary kaitiakitanga practices at a local scale, which takes into account local socio-cultural and ecological contexts, which will provide useful information that can feed into the development of our project's (4.3) toolkit.

T2 Huataukina o hapū e: This research focuses on the implementation of the Nga Rohe Moana o Nga Hapu o Ngati Porou Act 2019. This Act aligns with the Takutai Moana Act and other relevant statutes and will provide learnings that can help to inform guidance for implementation of EBM in other rohe.

T3 Ngā Tohu o te Ao: This project will provide learnings on models and frameworks for reclaiming, restoring and applying traditional ecological knowledge to establish mātauranga Māori based marine ecological baselines.

N. VISION MĀTAURANGA (VM)

Vision mātauranga is central to this project. This project seeks to reposition mātauranga Māori as equal to western and other knowledges. It will do so by ensuring that the concept of Aotearoa-specific EBM, as characterised by the Challenge, adequately and appropriately provides for Māori ways of knowing and doing marine and coastal management and governance. Māori partners will

be integral to the research and will be resourced to engage throughout its duration. Processes and outputs will be mutually beneficial. The toolkit for Treaty-based collaborative marine and coastal management will enhance kaitiakitanga alongside EBM, ensuring an equal space for mātauranga and tikanga in co-management and co-governance.

The project will be maintaining ongoing kōrero with Theme 4.1 (Hikuora) and Theme 4.2 (Urlich), as well as the Tangaroa programme. We will seek to engage with relevant Challenge projects at a case study level. In line with Vision Mātauranga policy, this will help to ensure this project can provide guidance as to how to ensure effective, efficient, and equitable coastal and marine environmental management approaches can be designed and implemented across a diversity of settings and post-Treaty settlement contexts, wherein the interests and rights of Māori are safeguarded and mātauranga Māori is able to be expressed and incorporated into management and decision-making processes.

We regularly seek guidance from the Challenge leadership (Manahautū), Kaiārahi Māori research advisors within our respective institutions, and the Tangaroa programme about the most appropriate ways to engage with Māori. We sought advice from other Challenge Theme and project team leaders (Hikuora and Fisher) about how to engage with iwi given the relevance of our project 4.3 to the whole of Aotearoa New Zealand, and it was concluded that it would be the most sensible plan would be to start with and built on Taylor's long-standing working relationships with local iwi throughout coastal areas of the North Island. Taylor has engaged with iwi via face-to-face meetings, letter, and phone calls, and they have all expressed willingness to continue to work with us during project 4.3 (see Appendix 1). We intend to engage in meaningful and appropriate place-based research with local iwi, and also seek to include a wide range of locations to ensure that a range of different iwi perspectives as included.

Vision Mātauranga Deliverables:

Partnerships:

VM P1. We have had initial discussions with kaitiaki including Kaipara Uri and Hauraki iwi hapū and will leverage off existing relationships with Māori iwi, hapū, and kaitiaki practitioners. We intend to establish a Project Advisory Group comprised of some of our co-development partners (detailed in Section D). The Advisory Project will include Māori iwi/hapū representatives and representatives from government agencies and non-governmental organisations to ensure Māori are actively involved in co-developing and co-designing the project through the entire length of the project.

VM P2. We are leveraging off existing Taylor's relationships with Māori iwi, hapū and other groups involved in kaitiakitanga practices and are designing the project to be two-way capability building, with iwi, hapū, Māori informing our research and we intending to co-develop outputs that benefit iwi, hapū, Māori.

Distinctive Contribution:

VM D1. The majority of our case studies will be placed-based and be co-developed with iwi, hapū and/or Māori entities that will ensure that mātauranga Māori will contribute to the co-design and co-production of the project outputs. The outputs are designed to be of benefit across scales and contexts (refer Sections O and K) most notably the toolkit that will be designed to enable kaitiakitanga and mātauranga Māori alongside western EBM approaches.

Meaningful Outcomes:

VM M1. The project aligns with the long-term goals of Māori, in particular the emphasis on acknowledging mātauranga Māori and providing for its inclusion within and alongside western approaches to environmental management, and allowing for Māori interests and rights as kaitiaki to be recognised within the governance and management of coastal and marine environments.

O.   ENGAGEMENT REQUIRED WITH IWI AND STAKEHOLDERS

We are committed to ensuring this project is co-developed with iwi and stakeholders. The co-development, co-design, and co-production process will occur through the entirety of this project. The co-development process will help ensure that the research produced is of highest quality and impact (in terms of academic scholarship and end-users relevance) and maximise the potential benefits to Māori and stakeholders engaged in efforts to address marine and coastal environmental degradation.

Proposal co-development

To develop this project, we engaged with iwi and stakeholders from regional and local governments, and environmental management practitioners experienced in EBM. We also engaged with iwi and hapū partners, especially those with expertise in kaitiakitanga. Given the highly specialised and place-based nature of kaitiakitanga as well as the expertise of scientific knowledge related to EBM, this project requires specialists in mātuauranga Māori and EBM to provide strategic guidance and review. We approached Māori practitioners and representatives from government agencies involved in coastal management to be part of a Project Advisory Group. We emailed people who expressed interest in being involved in co-development and invited them to participate in email correspondence, telephone dialogue, and meetings (face-to-face or online) in late 2019. We took feedback from all participants in drafting the proposal.

> **Ongoing project development**
>
> The Advisory Group will be formed (made up of co-development partners), which will provide oversight and regular feedback about the research three times a year. Its members include representatives from key Crown agencies, iwi and hapū, Māori-owned enterprise (such as Moana New Zealand), and mana whenua and community-led initiatives (such as the Integrated Kaipara Harbour Management Group). The Advisory Group will also assist in disseminating findings of this project to diverse audiences.
>
> For instance the development of Output 10 (toolkit) is an example of our co-development process and will take the form of an iterative process involving a series of online and face-to-face meetings with our co-development partners (including iwi, hapū, and/or other Māori entities, and stakeholders) wherein they participate in co-designing, testing, evaluation, and finalising of the toolkit.
>
> We will adopt a variety of tools, mechanisms and prompts to facilitate engagement and communication with co-development with our research partners (which will be detailed in our engagement and co-development strategy see Output 3); in addition to online (virtual) meetings, face-to-face meetings will be conducted (dependent on safety considerations most notably related to COVID-19), and other methods, including potentially establishing a website or blog, as well as the use of innovative online engagement strategies (webinar see Output 11). These diverse strategies will facilitate engage with the project's co-development partners, end-users, and wider audiences.

P. PROJECT COMMUNICATIONS

The project will built and maintain meaningful relationships with iwi/hapū, government agencies and stakeholders throughout the project's entire lifetime. The research will be undertaken and findings disseminated in a manner that is clear and that is easily accessible for all end-users. As noted throughout this project, we are committed to ongoing co-development and co-design with iwi and stakeholders.

The project will produce a diversity of outputs, in addition to the toolkit, which will include academic manuscripts (peer-reviewed journal articles), reports (technical and non-technical reports), policy briefings, and fully accessible written or verbal communications. For every one academic piece of writing produced, we will aim to publish one non-academic writing or similar; such as an opinion piece for a newspaper or online magazine, podcast, blog, or webinar specifically focused on media that are fully accessible to Māori and stakeholders (i.e. not behind a pay-wall). We are dedicated to ensuring our research is disseminated to iwi (and all other end-users) in the most useful, effective, and equitable ways, and will use our co-development hui, meetings, and seminars to seek guidance as to what methods are the most appropriate for different target audiences. We will work with the Challenge communication teams to determine cross-posting of our outputs, and will determine if the establishment of a dedicated website from our project is the best approach, and develop a social media strategy (involving use of Facebook, Twitter, Instagram, and Linkedin) to use as a way to communicate our findings to wider audiences (as part of our engagement and co-design strategy see Output 3).

Q. RISK & MITIGATION

Risk: Hapū/iwi may wish to protect Intellectual and cultural property rights regarding their mātauranga and practices.
Mitigation: We will engage in open discussions early in the research about how knowledge will be gathered and used according to their aspirations. This will be done in a manner that suits iwi/hapū and with full respect given to iwi/hapū. Cultural safety agreements and/or terms of references will be established if and when necessary in line with the Landcare ethics toolkit and aspirations of our co-development partners.

Risk: Research and/or consultation fatigue.
Mitigation: We will work to reduce duplication and over-burdening iwi/hapū by coordinating our research with other projects in the Challenge. Time and expertise will be resourced where partners are not already resourced (i.e. by an employer or other funder) to participate.

Risk: Mismatched expectations in terms of what the project can deliver for iwi/ hapū.
Mitigation: We will ensure we co-develop and communicate clearly with research and other co-development partners about the scope of the research, the expected outputs and outcomes, what their involvement in the research entails, and what happens on project completion.

Risk: Mis-matched timeframes with some of the case studies and this project.
Mitigation: Ensure clear communication and transparency about how the project is tracking and what implications that may have in terms of mis-matched timeframes. We will not over-promise. Ensure to be practical and pragmatic.

R. CONSENTS & APPROVAL required to undertake research	We will obtain ethical approval to conduct research with human participants from Manaaki Whenua Landcare Research, as the research is led by this institution. Approval will be obtained prior to primary data collection. In addition to these formal requirements, scoping and ongoing engagement with iwi and other co-development partners will be guided by Te Ara Tika - Māori ethical framework (Hudson 2010). Te Ara Tika identifies progressive expectations of ethical research behaviour from minimum standards, to good practice and best practice, and provides useful guidance based on the following principles: • Whakapapa (genesis and purpose of your research) • Tika (validity of the research proposal) • Manaakitanga (cultural and social responsibility) • Mana (equity, justice and rights).

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