MBIE Pathways Response

This submission is from the Challenge Leadership Team of the Sustainable Seas National Science Challenge and draws specifically on our experience of implementing the Challenge. We have kept the submission short and would be happy to respond to any questions the submission may raise.

Research Priorities
Priorities Design What principles could be used to determine the scope and focus of national research Priorities?

- Partnership – We learnt early in the Challenge that achieving the partnership and involvement of Māori partners and stakeholders is critical to designing and developing a focus, scope and outputs that can be readily and usefully utilised by end-users. Involving them in setting our research priorities, approaches and proposed outcomes will ensure they are aligned to their aspirations and therefore addressing real-world needs.
- Equitable – Connected to the principle of partnership, we recognised the importance of developing a research strategy and approach that supported equity in terms of our funding criteria and support provided to Māori partners and stakeholders, and emerging researchers (particularly Māori researchers).
- Addressing long-term need – Our research partners have always noted concern that they could invest time, resources, and knowledge to our research, only to have the Challenge end. Expecting end-users to lead, partner and participate requires us to be able to clearly outline the long-term outcomes and goals, even if this means planning for them to be able to continue the work beyond the life of the research.
- Flexibility / Responsiveness – Having the ability to 'pivot' quickly to address unexpected issues or to take advantage of unplanned activities. In the Challenge we were able to pivot our strategy to enable us to respond to Covid-19 by looking at opportunities for doing marine tourism differently and more sustainably, both in environmental and economic terms.

Priority-setting process What principles should guide a national research Priority-setting process?

- The points made above are also relevant here.
- Connection to existing priorities - Ensuring that research priorities are connected to underlying, long-term real-world objectives such as Healthy Oceans 2050, which will allow for appropriate changes in research direction (ie. one of the strengths of Sustainable Seas has been a National Science Challenge structure that has a long-term mission as well as shorter term priority-driven objectives).

The strategy needs to support:

- Providing for the interests, aspirations, rights and responsibilities of those proposed to benefit or be impacted by the research. For example, in Sustainable Seas we had to recognise and provide for rights afforded to our end-users through fisheries legislation and regulation, as well as the Māori Fisheries and Aquacultures Settlements.
- Building on the strengths and successes of the NSCs, the priorities could be set and operationalised through a semi-autonomous and diverse governance group(s) that reflect the expectations of Māori partnership, and the implementation of long-term, transdisciplinary 'missions' aligned with the priorities.
- Approaching research in different and innovative ways and to consider non-traditional outputs of research as critical to success.
- A more creative and inclusive engagement with Māori partners and stakeholders at different relevant scales, including community groups and new non-sectoral or cross-sectoral environmental and social enterprise business organisations.
- Involvement of researchers from a wide range of organisations including those from outside the mainstream research institutions and community researchers (such as traditional knowledge holders). This approach has been critical to the success of Sustainable Seas with researchers from 65 organisations involved in our research. This supports bringing together "best teams" of research no matter their affiliation.
- Kaupapa Māori approaches to research as highlighted by the success of the Tangaroa programme within Sustainable Seas in enabling Māori and iwi-led priorities and projects.
- Processes and funds to support the initial relationship building and ongoing engagement with Māori partners and stakeholders.
- Processes and funds to support the co-development of research proposals and co-implementation of research with Māori partners and stakeholders. There have been significant lessons learned by the Challenge which can be used in the future.
- Ability to use non-competitive approaches to allocating research funding. In Sustainable Seas we widely used a negotiated approach to distributing funding. This increased the commitment of co-development partners to the co-development for proposal preparation knowing there was a significant probability of success.
- Measuring success based on outputs that lead to impact and delivery of priority outcomes, which will necessarily go beyond traditional academic outputs.
- Development of interdisciplinary research teams, including those with specific non-science skills necessary to support the communication and sharing of research outputs (eg. end-user engagement, policy and legal, etc). In our experience such teams are better able to develop robust research proposals to address critical issues for New Zealand and bring the connections and experience necessary to ensure their uptake and implementation.

Te Tiriti, mātauranga Māori and Māori aspirations
Engagement
How would you like to be engaged?

- Engagement with iwi, hapū, whanau, and Māori organisations in priority setting is critical. One lesson we learnt early on, was that because iwi, hapū, and Māori enterprise had not been substantially involved in the development of the Challenge objective, it was difficult to seek out their partnership and participation in our research. In Phase II of the Challenge, we instead ran workshops and had conversations to understand their needs and aspirations, and then to look at what the Challenge could offer and how it could contribute to supporting their achievement of those aspirations where they aligned with the Challenge objective.
- We also learnt lessons relevant to the way we communicate the Challenge objective and mission. Our Māori partners did not initially see significant relevance of the Challenge objective to their priorities, or in some cases, even felt conflicted with the Challenges stated priorities. This required us to reconsider our lens, approach and ultimately our messaging to ensure greater relevance and alignment to their priorities and values.
- Regular engagement with our partners (including across their organisations) has also been critical. At project level, our Māori partners are involved in the day-to-day work of the research. We are also engaging with leaders across relevant Māori enterprise and iwi organisations to keep them in touch and involved. This had to be specifically resourced both within projects, and by the Challenge more generally and has become more important as we get closer to completion of the Challenge.
- We have also recognised that this engagement must be resourced both financially and logistically (organising meetings, travel, accommodation, etc) from the outset. This has been particularly true for Sustainable Seas where we have iwi or Māori organisation led projects – where the project leaders do not work for traditional research organisations and can therefore not just absorb the cost of participating in workshops and developing ideas and proposals.

Mātauranga Māori
What are your thoughts on how to enable and protect mātauranga Māori in the research system?

- Sustainable Seas endorses the comments noted in the Rauika Māngai submission relevant to this section and can reflect Challenge examples. In Sustainable Seas from the Governance Group, Advisory Groups, Challenge leadership, project leadership to researchers (academic and mātauranga Māori), Māori leadership has been critical to enabling research approaches and relationships that ensure protection of mātauranga Māori. We have also been able to be flexible in the oversight and guidance given to projects about expectations and options for establishing the necessary consents, processes etc. For example, we have a project developing a digital repository for mātauranga Māori, and that repository has been designed and built by hapū and is based on learnings and insights from traditional Māori narratives.
- We also took on an approach to achieving our Challenge objective that privileges mātauranga Māori alongside science (rather than being incorporated one into the other) to create more innovative and equitable outcomes. This has enabled us to establish trusted partnerships with Māori, and by funding and supporting iwi or Māori enterprise led research, we have

recognised that mātauranga Māori can't and shouldn't be used without Māori leadership and direction.

- Recognising that ultimately those iwi, hapū or individuals providing knowledge into our research spaces own that knowledge, we have provided the ability for some research outputs to be held only by those knowledge providers. This means they make the decisions on what knowledge can be shared beyond their membership, and in what form that knowledge should be communicated and shared. Where they have held project outputs exclusively within the membership of the providers of the knowledge, we have instead worked with and supported them to share their knowledge themselves, or to summarise insights that can be valuable to others.

Regionally based Māori knowledge hubs
What are your thoughts on regionally based Māori knowledge hubs?

- Given the nature of our research in Sustainable Seas – much of it occurs in place, within communities with a range of interests in our work. We bring together researchers from around the country, and they bring relationships and connections from their home bases. This has worked well in supporting locally and regionally based research, and research partnerships.
- As noted elsewhere in this submission, another lesson from our work is that iwi, hapū and Whānau are capacity and capability stretched. They prioritise leading, partnering or participating in research that contributes to their aspirations and need. Iwi and hapū have rangatiratanga (authority) relevant to their rohe (or region of interest) so should have access to research and resources that can be brought to bear on those aspirations and regions. However, we have learnt that sporadic involvement and connection to research by these communities is inefficient and ineffective. Continuity and strong relationships are critical to achieving research outcomes that are enduring and beneficial. A regional hub approach could support this, and we have independent, regionally based Māori research organisations leading and involved in some of our projects because of their connections and existing capability.

Institutions

Institution design
How do we design collaborative, adaptive and agile research institutions that will serve current and future needs?

- There need to be processes in place (ie. funding mechanisms) that encourage and support institutions to be collaborative and enable the development of inter/transdisciplinary research teams. This has been critical to the success of the Challenge and will also be very important moving forward to enable the research community to build on the collaborations developed during the NSC's for the benefit of our Māori partners and stakeholders.
- Ensuring flexibility and adaptability within institutional frameworks to support changes in research direction as shorter-term research priorities shift in relation to what is required to meet longer term goals as social and environmental conditions change.

Role of institutions in workforce development?
How can institutions be designed to better support capability, skills and workforce development?

- Our experience indicates that institutions need to support a truly collaborative approach to research planning, proposal development and implementation. This includes specifically supporting a transdisciplinary approach to research which we have seen as being critical to successful implementation and application.
- Providing career paths and embedding early career research into research teams and potentially as co-leaders of research projects will support development of leadership skills and succession planning. We have done this successfully with several Challenge projects.
- Our current system produces far more PhDs than research jobs. There needs to be funding to support these researchers as they move through different stages in their careers, and to identify options both within the science system and beyond.

Institution design and Te Tiriti
How do we design Tiriti-enabled institutions?

- Our journey in Sustainable Seas has taught us of the importance of Tiriti-enabled institutions. The membership of Māori on our Governance Group, Kāhui Māori, and Independent Science Panel has been key from the outset. A more purposeful Tiriti representation has had to evolve through these groups, with initial decisions made about the make-up of the Governance Group made prior to discussions or partnerships with Māori being established.
- We have also supported and funded projects to establish their own 'puna mātauranga' who outline the necessary tikanga for the project (including the way knowledge is managed), guidance, knowledge, and connections to communities.
- We established a dedicated and equitably funded research programme of projects that are led by Māori (both researchers and iwi/hapū organisations and Māori enterprise) reflecting the need to enable Tiriti-based research approaches. This programme and the projects within it prioritise contributing to specifically Māori aspirations.
- Sustainable Seas also has a separate and dedicated Vision Mātauranga stream of funding that supports both research, as well as initiatives to support Māori researchers and their connections with each other and with their communities.
- In addition, in Phase II we also ensured there were specifically Māori focussed research questions across all themes of the Challenge leading to having Māori-led research beyond the dedicated programmes.
- We also recognised the need to specifically recognise Māori engagement expertise needs in our research funding criteria, and to fund Challenge level engagement expertise to ensure that engagement expectations weren't left to Māori researchers. Too often, Māori researchers are expected to 'double-task' by providing science as well as engagement expertise but are only remunerated for the research.
- All of this was enabled by the devolved approach and consequent authority the Challenges' have to be flexible and determine Tiriti-based approaches that work for them rather than following a more tightly managed range of conditions of contract. A further lesson from the Challenge is that this change in approach takes time, resources and leadership and needs to be purposefully planned across a dedicated timeframe.

- The Challenge recognised the need to move away from the idea of knowledge exchange (which appears, and can be, very transactional) to one of relational knowledge production and co-development and co-implementation of research which in turn supports co-development of knowledge. This approach takes time and funds but in the longer term provides better environmental and social outcomes and greater benefit to NZ Inc. Having end-users involved in the design and development of knowledge, tools, models, etc, helps ensure they have contributed both to ensuring they meet their needs and know how to apply them to achieve their aspirations.

- Sustainable Seas also built into project contracts the requirement for development of non-academic outputs from research that are tailored to Māori partners and stakeholders (this may involve the tailoring of outputs for several specific audiences).

- We have also seen the value of providing opportunities for researchers to work in situ with stakeholders (community, business, and government) and Māori partners to build relational knowledge and co-implement research.

- Experience within the Challenge has shown us that partnerships need to be built between researchers, Māori partners, and stakeholders to support the uptake of research results and the application of research findings.

- Data accessibility is a big issue. Each publicly funded program should have a data management plan and commitment to make data arising from the project available. This will save time/money and ensure that data can have multiple lives outside the original purpose. The data management and commitment to open access should be part of the contract and funded accordingly. Where data is sensitive for cultural, commercial, or other reasons, then the data management plan should clearly identify how that will be addressed.

Research workforce

Workforce and research Priorities
How should we include workforce considerations in the design of national research Priorities?

- In Sustainable Seas we have shown the value in purposefully supporting early career researchers. As a long-term programme (ie. 10 years) we have been able to support ECRs through career progression and to be able to take on more leadership responsibility and ultimately become ambassadors of our research within end-user organisations.

- Like other NSCs, we have experienced and been constrained by the limited pool of Māori capability in the sector. We have tried to address this by purposefully retaining as much of that talent as we could throughout the life of the Challenge with definite benefits not just to our research, but also to our ability to build trust-based relationships with iwi, hapū, and Māori commercial organisations. These relationships are critical to the uptake of our research outputs and ultimately achievement of the Challenge objective.

- A number of our Māori-led projects have also purposefully sought out Māori post-graduate and PhD students enabled by funding provisions and flexibility to do so.
- Tracking our researchers at all stages of their careers has also been important. There is often importance given to nurturing early career researchers but ultimately, they progress to 'mid' and 'mature' career phases. We have been able to nurture talent through that progression recognising that beyond the life of the Challenge, they will have experience and expertise that will extend the legacy of our work.