



Building an interconnected blue economy in place

Creating restorative surpluses

NZIER report to the Sustainable Seas National Science Challenge

March 2023

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Executive Summary

This report reviews the blue economy work in the Sustainable Seas Science National Science Challenge to date, discusses some relevant literature, and makes recommendations for the next stage of research. As part of that work, we reviewed Challenge work on Māori economics and considered how a blue economy would operate given that foundation. In addition, we connected formally and informally with key informants in Te Taihū.

We offer several conclusions:

- The blue economy depends on a healthy marine ecosystem, so achieving sustainable economic activity will involve ecosystems-based management.
- Managing the ecology and economic activity associated with the blue economy will require a synthesis of blue economy thinking and Te Ao Māori.
- Successful blue economy arrangements will be locally-based; they will vary by location.
- Blue economy as described by Sustainable Seas is aspirational, so can be usefully studied by researchers who are participant observers.
- Reciprocity will be an important principle in the blue economy, and should also be enacted by researchers in the present.

Our research identified three main gaps for further attention in the proposed *Creating Blue Economy in place* project:

1. considerable distance between current conditions and the aspirational blue economy for Aotearoa
2. lack of clarity on the motivational ‘spark’ or desire that would spur the development of a thriving, sustainable blue economy in localities
3. uncertainty over the institutional and organisational forms that would create and support commitment to the development of blue economy forms.

In response, and drawing on relevant theory discussed in this report, we propose a new project focused on three case studies, to be co-designed with stakeholders, based in action learning and the idea of reciprocity. Their purpose is to:

1. identify the conditions and character of the commitment to blue economy (BE) principles and practice in particular localities where developments are forging ahead
2. study and where appropriate contribute to the development of BE in place
3. support where appropriate the development of institutional and organisational structures and processes that can help develop and institutionalise BE innovations.

In this work, we are using the definition of a *blue economy* from the Challenge: *Marine activities that generate economic value and contribute positively to ecological, cultural and social wellbeing*.

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1 Introduction

The aim [of the Ko Ngā Moana Whakauka / Sustainable Seas National Science Challenge] is that the New Zealand marine environment is understood, cared for, and used wisely for the benefit of all, now and in the future. (MBIE, 2014)

Phases 1 and 2 of the Ko Ngā Moana Whakauka / Sustainable Seas Science Challenge have created a substantial reservoir of rich and productive resources for monitoring, governing, restoring and potentially developing the future marine environment of Aotearoa. As part of this, the work has highlighted the degraded character of many inshore marine environments and the subordinate role played by indigenous knowledge in the evaluation and governing of marine ecosystems.

Much of the Challenge's activities to date have had an investigative focus. Our review of the work suggests that as part of the next phase, more attention needs to be given to the commitment mechanisms required to mobilise people and organisations to embrace and enact a restorative and sustainable blue economy (BE), and more attention should be given to how economic and non-economic surpluses from the development of the Aotearoa future blue economy can be orchestrated, sustained and distributed. In this work, we are using the definition of BE from the Challenge: *Marine activities that generate economic value and contribute positively to ecological, cultural and social wellbeing.*

The aim of Phase 3 projects is to take the science developed in the earlier phases and, through local action and reflection, create repeatable practices that can help to restore marine ecosystems and generate sustainable economic and non-economic surpluses for future reinvestment. As a precursor to this action and impact phase, the project proposed below aims to identify through a set of case studies the necessary conditions, actions and practices that can, per the project name, *Create a Blue Economy in place.*

In this report we do several things:

- We review briefly some of the research in Sustainable Seas to create a foundation for discussion about the research and research gaps.
- We discuss multiple theories of value, commitment, management and surplus that we believe have relevance to the next steps in this Challenge.
- We discuss what we heard from stakeholders in a particular place, Te Taihū, about the blue economy.
- We present ideas for a new piece of research, first schematically and then in detail.

The aim is to move from the current research in the Challenge through lenses of science and stakeholder contributions into the next phase of research. The next phase has more focus on impact, place and synthesis across the blue economy (BE), ecosystems-based management (EBM) and Te Ao Māori (TAM). We believe the final proposal presented here meets those requirements.



2 Sustainable Seas research review

Any effort to review the breadth and depth of Sustainable Seas Science Challenge’s blue economy output is inevitably a simplification or even a trivialisaton of what is often ingenious, challenging and hard mahi by hundreds of participants, supporters, experts and scientists. However, in the context of this new project, where the aim is to create a blue economy in place that might develop new blue economy businesses and economic activities, our review is an effort to point out gaps in the existing work that if addressed might materialise further the intent and purpose of the Sustainable Seas Science Challenge. In support of this aim we have come to see the Challenge’s outputs from the BE strand in two groups and to identify two main gaps that this current project aims to address.

The first group of BE projects are those that offer tools by which marine businesses, regulatory agencies and policy makers might ‘better’ manage their commerical engagement with our ocean resources. Such projects offer more precise, more ecologically sensitive and mātauranga Māori infused methods and measurement tools that can reshape commerical relationships with the ocean resources.

An indicative example of the latter is the ‘Quantifying Seafloor Contact’ project undertaken between February 2021 and June 2022 for Fisheries Inshore NZ. Here the aim is to develop bottom contact sensors that collect data from common types of trawling gear, to trial modified gear and compare the data between the two types so as to minimise or reduce contact and disturbance of the seafloor. Researcher Oliver Wilson told a recent BE webinar¹ that the project creates an empirical base line so that fishers can make decisions around gear modifications they deem appropriate to balance economic activity with sustainable practices, not only minimising impact but also addressing food security into the future.²

As a second indicative project in this vein is ‘Kohunga Kutai’ where a species of Harakeke (native flax) is used as a biodegradable alternative to plastic rope to collect juvenile Kutai (mussel) for latter reseeding on mussel farming. The project is unique in that it offers a foundation for a locality-based aquaculture enterprise that strengthens traditional knowledge and the use of indigenous plant species.³ The project partners include iwi-led Whakatōhea Mussels, who recently established the country’s first open ocean mussel farming 8km offshore from Opitiki in the Eastern Bay of Plenty.⁴

A third indicative project in this vein is ‘Kia Tika Te Hī Ika: Exploring Fisheries Tikanga and Mātauranga’. This project by Māori cooperative fishing company, ICP Iwi Partners, aims to identify commercial opportunities that combine mātauranga Māori and conventional fishing practice. The project lead investigators, Irene Kereama-Royal and Maru Samuels, see the project as not only bringing cultural integrity to Māori fishing businesses and, potentially,

¹ See <https://www.sustainableseaschallenge.co.nz/tools-and-resources/te-au-o-te-moana-webinar-blue-economy/> for the full webinar.

² See <https://www.youtube.com/watch?v=qoDYWBg1G2M>

³ See <https://www.learnz.org.nz/sustainableseas221> for video tour of the project.

⁴ See <https://openocean.co.nz/pages/our-story> for details.

developing a global brand proposition built on indigenous tikanga and practice (Panton, 2021: 39).

Research from an earlier stage of Sustainable Seas also fits into this group. The project 'Conceptual system maps of "blue economy" activities' developed system maps for several economic activities (Connolly & Lewis, 2019). These were activities that could serve as the basis for a blue economy, and included wild fishing, aquaculture and eco-tourism. The work created systems diagrams with drivers and feedback loops. These diagrams can help both businesses and policy-makers understand how the desired outputs – for example, saleable fish – are produced by a system that includes both human and environmental activities.

Meanwhile the second group of BE outputs is those underpinned by more conventional commercial approaches. Here research work is directed at creating commodities from currently unused, undervalued or at-risk marine species. The key indicative projects here include 'Building a Seaweed Sector'⁵, a extensive piece of work by Cawthron scientists that offers a 'stocktake' of the commercial opportunities as well as the environmental, regulatory and Te Tiriti of Waitangi dimensions involved in farming indigenous Rimurimu (seaweed) species in Aotearoa. In a similar vein, there are BE projects that explore the commercial opportunities of extracting bioactive products from over abundant Pātangaroa (eleven arm starfish), from farming Pātiki Tōtara (yellow belly flounder) and developing Toheroa (surf clam) aquaculture. Wild populations of Toheroa, the sand dwelling shell fish found predominately in Te Tai Tokerau (Northland) have, despite the availability of sufficient quantities of spat (the larvae form of the shellfish), failed to recover from overfishing despite more than 50 years of prohibition.

Aotearoa has a successful history of domesticating marine species. The country's aquaculture industry has been built on the farming of native Green Lip mussel, introduced Chinook salmon, the once invasive Pacific (flat) oyster, and more recently on-land King Fish and native Pāua (abalone) farming are in development. As such the Toheroa, Pātiki Tōtara, Pātangaroa and Rimurimu projects follow a well-established path. This involves life cycle research and the design (or importation) of farming systems where growth rates are maximised, disease minimised and high value food, cosmetics and nutraceuticals products, for example, exploit the particular characteristics of these marine species as efficiently as possible.

Of course efforts to expand the aquaculture sector via Sustainable Seas BE projects that exploit abundant (Seastars), threatened (Toheroa) or under-used (seaweed and flat fish) species, are laudable. However, the projects focus strongly on the science involved and say little about *how to actually create blue economies in localities*. Particularly, the projects are unclear as to what might be the mobilising 'spark' or commitment mechanism involved and what organisational or institutional structures might carry such commitment from research project to scaled up blue economy enterprise.

The Rimurimu project, for example, identifies suitable species that could be farmed and the various obstacles to creating a seaweed sector. Yet it says little about the how to create seaweed businesses in localities. The Pātiki (flat fish) project proposal says it is investigating a 'new disruptive aquaculture business model for whānau-owned pātiki farms', but draws on

⁵ See <https://www.sustainableseaschallenge.co.nz/our-research/building-a-seaweed-economy/>

conventional value chain and business model canvas approaches to present that process. It identifies the challenging economic conditions and circumstances that confront whānau but does not address these challenges and nor how to create flourishing small-scale whānau-based aquaculture businesses beyond the research phase. Meanwhile the Toheroa project is focused on ‘generating knowledge to facilitate the development of a sustainable Toheroa aquaculture’. While it notes the economic challenges facing Te Tai Tokerau and the necessity of building aquaculture capability in the region, the project’s focus is strongly on filling the knowledge gaps around farming Toheroa. The Pātangaroa (sea stars) marine bioactives project meanwhile aims to create an economic opportunity that would cover the costs of managing the over-abundant Pātangaroa in Ōhiwa Harbour. The proposal highlights the commitment of local iwi and local authorities to reducing the Pātangaroa population to restore Ōhiwa harbour traditional kai moana. However the project’s focus is on developing a small-scale extraction process and a viable product that will then be presented to iwi. The claim is that this will financially incentivise iwi social, cultural and environmental management aspirations. But just how the project will transition from research to viable enterprise and how any initial commitment will be mobilised into a successful iwi-based cosmetics business isn’t clear.

Our intent here is not to question the political and ethical commitment of the researchers and communities involved in these BE projects. Rather it is to highlight a key gap in the proposals that needs further attention. But before we lay out our plans to address this gap we briefly set these BE projects alongside the wider group of Sustainable Seas Science Challenge projects, particularly those located under the Tangaroa strand.

The Sustainable Seas Science Challenge is organised into three main strands, Tangaroa, Ecosystem Based management (EBM) and Blue Economy. Naming the ‘Tangaroa’ strand after the Māori god of the ocean is no coincidence. In some versions of Māori mythology the moana existed before anything else (Salmond, 2020). We humans evolved from the sea and are thus geneologically related to all other sea creatures. The ocean, Tangaroa, is thus a progenitor of life and a living metaphysical being whose vitality, mana or abundance necessarily continues to bear on our own wellbeing and future as a species.

The Sustainable Seas Tangaroa strand embraces this understanding of the marine environment. Many of its projects draw on both mātauranga Māori and Western science with the core aim of restoring Tangaroa through improving our understanding, monitoring, protection and governance of marine environments. Such work is not based on human claims to a position of higher authority but on a *holistic interconnectness of people and environment*.⁶ From such a view point the value of marine environments goes well beyond conventional economic business measures such as dollars earned or jobs created. Marine environments also generate symbolic forms of value e.g. cultural, emotional and spiritual value. As such, efforts to restore, regenerate and reinvigorate depleted, polluted and overly exploited marine locales – to what might resemble their historical condition of abundance and vitality – creates not only material surpluses (jobs and livelihoods) but symbolic surpluses in the form of spiritual, cultural and aesthetic value. We can imagine for example how the restoration of local fisheries (scallops, mussel and oyster, for example), which may have

⁶ See <https://www.sustainableseaschallenge.co.nz/our-research/he-pou-tokomanawa-kaitiakitanga-in-practice-in-our-marine-environment/>

collapsed due to over-fishing, the loss of a key predator species or nutrient and sediment pollution, provides a source of reputational value for local people vis-à-vis others. This increased value could arise through both the nutritional value of the lost species as a source of food and spiritual value via a reconnection to place. The increased value is consistent with the idea of restored natural systems contributing larger amounts of value or *rent* to local people (Lewis, 2017).

The Challenge is also working to synthesise the BE strand and its Te Ao Māori work. Central to this effort has been the work of Mike, Reid, Rout and their team (Mika et al., 2019; Reid et al., 2019; Rout et al., 2019). They note the growing interest in the sustainable use of marine resources, focused on economic production and jobs while maintaining ecosystem health. They also note that this is a move beyond simple exploitation, taking fish from the sea and dumping waste back. However, they also describe how the BE concept should be expanded to incorporate indigenous knowledge, in this case mātauranga Māori, both in terms of understanding concepts and relationships but also based on Māori experience managing resources. As they show, bringing together TAM and BE can lead to sustainable creation of wellbeing for people, communities and the environment. They report:

Māori possess a world view that highlights the connectedness between human communities and marine ecosystems – with the primacy of whakapapa at the core of this understanding—and does not separate environmental, economic, social, and spiritual domains. In fact, the Māori world view and approach to managing the marine ecosystem and economy provides a number of commercial advantages to Māori businesses if they harness it appropriately (Rout et al., 2019, p. 67).

What comes out of the previous research is that BE is (as the original Sustainable Seas report on the topic notes⁷) less about new aquaculture businesses or sustainable fishing practices and more an ambition, aspiration or desire to reverse the degradation of our marine environment and enhance both the material and symbolic value that marine environments can generate. Consequently this new project, which aims to *Create a Blue Economy in Place*, becomes less about the success of new aquaculture businesses and more a work that investigates, identifies and promotes practices, actions, conditions and instances that help restore and enhance the material and symbolic values that flows from and to Tangaroa.

Before we present the framework and plan through which we propose to undertake this work, we briefly add some further explanatory notes to support our discussion of value and value surpluses at the core this BE project.

3 Theorising value and impacts

In reflecting on the BE work in the Challenge, we have had recourse to other research and frameworks. We believe that explicitly referencing this other work can provide a deeper understanding of the BE work to date and how it can be developed further. Three sets of theory and frameworks are especially useful:

⁷ See www.sustainableseaschallenge.co.nz/our-research/creating-value-from-a-blue-economy

- Mainstream economic approaches – the BE work, both in its theorising and its application, sets itself explicitly apart from or in opposition to the current economic system. Nevertheless, it also relies on many of the concepts and structures. Teasing out this complicated relationship provides some indication of how to get ‘there’ from ‘here’.
- Managerial approaches – the BE is proposing a new way of managing resources as a way to achieve difference outcomes. Several existing frameworks can be applied to managing resources, and the structures and uses of those frameworks may be instructive.
- Heterodox approaches – as a new idea that challenges the conventional economy, the BE highlights some of the difficulties and contradictions with the mainstream. However, other theorists have done the same, and some of their thinking can be useful for several key concepts, such as surplus, commodities, alienation and enjoyment. They notably include researchers working on Māori economic principles.

We expand on these three areas of theory below.

3.1 Mainstream economic approaches

One place to start in thinking about the BE is with standard tools from mainstream economics. These tools are useful for understanding how the current economy operates, and so can be helpful for thinking about how changes are likely to affect the economy. In addition, even where BE thinking is different from mainstream theory, it helps to understand the mainstream to deepen the understanding of the difference. Four ideas from mainstream economics are especially relevant: markets, utility maximisation, consumer choice, and regulation.

3.1.1 A few concepts

Markets

We start with markets because EBM and criticisms of the economy point to the failure of markets to deal with environmental impacts. While some recognise that markets are embedded in societies and environments (Gowdy & Erickson, 2005), the study of market economics has attempted to find universal laws that apply regardless of social and physical context (Heilbroner, 1986). Markets themselves are abstractions rather than actual marketplaces, but notionally they express the idea that there are sellers and buyers who meet to exchange products at agreed prices. In this description are several concepts that can be further explicated. First, staging transactions as between *sellers* and *buyers* does several things. It names two distinct groups of people. These are not people who are producing the things they consume, nor are they co-ordinated groups that include producers and consumers. The focus is on the transaction and not any other relationship between the two groups. It also names their interests: this group is interested in selling, which implies disposing of the product at a price that covers costs and a margin, while the other group is buying, which implies a need or a lack as well as an interest in a low price. Mostly, in the context of the BE, it implies a lack of coordination.

Second, in the transaction the ownership of the product passes from the seller to the buyer. This *product* is not without complication. It raises questions, such as what is it, and how can it



be described, and whose description matters? This is a topic in the literature on incomplete contracts: how can a *product* be described completely so that there is no dispute over what is meant, and then what happens if there is a dispute? The notion of ownership is also problematic. This issue has arisen with modern technology when consumers have found, for example, that companies control the books on their e-readers or the software on their smartphones. It also arises with knowledge, mātauranga Māori, socially constructed artefacts and genetic material.

Third, the *agreed price* has been discussed analytically and socially. Analytically, sellers and buyers have a range of acceptable prices, and the agreed price will be within those two ranges. It should also completely compensate the seller for production costs and be a better use of money for the buyer than other uses. However, prices are also partly determined by market structure as well as social factors. Finally, putting markets at the centre of the economy also puts exchange value at the centre rather than use value, utility or satisfaction, for, as Robinson noted, *It is the desire, not the satisfaction, that is measured by price* (Robinson, 1964, p. 49).

One approach to dealing with environmental damage from overproduction and overconsumption is to think of them as evidence of a market failure. So, forcing sellers and buyers to pay the *real costs* associated with production and consumption will cause them to reduce the amount of products they transact until the economy is within its environmental limits. This is the logic of using carbon pricing to reduce greenhouse gas emissions. The approach assumes that there is an entity or institution that is capable of levying this extra charge, because the charge is artificially created rather than a physical necessity of production. Once it is agreed that there is one type of institution with the power to shift the market equilibrium, then it is a small step to the work of Nobel prize winning political scientist Ostrom (1990)⁸ on other types of institutions that societies have created to limit the effects of market failures such as over-fishing. These institutions exist and continue to have power because they are legitimate according to the people involved. Indeed, Challenge research has shown how Māori have alternative perspectives and institutions that are capable of regulating the blue economy (Rout et al., 2019). Important questions are thus, how do these institutions arise or how are they created, and how do they maintain participation, accountability and legitimacy?

Utility maximisation

Mainstream economics is utilitarian: the aim is maximum utility, measured by producer and consumer surplus. The approach has led to a host of issues around measuring utility and interpersonal comparisons of utility (Arrow, 1950; Deaton & Muellbauer, 1980; Heilbroner, 1986; Robinson, 1964), which in the main have not been fully resolved. Economics continues nonetheless.

Regardless, the utility-maximisation idea is powerful. It provides a way to find a solution to mathematical equations describing a market or the economy. The solution isn't based on what people might be able to negotiate or might decide amongst themselves to do. It is a unique solution to a set of equations that maximises a particular quantity that itself can be described in an equation. As a result, any movement away from that point – any tampering

⁸ Ostrom, Elinor. *Governing the commons: The evolution of institutions for collective action*. Cambridge university press, 1990.

with this unique solution in order to promote ecosystems or Te Ao Māori – looks to economics like it is incurring costs. We could be at the optimum, but now we are somewhere else, and the difference is a cost to the economy and the people in it.

Consumer choice

Furthermore, the foundation of utility maximisation is individual freedom. This harks back to Mill's essay *On Liberty*. He asserted that there was only one principle that should *govern absolutely the dealings of society with the individual* (Commins & Linscott, 1947, p. 144): in the part of one's conduct that concerns only oneself and not others, *the individual is sovereign* (Commins & Linscott, 1947, p. 145). Furthermore, Mill bases this argument in utilitarianism: *I forego any advantage which could be derived to my argument from the idea of abstract right, as a thing independent of utility. I regard utility as the ultimate appeal on all ethical questions* (Commins & Linscott, 1947, pp. 145–146). In economics, this idea underpins the notion of consumer choice. Consumers should be free to choose the products they want to buy, because by so doing they are maximising their own utility and therefore the welfare of the whole society (Deaton & Muellbauer, 1980). They should not be constrained in their choices unless they harm other people – unless they cause *negative externalities*.

3.1.2 Implications for the blue economy

Mainstream economics has a particular way of thinking about economic activity that is largely consistent and complete. Re-thinking economics to theorise the BE is therefore challenging. Some implications are as follows:

- Mainstream economics recognises that markets can lead to negative externalities and market failures. The solutions are to provide information, create new institutions and/or define new ownership rights. A challenge for BE theory is to position itself in relation to these solutions. It could be the new institution that provides for representation from multiple stakeholders in order to produce decisions that meet their needs. That approach leaves the current management of the economy intact. Alternatively, if BE theory is concerned with re-thinking the relationship of people to resources, then it potentially has much more to say about the whole economic system. BE theory could explain how integrating EBM into the economy produces better outcomes from a holistic perspective.
- Utility maximisation provides a powerful analytical tool and philosophical argument for mainstream economics. It identifies a level of output and a set of production and consumption activities that are considered *the best we can do* given a set of assumptions. BE theory should consider how it is bringing into question that approach. It could take issue with utilitarianism more generally, which is a tenable philosophical position. It could accept the framework, but point to the ways in which it is practically limited, e.g., the difficulties with weighing up intergenerational concerns. It could advocate for extending utilitarianism to incorporate more information, or other species, or non-linear impacts, which are all ways to bring in concerns about ecosystems and climate. The challenge is to articulate how a different approach to the BE either leads to more wellbeing for more people, or how that is not the right metric.



- The issue of consumer choice has similar implications. Consumer choice is the expression of personal liberty in a market economy. The challenge for BE theory is to explain how the limits that it places on economic activity are not just limits on individual liberty. There are several ways to approach this challenge. One is to start from the position that all institutions – markets included – are an imposition on individual liberty but they are necessary for society to function (Freud, 1930). Another is to note that, in practical terms, consumer choice is already directed and constructed in the economy (Galbraith, 1967). Any directing and constructing for BE purposes would thus be a change of goals rather than a change of methods. It could also be argued that consumer choice is a particular way of distributing liberty that depends on one’s earning power, and that more expansive versions of liberty as citizens, individuals and humans are available (Marcuse, 1964). Yet another approach is to note that individuals are members of collectives, so that methodological individualism – the basis for consumer choice theory – is insufficient to assess the totality of economic impacts. Regardless of the approach, the challenge is for BE theory to articulate the benefits of an integrated perspective.

Each of these theoretical issues has been presented in isolation, but they are parts of a theoretical and disciplinary structure that fit together. For mainstream economics, markets are a mechanism for search and information that allows the possibility of consumer choice so that individuals can maximise their utility and thereby maximise social wellbeing. Calling into question one part of that structure has implications for the rest of it. Furthermore, the challenges from new thinking about the BE exist whether they are stated or not. Not stating or addressing a particular challenge does not make it disappear. Instead, it appears as a lacuna or gap in BE theory, a potential weak point that can bring down its theoretical edifice. This report argues that it would be better to identify those lacunae and investigate them through further research.

3.2 Managerial approaches

Management – of activities, businesses and resources – is fundamentally about ensuring that certain things happen. Successful management requires at least two things: a direction or destination, and a way to measure progress. Frameworks of targets and indicators have been developed to provide these destinations and metrics to managers in the public and private sectors. When accepted, these frameworks represent consensus thinking on what we should be managing. They are therefore useful to BE work because they concretise ideals about the economy, society and environment. They indicate both what is considered *good* and also where BE thinking might be out of step with the general consensus that these frameworks represent.

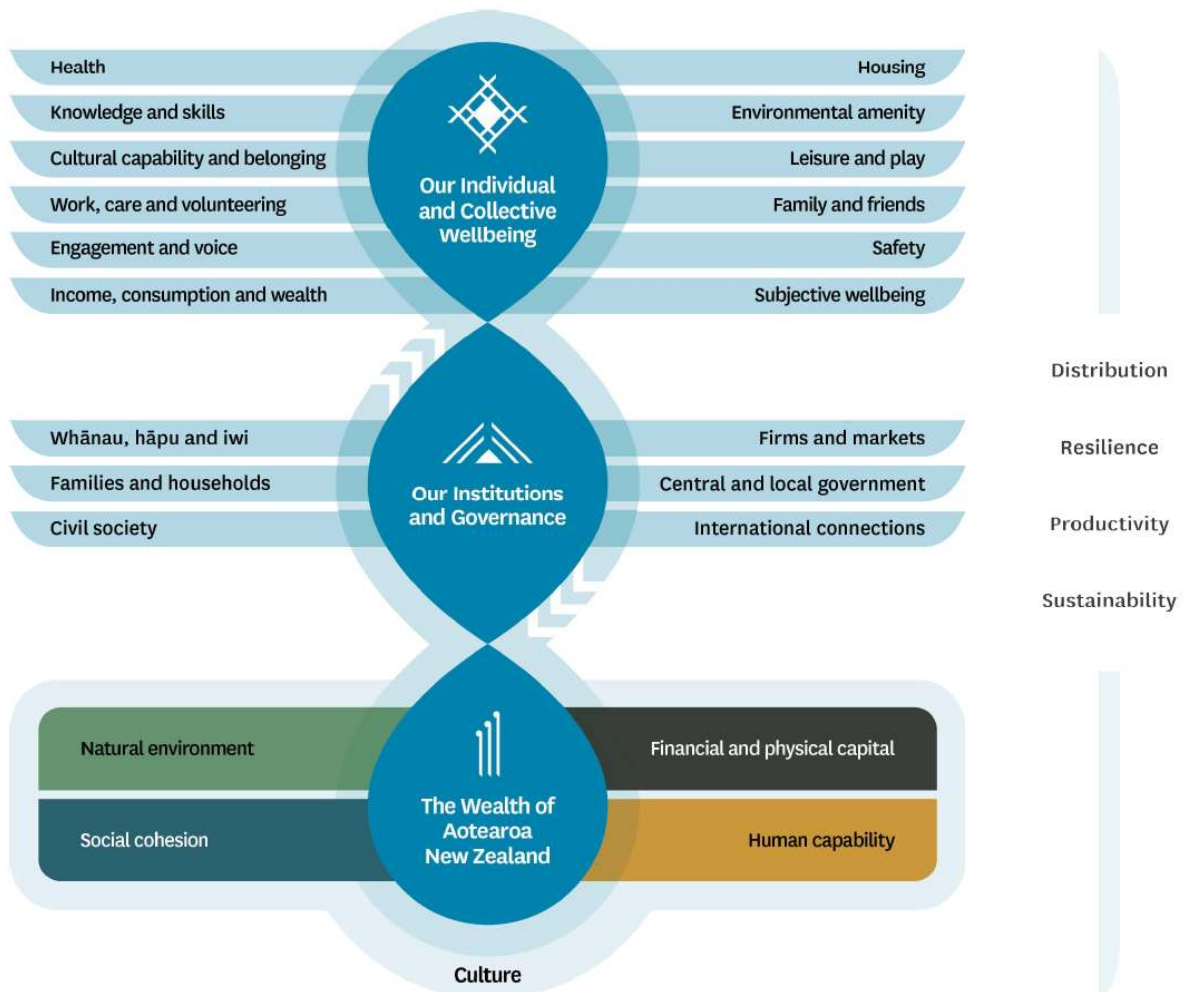
A few frameworks have achieved a measure of general acceptance. A brief look at them can provide guidance for BE research.

3.2.1 Living Standards Framework

The Living Standards Framework (LSF) was developed over many years by the New Zealand Treasury, and the current framework is presented in Figure 1. It was identified in BE research as a possible support for systems thinking (Connolly & Lewis, 2019). It includes 12 dimensions

of wellbeing for New Zealanders, including health, knowledge, leisure, family and more. These wellbeings are ultimately produced from the stock of wealth of New Zealanders, and the framework has four types of wealth: natural environment, social cohesion, financial and physical capital, and human capability. Between the sources of wealth and their contributions to wellbeing are the institutional arrangements of society, government and the economy. These are families and whānau, businesses, government agencies and more. This institutional layer recognises that the wellbeing is in part determined by resource endowments, but also by the ways that we organise the use of those endowments.

Figure 1 The Treasury’s Living Standards Framework



Source: The Treasury (2021)

There are some very useful aspects to the LSF. One is that it connects activities with policy: to the extent that the LSF is driving policy decisions, demonstrating how the BE contributes to wellbeing by using the LSF makes it recognisable or legible for government agencies. The LSF also recognises many things that contribute to wellbeing beyond the market economy. The wider benefits of the blue economy in terms of restoring ecosystems and generating connected communities have places in the framework and a way to articulate their benefits.



The LSF is also relatively flat, so that ecosystems, communities, and financial wealth are all on the same level; this is not a framework that consciously prioritises economic activity.

However, there are limits to the use of the LSF in supporting the blue economy. Chief among those limits is that the use of the LSF in government decision-making is unclear. Although the framework has been around for years, it is difficult to identify specific decisions where the use of the LSF generated a different decision than an older-style cost-benefit analysis. One reason for this could be that the framework is dimensionless: there is no size or weight given to any of the elements. As a result, it is impossible to know from the framework whether one unit of *engagement and voice* is equal to one unit of *housing*, or there is some other rate of exchange between them. The framework itself isn't a Decision Support Tool (DST) in the sense of something that helps priorities, determine trade-offs and estimate relative costs. When viewed through the lens of the *multiple drivers framework* (Kaye-Blake et al., 2014), the LSF has the potential to prioritise *political drivers* over *institutional* or *use drivers* because it is as good as a rationalisation tool as it is a decision tool.

3.2.2 Sustainable Development Goals

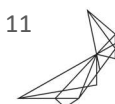
The Sustainable Development Goals (SDG) were agreed by the United Nations after the success of the Millennium Goals. They provided a new set of global aims for a healthier, more equitable, more sustainable society. As shown in Figure 2, they are 17 high-level aspirations that have been agreed by most countries in the world. They include goals like *No Poverty*, *Zero Hunger*, and *Gender Equality*. They also include Goals that are areas of focus, such as *Life Below Water* and *Climate Action*.

Figure 2 United Nations Sustainable Development Goals



Source: <https://www.un.org/sustainabledevelopment/news/communications-material/>

The framework has been operationalised to some extent. The 17 Goals have been divided into 169 Targets, which provide more specificity about what it would mean to achieve the



Goals. These Targets have been further converted into Indicators. The initiative Our World in Date (<https://ourworldindata.org/>) has created an SDG Tracker (<https://sdg-tracker.org>) that lists 232 unique indicators that can measure progress towards Indicators and Goals. The situation is further complicated by the fact that individual nations were encouraged to set their own metrics for achievement of the Targets and Goals, so the Indicators apply unevenly across the globe.

One key benefit of this framework for BE is SDG 14, *Life Below Water*. This Goal provides a place for concerns about the marine environment to be recognised and seek to same level of importance as the other Goals. Another benefit is that the SDGs are an international framework and the New Zealand government needs to report against it periodically. This obligation provides a way to keep BE concerns visible and connected to international trends. Finally, the focus of the BE on both economic production and environmental restoration resonates with the SDGs, where economic, social and environment concerns are all considered important.

The SDGs are less useful for BE work for a couple of reasons. One is that cultural concerns, especially indigenous society and culture, are not as visible in the framework as the economy and the environment. Thus, the framework does not place any special emphasis on grounding the BE in Te Ao Māori or mātauranga Māori; that just becomes one way of many to achieve the targets. Another issue is the size and complexity of the framework. With the large number of Goal, Targets and Indicators, as well as the focus on a *realpolitik* approach to gaining the co-operation of existing governments regardless of their performance on measures of equity and justice, there is little to bind governments to particular actions or hold them accountable. They, in effect, set their own KPIs (key performance indicators) and then self-certify their achievements. A BE initiative could encounter difficulties gaining purchase or traction to influence policy one way or another, because all policies are likely to have some benefit in this framework.

3.2.3 Doughnut economics

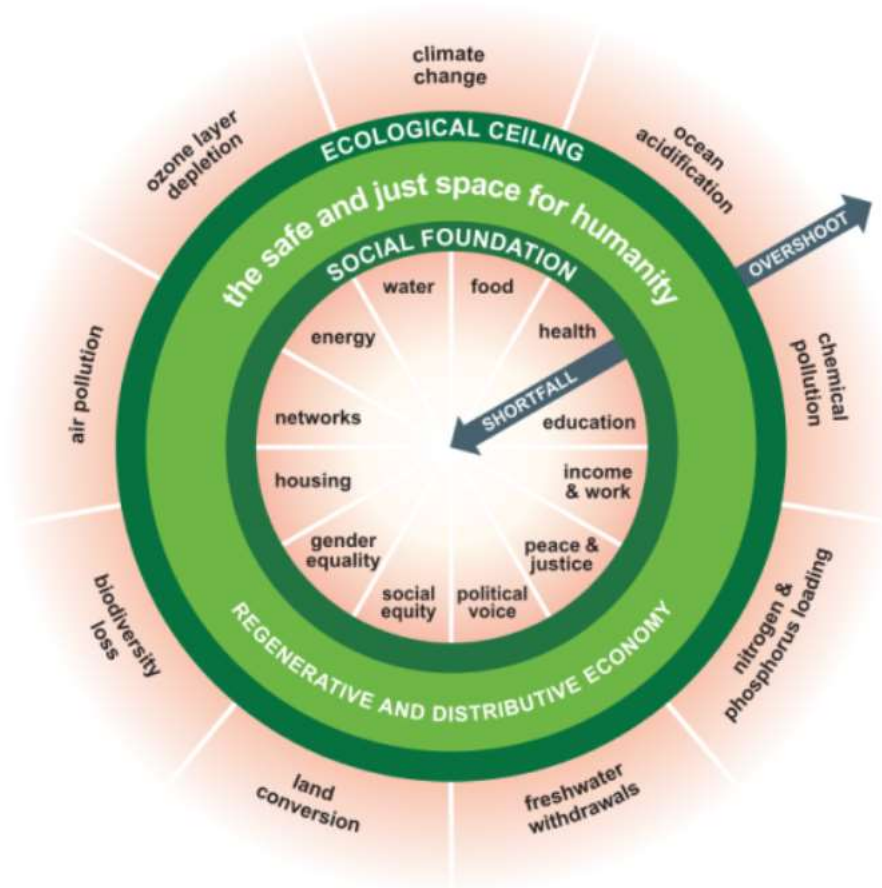
Doughnut economics is a concept and book by Raworth, an economist from the United Kingdom. Although her website calls her *a renegade economist* (www.kateraworth.com/about/), the basic concept of living within planetary limits has been developed over decades. The *Limits to Growth* report was published in 1972 and discussed the implications of large population growth on a finite planet. Concepts and theories on ecological economics and its implications for Solow-style growth were worked out by earlier researchers, such as Herman Daly and Nicholas Georgescu-Roegen. Further in the past, Thomas Malthus in the 18th century worried about the ability of agricultural production to keep up with a growing population.

Raworth's idea is depicted in Figure 3. It suggests that there are multiple physical systems that the economy needs to consider, such as the ozone layer, climate change and ocean acidification. For each of these systems, there is an outer threshold beyond which the economy is not sustainable. The aim of policy and planning should be to maintain society and the economy below these thresholds. In addition, there is a minimum level, a floor, that represents the minimum level of support for acceptable living standards. Humans need food, clothing and shelter, as well as community and purpose, and they depend on these physical



systems for those services. By arranging these maximum and minimum thresholds in a circle, Raworth creates a doughnut that describes the space of sustainable and acceptable human existence.

Figure 3 The Doughnut Economics framework



Source: <https://doughnuteconomics.org/about-doughnut-economics>

There are several useful aspects to the framework. One is that it is intuitively appealing and has gained international recognition, including in New Zealand. There is even a Doughnut Economics Advocates New Zealand organisation dedicated to sharing Raworth's insights. The framework therefore provides a ready-made vehicle for talking about the concept of production within limits, or the dual problem of the BE with Ecosystem-Based Management. A second useful aspect is that the BE can find its place in the framework. In Figure 3, the BE touches on the physical systems of ocean acidification, biodiversity loss and climate change, as well as possibly freshwater withdrawals and land conversion. It also concerns most of the social system on the inner ring of the framework. A third benefit of the framework is that it has been used to quantify impacts and thresholds. Because the framework is similar to a spider web diagram or radar plot, it can be used to quantify impacts vis-à-vis thresholds for



each of the systems. It can answer questions about how much impact we are having and how much change is required.

The BE could struggle in a couple of ways with the framework. One issue is that there isn't one single 'doughnut': the presentation of the framework seems to vary. Figure 3 is taken from Raworth's website, while a presentation by Raworth to the Ministry of Business, Innovation and Employment (MBIE) has a different set of physical systems: nitrogen, blue water, land-use change, ecological footprint, material footprint, CO₂ emissions and phosphorus.⁹ Thus, the importance of a particular project or place could depend on which version of the framework is used and its systems and indicators. The prioritisation and support for BE work could be unstable as a result. The second issue for Aotearoa New Zealand is that Te Ao Māori – or indigenous issues more generally – doesn't have a clear place in the framework. Relying on this framework, developed in the UK, has the potential to downgrade efforts to ground the BE in Te Ao Māori.¹⁰

3.2.4 Summary of managerial approaches

These frameworks are all potentially ways of managing behaviours and activities along a path that is economically productive, beneficial for the environment, and cognisant of Te Ao Māori. They tell the Challenge what is important to decision-makers, both in the public and private sectors. They specify the dimensions that are included in the framework, which become the things that are measured and managed. The frameworks also provide tools for talking about the market economy within its social, cultural and environmental contexts. For managing, measuring and communicating, all the frameworks could be useful.

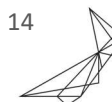
There are limits to their usefulness, however. For example, for each framework there are examples of their application to specific case studies. However, it isn't clear that they have achieved wide acceptance or an ability to influence business and resource management on a large scale. Thus, BE work could look to them for some indication of what is important but probably still needs to forge its own economic and environmental pathways. Also, they are essentially silent on social systems or deeper structures that determine economic options and outcomes. There is no mechanism or model within them that describes the processes that convert resources into wellbeing. As a result, they are also silent on how BE work could change these processes.

3.3 Heterodox approaches

We also thought it would be useful to discuss heterodox approaches to the economy and society. The BE work is clearly an attempt to challenge the economic status quo, in at least three ways. One, the current economic focus on production has led to over-use of resources and a decline in ecosystem health. The proposed response is EBM. Two, the economic system is bound up in personal ownership of resources and short-term thinking, leading to an extractive approach to resources. Part of the proposed response is Kaitiakitanga based in Te Ao Māori. Third, the individualistic approach to ownership of resources and production has

⁹ Kate Raworth. (no date). Doughnut Economics: seven ways to think like a 21st-century economist. MBIE website: <https://www.mbie.govt.nz/dmsdocument/5722-doughnut-economics-kate-raworth>.

¹⁰ However, there has been work to reconsider doughnut economics from a Māori perspective. There is a discussion on the Doughnut Economics website, here: <https://doughnuteconomics.org/stories/24>.



concentrated the benefits of production in the hands of owners and neglected the wider community impacts, including various amenity and social values. The proposed solution is a BE approach that takes into account a wider range of stakeholders and their values to reorient economic activity. However, some of the assumptions underpinning BE need further discussion.

In the Challenge's key report on BE, Lewis, et al. (2020) argue for the concept of *geographical rent* as the basis for a *just transitions* to a BE. From a theoretical perspective *rent* is, as they note, what is left over after the costs of production are distributed. Thus rent is understood as a return to the unique and rare resources that are the basis of the profitable economic activities, including the returns to a particular place (Lewis, 2017). They argue however that how and to whom such rents are distributed – given their basis in unique and rare natural resources and processes – has been largely missing from Aotearoa economic management debates. From their perspective, the notion of geographical rent makes it possible to allocate surpluses to localities and local communities where the rare and unique natural processes are found, rather than treating such returns as residual income that ultimately flow to the owners of capital. They suggest, for example, that allocating consents for the economic use of marine space to local community ownership provides a basis for community investment in marine activities. And further to this such a move would give communities *responsibilities and financial opportunities to develop livelihood and/or environmental/restorative projects* (Lewis et al., 2020, p. 113). The next step for the proposed research is to investigate how these changes could happen in practice in communities in Aotearoa.

Firstly, contemporary debate on the distribution of economic rents highlights how such allocations are ultimately based on the bargaining power of particular actors involved (Coff, 2010) and in particular the inequities and privilege of key actors (managers, owners etc) based on their access to information, networks and resources. This observation raises the question of how to address the difficult political challenge of how to build the political momentum and sophistication needed to claim geographical rents.

Secondly, the aspiration to create a blue economy raises questions about how it contends with or develops alongside the capitalist economy. The first aspect is around surplus. The aim of BE work is to explore how a surplus, based on rents from unique resources, can be re-routed from traditional destinations – owners and investors – toward new destinations such as the marine ecosystem and coastal communities (Lewis, 2017; Lewis et al., 2020). Drawing from the heterodox economics discussion, we can note that the very act of producing surpluses involves exploitation. Particularly, labour creates surpluses but labour is not compensated fully for the value it creates. In other words, creating surpluses involves the intention to exploit labour, including animal and human labour. This raises the puzzling question of how to build a restorative blue economy when such an economy is based on the exploitation of human and animal labour.

The counter-argument is that labour alone does not produce value. It needs resources, which have been labelled as various forms of capital: physical capital, financial capital, human capital, and natural capital. However, describing production as including these resources raises the question of how output can best be shared among the different resources. What is a *fair* return to each one? Trying to answer this question goes down at least two pathways. One pathway is about measuring the contribution of each factor of production. For example,



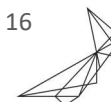
it is asserted that the economy is a wholly-owned subsidiary of the environment, with the implication that the economy is entirely reliant on the natural environment. One possible conclusion is that the fair return to natural capital is 100 percent of output. However, that leaves nothing to sustain people. Clearly, some allocation needs to be made. The standard economic approach is to consider the marginal contribution of each factor of production: how much does production increase with one additional unit of the input? This approach, however, has been criticised for undervaluing the natural environment and not recognising the limits to substituting one resource (financial capital) for another (natural capital).

A second pathway tries to grapple with the recursive and historical nature of these capitals. Again from a heterodox perspective, capital exists in the present because labour was not fully compensated in the past. Financial and physical capital thus embody past exploitation. Treating them as non-labour resources is begging the question of just what, apart from the labour, originally created such capital. The argument can be extended to natural capital as well. Natural capital, when treated as a separate resource, has an existence that is distinct from and pre-exists any labour input. However, any place where people have lived, there is no raw natural capital; labour has already been applied and produced the landscapes we currently experience. Assuming that there exists an actual as opposed to an abstract natural capital is similar to the theories of wilderness and waste land that were used to dispossess indigenous people of the lands they managed (Wood, 2017). It ignores that any actually existing landscape – or any landscape that European settlers encountered in the past few hundred years – is already the product of human intervention (Cronon, 2003), i.e., labour.

These two pathways for assigning a fair value for the returns to resources, and thereby determine the size of the surplus, are both unsatisfactory. The one ends up in measurement issues and does not respond to the key insight of ecological economics: a finite capacity for trading off natural capital versus other resources. The other becomes stuck in a problem of infinite regress and abstract definition: what is natural and what exists in the absence of humans? These problems point to a potential resolution: to treat value as socially constructed, and therefore treat surplus as a social construction, and invest in ecosystem-based management that which is necessary for the ecosystem.

The second question raised by the distance between the aspiration of BE and the actual capitalist economy is about dealing with the people involved in BE. The material from the Sustainable Seas Challenge focuses on reintegrating people into processes and landscapes. In particular, it envisages a discursive process in which a wide range of stakeholders are able to interact and make collective community-based decisions. However, this is problematic. What heterodox economics shows us is that modern production means that commodities are the mechanism that binds society together, and that people relate to each other through the goods and services they buy and/or produce rather than directly with each other. This relationship, called *commodity fetishism*, allows the large-scale coordination of a modern economy.

However, communities for the most part do not figure in capitalist relations. They do not bargain over unique resources. Rather they are *schooled, conditioned* and organised around the ground rules of market-based exploitation. Exploitation is the orchestrated effect of raft of institutionalised rules and practices operating at various scales that materially exploit and reshape marine resources in localities, organisations, the state and strategically across



economies. Thus attempts to reshape our relationship to the moana, and create BE relations, require political movements, contention and struggle that tackles institutionalised rules and practices.

Other heterodox explanatory traditions go further and regard direct inter-personal connection as difficult and traumatic, as we are reliant on social systems such as economic processes to be able to relate to each other (Freud, 1930; Schroeder, 2004). Such explanations suggest that an aspirational BE featuring local ownership and restorative investment would become an endless repetitive search for restorative 'blue economy' goods and services that at first appear to address marine environment degradation but which have the effect of intensifying the tension and disconnection (and thus creating exhaustion) in relationships between us and between us and the biophysical marine environment. Thus, we would argue that any insistence on direct, personal interaction as the basis for building community ownership of rare and unique marine resources, as a foundation for economic activity and decision-making around the BE, is out of step with industrialised society and social systems more generally. Given these points, how might we proceed with a project that aims to *Create Blue Economy in place*? What kinds of interventions and 'experiments' and research approaches might support such an aim?

One response would be for this project to help generate and support locality-based social movements that aim to reshape the entrenched distributive (exploitative) rules, practices and relations. Part of such work would involve supporting interventions that re-route our impulse to shop for blue economy solutions (Vanheule, 2016, p. 13) in response to our discontent with the state of the marine environment. Instead, we would support actions to question, challenge and potentially protest our existing relations, and generate and support new truths about our relations to the sea/ocean. Such an approach necessarily involves establishing a set of meanings that have the power to forbid, to negate, to say 'no' to continued marine degradation and signify our genealogical and existential relationship with the ocean.

While Lewis, et al. (2020) take a different explanatory route, they suggest, as we do, that empowering and privileging Māori governance of the moana based on principles of kaitiakitanga will likely be central to such movements and to re-shaping our underlying material and symbolic relations with the ocean. Examples of how Māori governance is already financially successful – the whai rawa component – and good for the environment – the kaitiakitanga component – have been collected by Challenge researchers (Mika et al., 2019). They demonstrate that a values-led approach can be a successful model. Also, the discussion of Māori approaches to governance highlights the place-based or spatial specific nature of management and actions. The discussion of Ngāi Tahu Seafood states that the iwi has over 165 customary protected areas managed by a specialised team that works to match the specific management tool to what they are trying to protect in each place (Mika et al., 2019).

3.4 Creating BE social movements in place

Social science researchers widely agree that social movements are the seedbeds of much widescale organisational change in Western economies (Davis et al., 2005). Studies of social movements suggest that the process of forming sustainable social and economic identities



that generate novel, innovative and contending responses to existing conditions revolve around a set of particular emotional exchanges and types of framing narratives.

The research suggests that movement commitment involves pleasurable activities that exoticise opposition (Creed et al., 2010; Prichard & Creed, 2021). Such activities help people take up the position of the protagonist which necessarily involves the attribution of an antagonistic identity to an-other. For example, BE work that names the historically exploitative inshore fishing industry as the culprit in environmental degradation enables that dynamic. Secondly, in order to recognise and stabilise the protagonist-antagonist couplet new and novel forms of physical experience are often required, e.g., contentious forms of conduct, dress, food, music. Without going into detail it can be noted that taking up protagonist identities necessarily draws on often unspoken culture and unconscious memories of conflict with significant others.

However, to be successful, social movements must also provide particular narrative sequences that offer the protagonist a *redemptive movement* away from what the religious scholar William James referred to as our constantly felt experience of falling short. Redemptive narrative sequences take various forms including atonement, emancipation, recovery or upward mobility. It is these that create a centre of 'energy' or desire that could, once generated, create the animating force for, in our case, restoring and developing restorative blue economies in place. But what routines, practices and narratives would be needed to underwrite such local movements? And how can such practices be organised?

It is important to note here that such practices and narratives are, as our discussion below highlights, co-created with stakeholder groups as part of the proposed engagement processes with, for example iwi, NGOs and businesses. As such, the suggestions below are indicative rather than prescriptive. Also we are not in any way suggesting that such work is not currently underway. We have close connections to a string of actors working in businesses, iwi, NGOs, science and local government (outlined in our discussion of our research conversations below), that are based on building local marine social movements in place. The purpose of our proposed engagement is however to expand the scale, scope and reach of such efforts by harnessing:

- **Contending novel exotic pleasurable marine activities:** In order to create protagonist identities and frame up restorative narratives that can generate action - novel actions are required. For example this might include creating experimental ocean mud housing or clothing and thus speak to the the experience of struggling shellfish populations. Alongside contending action, restorative exotic activities might be developed such as artificial reef sculpture building (restoring) and ecosystem-based fish and shellfish population restoration (putting mussels back in the ocean).
- **Redemptive narrative sequence:** Localised restorative narratives meanwhile might include 'marine love' programmes such as 'Moana Ora, Tangata Ora' or 'Kia Arohata Tātou i te Moana'. Such narratives highlight the possibility of recovery, abundance, a stronger emotional or spiritual connection to one's ocean and help create the desire/spark/centre of action for innovative marine restoration and value creation.
- **Restorative marine economic practice:** Once in place, protagonists promoting restorative narrative sequences could be involved in making investments of time and



money in restorative projects. Such projects might include: efforts to harden marine substrates, build sediment traps, develop multitrophic shellfish and algae farming, create waste shell artificial reefs and associated ranching aquaculture. Such work might venture further into submarine tourism, tidal energy projects and underwater sculpture parks. Such projects might then provide the basis for a Te Taiao based Marine Providence Programme that could generate above normal economic returns from aquaculture products with verified restorative credentials. Such projects do not ignore commercial opportunities, but rather re-route their focus. BE work around starfish collagen, seaweed sunscreen pigment might also generate returns from ranching aquaculture (crayfish/kōura) and cost saving from waste shell used for substrate building. Restorative programmes could obviously also form the basis of new tourism ventures. But such practices might also provide product differentiation opportunities. For example, while mussels have strong environmental credentials there is very little differentiation between mussels raised in different locations and by different producers. Like on-land regenerative farming, mussels produced as part of restorative aquaculture programmes, that aim to enhance marine diversity, restore the benthic environment and re-establish native populations, could earn a premium particularly if such activities were evaluated and verified on the basis of a tohu ('mark') or similar as not just sustainable but restorative.

4 Collected Insights from Stakeholder Engagement

Creating a BE in place will need to be informed not just by theory and ideas but also by stakeholders who are in a specific location. This is an observation from the general place-based policy literature (Beer et al., 2020) but applied specifically to the BE. As part of this project, therefore, we engaged with stakeholders in a particular place to get their views and set them alongside the other material in this report. The research team's networks are strongest in Te Taiuhu, so that is the place we investigated.

During the engagement phase of the project, we were able to identify a number of key themes across the various stakeholders involved in the blue economy, which has shaped this report and the proposal. These insights were collected through a combination of 1:1 interviews and 'cups of tea' with influencers in this space and by observing through attendance at workshops and meetings in the blue economy space in Te Taiuhu. As a result we listened and spoke with iwi leaders, people actively engaged in the blue economy, scientists, local government representatives and community members about their relationship to and understanding of the blue economy in place.

First and foremost, within the region (Te Taiuhu) there is **considerable appetite for a focus on the blue economy**. There is an evolving understanding of the difference between the existing oceans economy base and the opportunities for a more valuable and sustainable economic driver in the blue economy. There is little doubt amongst key stakeholders of the importance of the oceans to the region's economic prosperity and there is a high level of awareness about the future opportunities that the blue economy can provide for the region.



This awareness maps well to the region's key economic and community development tools which **support the development of the blue economy**. The region's long-term development strategy, the Te Taihū Intergenerational Strategy, which identified an Oceans Economy Strategy as one of its key priority actions. More recently, the Nelson Tasman Regeneration Plan 2021 to 2031, identified the BE as one of just three focus areas for the region's medium term economic outlook. The plan was prepared by Project Kōkiri, a coalition of local government, iwi, central government and economic development agencies brought together to steer the COVID-19 response for Nelson Tasman. These important strategic documents suggest a good alignment between key stakeholders in the region in support of further developing the blue economy.

Within local government, there is recognition of the **complexity of being both an enabler and regulator of blue economy activity**. Specifically, Marlborough District Council have faced this very publicly through the Blue Endeavour project proposed by New Zealand King Salmon. But these complex challenges stretch beyond large aspirational projects such as Blue Endeavour and are relevant to behaviour change among recreational users of our national parks for example. Despite significant progress in locally led regulatory frameworks such as the Marlborough Environment Plan, there is recognition that these regulatory tools must be paired with behaviour change and social awareness campaigns that encourage people to do the right thing and 'fall in love with the marine environment' which will ultimately lead to improved behaviours. In Marlborough, the Council is currently considering how to deliver on the Marlborough Environment Plan without damaging relationships with recreational users and supporting a voluntary approach to compliance rather than an enforced one.

Within the blue economy sector, there is a **growing eco-system of service providers** establishing themselves around the blue economy opportunities. This forms part of the wider innovation eco-system that is developing in the Nelson Tasman and Te Taihū regions. Typically, these eco-systems focus on innovation within each of the core economic drivers of the region but there is a sense that the blue economy is particularly well positioned for growth and further development in Te Taihū, which is driving increased interest and engagement from technology companies for example. It appears there are also significant flow-on effects in terms of talent from more established institutions that are based in the region, such as Plant and Food Research and Cawthron Institute. They both attract specialist expertise and talent to the region, offering an obvious recruitment pipeline for innovation and technology service providers establishing themselves in this space.

The core sector, including the large commercial seafood companies, are relatively **well connected and increasingly interested in collaborative opportunities**. An example of this is the collaboration established between Sealord, Talleys, Sanford, AquacultureNZ and Nelson Regional Development Agency to develop the 'Catch a Job' campaign which drove recruitment outcomes during the pandemic. This collaborative model allowed the companies to maintain their own recruitment systems whilst pooling resources to come together in a more impactful way that also connected to the regions recruitment drivers such as the climate and unique lifestyle offering. Interestingly, this campaign initiative built off the success of a similar initiative in the horticulture sector called 'Pick Nelson Tasman' and there was cross-industry collaboration established to support workers to transition from the horticulture harvest to the hoki season.



The success of these recruitment initiatives was **underpinned by strong regional collaboration** in Project Kōkiri which paved the way for more tactical responses to the challenges presented by COVID-19 such as workforce shortages due to the border closures. Having an established collaboration framework such as Project Kōkiri with an operating culture that had both a medium-term strategic view and a short-term agile response view meant there was resource available to support initiatives such as Catch a Job Te Taiuhu. Typically, the region's development agency is not resourced sufficiently to be able to respond to such needs and opportunities but pandemic relief funding provided by local government meant the Nelson Regional Development Agency had additional capacity and capability to support the region's economic response. This model worked well and resourcing of local capability and capacity in this space should be a strong consideration in the work to better understand and support the blue economy in place.

The Nelson Regional Development Agency has continued to pursue collaboration in this space with the development of Moananui, **as a blue economy activator and facilitator**, using a cluster model to pull together the disparate activity in the blue economy and strengthen the regional positioning and innovation wraparound of the blue economy aspirations for Nelson Tasman. This work has attracted interest from local government, central government and the sector – who all see the **potential of a more joined-up approach** to realising the blue economy potential in Te Taiuhu. There has been valuable insights derived from international models in the cluster and blue economy incubator space, through research and direct engagement by Moananui. There is a sense of real possibility and promise with a strong blue economy cluster for the region. Attracting investment into the cluster and identifying the 'first movers' to deliver activity as a result of the collaboration is the next most obvious iteration of the cluster activity.

Despite the awareness and support for the blue economy opportunities, there is also a growing movement of **concern about the negative impacts of commercial activities** on the marine environment. This is evident in conversations with communities and iwi in particular. These concerns are not isolated to activities undertaken within the marine environment but stretch to activities such as commercial forestry which are having negative impacts such as increased sedimentation in the marine environment.

Te Tai o Aorere (Tasman Bay) has a **significant impact on the identity of the Nelson Tasman region**. It geographically and culturally binds the region together. It not only shapes the way of life of local people but also shapes the economic makeup of the region as well. Te Tai o Aorere is the launch point for commercial fishing and the region's popular tourism attractions such as the Abel Tasman National Park, which is New Zealand's smallest but most popular national park. It is also the most significant coastal national park in the country with its unique and treasured combination of bush, beach and bays.

The entire moana stretching from Kawitiri (Westport) to Waitohi (Picton) is of **cultural significance to mana whenua** of Te Tau Ihu o te Waka a Māui (Te Taiuhu). The relationship with the moana is based on whakapapa and the oceans of Te Taiuhu are home to the stories of generations of migration to the area by Māori and later by European settlers. The region has a long and interesting history of trade across the oceans which continues to this day. This intertwined relationship between commerce and culture is not as well understood or recognised today.



There is critical **mātauranga associated with the marine environment that is vulnerable and at risk** without further development and focus in this area. The eight iwi of Te Taihū settled their claims with the Crown in 2014 through the Waitangi Tribunal process. Central to the settlements was recognition and an apology by the Crown of failing to protect the cultural interests of mana whenua in Te Taihū. Indeed, most of the iwi in Te Taihū were rendered largely landless and had their cultural practices and language eroded through colonisation. The impact of this continues to be felt today and as part of the cultural revitalisation led by mana whenua, there is a growing sense of the need to step into greater leadership roles and exercise more influence over the care and protection of the health and mauri of the moana.

The need for leadership to protect and restore the marine environment is clear and has been identified as a priority for the Kotahitanga mo te Taiao Alliance which is a relatively mature collaboration of local government, iwi, environmental groups and the Department of Conservation to tackle the biodiversity crisis within Te Taihū. The alliance has a consensus-based decision-making model that looks across the pipeline of challenges and opportunities in the conservation space to collectively prioritise and support projects that contribute positively to biodiversity outcomes. This collaborative model has been a huge success for the region and resulted in significant investment attraction for the region's work, particularly in the COVID-19 pandemic response funding such as Jobs for Nature.

In recent months the alliance has increased its focus on the health and wellbeing of the marine environment, led by local iwi leaders, they have begun work to establish a 'marine park' from Kawatiri (Westport) to Waitohi (Picton) to support the restoration of the moana. The scale of this project cannot be underestimated. It is understood to be the largest-scale collaborative planning process in this space in New Zealand. The purpose is to create a movement to inspire a **visionary region-wide marine restoration program**, which is proposed to be alliance-led and iwi-governed.

The platform for the proposal is an expression by iwi that they are willing to be 'Te Kāhui e tū ana e te wā o te kore – the group that stands up in difficult times' and take leadership of the need to deliver large-scale transformation to improve the health and wellness of our marine environment. During the engagement, we heard from iwi that they see clearly that under the status quo approaches, the ocean will not be able to provide for future generations. They have observed that the seafloor is depleted and that there have been 10 serious climate-related emergencies in the last 15 years. Iwi say with these events becoming more frequent, **an emergency management approach is an appropriate response** to restore the marine environment back to a point of balance.

*We are proposing a project that encompasses the coastline from Kawatiri/Buller, Onetahua, Whakatū, Te Hoiere, to the Wairau. This could be the largest seascape restoration project in the country, and we all need to be part of this effort, says Shane Graham, Kaiwhakahaere (CE) of Te Rununga o Ngāti Rārua. Te Whakakitenga – the vision - is to accept change and adapt to it; to **develop economically sustainable responses**; to do no harm and to restore the balance.*

This ambitious new proposal is an example of Māori leadership in this space, taking a collaborative and inclusive approach through the Alliance but ensuring that the initiative is built off a mātauranga-based foundation. When we spoke to the initiators of this movement, they talked about **the importance of exercising the mana and authority of iwi over the**



marine environment, to drive a different conversation and a unique starting point for a movement that will no doubt resonate widely within the community.

This approach has been inspired by recent experiences with the August weather events in the region whereby iwi declared a rāhui across Te Taihū. Despite not having any regulatory tools, there was almost unanimous compliance with the rāhui that stretched over a couple of weeks and prohibited all activity within the marine space. There was considerable community dialogue and **a desire to understand and respect the authority**. This and many similar experiences has helped crystallise the importance of leadership from mana whenua in exercising mana moana over our marine spaces and inspiring behaviour change and leadership from within communities to restore balance back to the marine eco-system.

As both Moananui and the Kotahitanga Moana (Alliance project) initiative progresses, there is much to learn about **the interfaces between innovation and restoration** and indeed the tension between the urgent need for large-scale restoration and also the clear opportunity to capitalise on the growth of the blue economy.

These two ideas are not mutually exclusive but the narratives provide for fundamentally different starting points – to lift productivity and realise gains with a sustainable lens or to tackle restoration and regeneration as the kaupapa with a view to protecting the future value of the marine environment for generations to come. There is much synergy between these two concepts and they both provide unique and different **platforms from which to understand the blue economy** in place.

Both are also at **crucial stages of development**; where the research outcomes from Sustainable Seas Science Challenge could have tangible and meaningful impact on the design and implementation of their work and where the forming stages of the initiative could deliver insights to help inform the blue economy in place conversation right across the country. These initiatives are well poised for further research and observation as they navigate their way through the management of stakeholders, interact and engage with communities, pilot initiatives in the blue economy space and utilise those insights to evolve the platforms that have been developed to deliver against their aspirations.

When further research and observation has been suggested, there was a clear message, in particular from iwi, that **all research undertaken must focus on reciprocity**. There is a growing sense of awareness around the extractive nature of some research and there is resistance to becoming ‘a subject’ without any material gain or support. These kaupapa both have clear and demonstrable opportunities to strengthen the work of Sustainable Seas Science Challenge, with an understanding that there would need to be both a receiving ‘ear’ and a lending ‘hand’ in the development of their work.

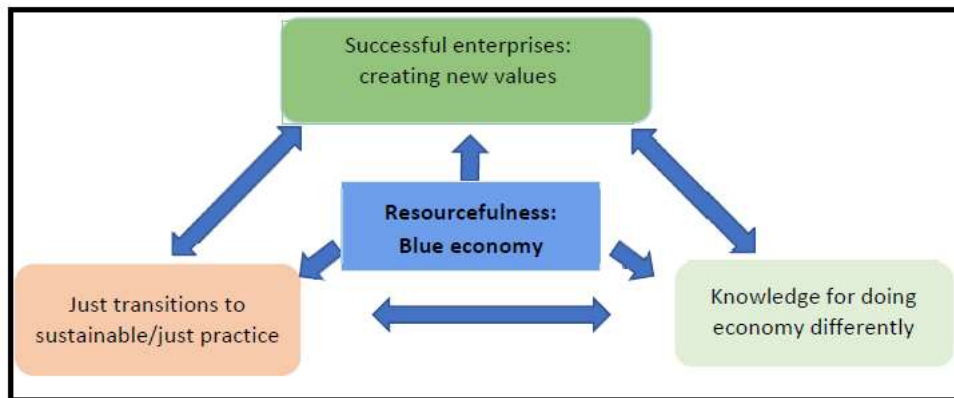
5 Pathways to a BE (Activity framework)

The key question is how we get from here to there. The impact that the Challenge intends to have would shift us from an extractive marine economy to a BE that generate multiple wellbeings for multiple stakeholders, using EBM and mātauranga Māori. Given what the economy currently does, what pathways can lead us to that better place?



A high-level way to answer this question is to put some structure around the different elements of that better place. Figure 4 is taken from Lewis, et al. (2020), and it *positions blue economy thinking at the centre of a virtuous circle of novel thought and knowledge production (science, debate, participation of communities of interest, economic analysis, new ethics and politics), sustainability transitions, and the successful creation of new value(s)* (p. 12). It provides an excellent way to understand the linkages between the BE and the values it can create, with the changes in resources, knowledge and impacts.

Figure 4 BE Strand: creating value from BE



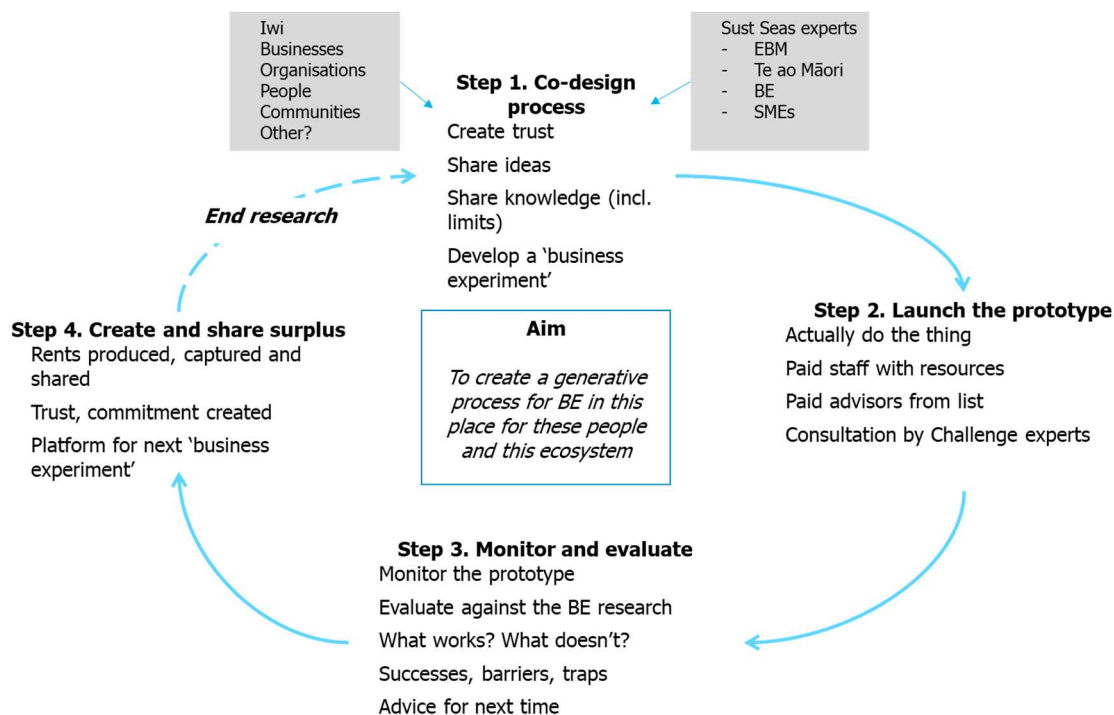
Source: Lewis, et al. (2020)

More detail can be added to the high-level framework by thinking about the specific people and activities that could be involved in creating projects with impact. As shown in Figure 5, we considered that the research process could include several elements:

- a co-design process to involve the many stakeholders in a BE in place, consistent with place-based policy and the recognition of the locality-based production of surplus
- a prototype activity that focuses on having impact based on the Sustainable Seas research to date, to test for what works, learn and improve
- a process to monitor and evaluate the work to demonstrate that it is moving us along the desired pathway
- production of surplus as envisaged (Lewis et al., 2020) in order to create belief, trust and momentum around the project specifically and the BE approach more generally.



Figure 5 Process for BE research with impact



Source: NZIER

The process in Figure 5 does not all have to happen within the Challenge or within some set time frame. Instead, this is more of a total plan for getting from the current situation to the successful production of surpluses that would be available for ecosystems and communities as well as the economy. By having the plan for the whole process, it is possible to focus on specific parts while understanding how they fit in the whole.

We had two specific issues that motivated the thinking about this process. In reviewing the BE research and comparing it with the ideas covered in section 3, we identified two gaps in the research where Sustainable Seas can contribute to having impact:

- **Surpluses** – A key insight from the research in the Challenge is that the BE needs to produce surpluses that are available for restoring ecosystems and supporting communities (Lewis et al., 2020). If all of the value created through economic activity is extracted by the market economy, there is nothing left to invest in society and the environment. An analogy from the business world is leveraged buy-outs: an outside investor can buy a sustainable company, load it with debt, strip out the assets and leave the husk to go into bankruptcy. That is not a sustainable approach to society or the environment. Something must be left in the system to invest for the future. That is the reason we have focused on theorising surpluses in our discussion above: to think about what they are and how they are produced.
- **Commitment** – Organisations, institutions and businesses are ways to keep individuals committed, both in good times and bad. For example, a business structure is a way to keep employees focused on a particular task even when they don't want to, and it is



also a way to capture value when things go well (Walker, 2015). Without the discipline of a legal entity that owns the value being created and allocates it to certain people, it would be easy for individuals to grab what they can: an idea, a product, a client account, even cash. Similarly, if individuals simply contracted each day for that day's work, there would be little incentive to stay with a difficult project and see it through to conclusion. Outside the commercial world, kinship ties connect people together more or less strongly in spite of personal differences and 'family dynamics'. Other institutions, such as churches, schools and clubs, can keep people connected in spite of disagreements, at least up to a point (Harari, 2015; Hirschman, 1970). In the BE research in Sustainable Seas, much has been made of the potential benefits of different approaches. Less clear to us was the institutional arrangements that could create accountability and commitment. If we are aiming for producing new kinds of value from new perspectives about ecology and the environment, what are the implications for the structures that are required? It may be that existing structures and institutions are sufficient, but it isn't clear that the topic has been considered.

In addition, we noted the considerable distance between current conditions and the aspirational blue economy for Aotearoa. That is, the aspiration appears to involve significant re-ordering of economic relationships, re-thinking of relationships between people and resources, and re-defining who has a say in decisions made about resources and property. As Lewis (2017) explained, this disputation over value created is a political process as well as an economic one.

When we considered the research that could be undertaken in Stages 2 and 3, we were particularly interested in these two research gaps. We felt that part of the work as laid out in Figure 5 would be to consider the production of surpluses and the mechanisms for commitment that would create the desired Blue Economic In Place.

We submitted a proposal for the next stage of the research to the Sustainable Seas Challenge. A copy of that proposal is included in an appendix.

6 Conclusion

For this report, we engaged in a review of documents produced from the research in the Sustainable Seas National Science Challenge, in particular from projects in the Blue Economy strand of the Challenge. We considered the material in light of standard economic theory – to understand how economics and the current economy might enact a blue economy – and other theories about human behaviour, the economy and its embeddedness in society and the environment. We also reviewed Challenge work on Māori economics, both the theory and the practices, and considered how a blue economy would operate given that foundation. Finally, we connected formally and informally with people in Te Taihū who are involved to a greater or lesser extent with economic development and BE, to understand how these ideas fit with their ideas and aspirations.



We would draw several conclusions from the work already done and our review:

- The blue economy depends on a healthy marine ecosystem, so achieving sustainable economic activity will involve EBM.
- Managing the ecology and economic activity associated with BE will require institutional arrangements with legitimacy, flexibility and knowledge. Tangata whenua and Māori entities have historically had such arrangements and tools, and continue to use them in an integrated way to manage their marine space and assets. It will therefore be important to create a synthesis of BE and TAM.
- Successful BE arrangements will be locally-based. Academic research on regional policy emphasises the need to tailor policy to place. Sustainable Seas research, especially in the TAM area, has also found that good practices that fit local conditions vary from place to place. Development of BE has to be cognisant of place, and research should examine the spatial variation and its impacts.
- BE as described by Sustainable Seas is aspirational and presents a challenge to current economic arrangements. Most importantly, it does not currently exist. As communities and businesses, including Māori, create the new blue economy, they will be learning by doing. The best vantage for researchers for observing the developing BE will be as participant observers in the process.
- Being involved and sharing knowledge and expertise also implements the Māori value of reciprocity. It is an important value for balancing human consumption and ecosystem functioning, and for regulating relationships. Incorporating reciprocity into research practices means that researchers are living the value.

The conclusions point towards future research that involves a synthesis of BE, EBM and TAM. The research should be co-designed with stakeholders and focus on understanding specific locations. Researchers should be actively involved in contributing their knowledge and experience.

However, we also urge some caution; we would temper the aspirations around BE because of our understanding of the literature. Issues that the research could consider as it progresses are the following:

- Insistence on direct, personal interaction is out of step with industrialised society and social systems more generally. How can arrangements and institutions provide enough mediation of intersubjective tension while also supporting a sustainable BE and personal involvement?
- Creating surpluses, especially in a capitalist economy, has historically been based on exploitation. How can BE arrangements move beyond this approach?
- Typically, business processes and environmental management have been at odds, at least in the minds of the people involved. What can we learn about the interfaces between innovation and restoration, especially at scale?

From a research perspective, the aim of the next stage could be to fill in some gaps in the previous work:



1. understanding the distance between current conditions and the aspirational blue economy for Aotearoa
2. exploring the motivational ‘spark’ or desire that would spur the development of a thriving, sustainable blue economy in localities
3. evaluating the institutional and organisational forms that would create and support commitment to the development of BE.

We believe that investigating these questions and working towards answering them would help support a thriving future blue economy.

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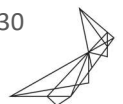
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Appendix A Phase II Synthesis Proposal

STRAND	Blue Economy
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ACTIVITY TITLE	Blue Economy in Practice
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<p>AIM</p> <p>MBIE set the Sustainable Seas Science Challenge the goal of understanding, caring for and using wisely New Zealand marine environment for the benefit of all now and in the future. By most measures there is significant gap between this goal and the marine environment's current state. Much of the Blue Economy (BE) research to date has focused on understanding how to care and wisely use the marine environment. There is now a need, in this the latter stages of the Challenge, to shift from investigative to <i>more active engagement inquiry methods</i>. This Stage 3 project does this. Our aim is to investigate and support BE transition projects and then to critically reflect on both actual practices and research from Sustainable Seas. Through this process, we will generate recommendations for improving regional development of BE.</p> <p>This overall aim – improving BE practice – will connect with three main stakeholder groups in ways that are relevant to them:</p> <ul style="list-style-type: none"> • For government and community groups, the work will explore different ways of stimulating and supporting regional transitions to a BE, including both how principles and values can be supported through BE and how in practice to develop opportunities • For commercial and business stakeholders, we will explore how ideas become actions and plans, and in particular the scalable and replicable lessons from existing initiative. A key part of this work will be collecting information and lessons from the experience of Moananui through its early development stage (Jan – Dec 2023) • For Māori stakeholders, we will explore the role of Mātauranga Māori, Kaupapa Māori, and iwi/hapū involvement, and again connect lessons to both the Te Ao Māori (TAM) work of the Challenge and to extending the BE to other locations. <p>Achieving these aims will require working alongside partners engaged in BE activities, connecting them with insights from Sustainable Seas, and critically assessing both their activities and the research for lessons on achieving success and replicating results.</p> <p>We understand the need for co-ordination of engagement so that our work does not become a burden on stakeholders. We will be guided by the Challenge through quarterly meetings and regular correspondence so that engagement activities are managed and co-ordinated.</p>

<p>IMPACT (how does this contribute to co-development partner/end-user needs)</p> <ul style="list-style-type: none"> • Demonstrate different ways of stimulating and supporting blue economy growth at relevant place-based scales (regional government, iwi, community and private sector-led blue economy development plans, strategies, and initiatives). • Support application of blue economy principles in practice. • Identify opportunities for replicable and/or scalable practices or processes for blue economy growth. • Support Māori in developing and benefiting from place-based blue economy (iwi/hapū level and iwi business level) • Improve investor confidence (public and private) in blue economy activities. • Increase support for BE in general and for a specific project by demonstrating how it is valuable to the economy, the marine ecosystem and Māori stakeholders • Identify principles of success to stakeholders so that government, business, community and Māori stakeholders are more likely to be successful in future projects • Work alongside Māori entities developing BE projects to share the understandings developed in Sustainable Seas and explore ways to increase their impact
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KEY RESEARCHERS (those involved in producing outputs)			
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CONTRIBUTING RESEARCHERS (those who bring information to the table)			
Name	Project/s	Organisation	Email
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Shane Graham	Kaiwhakahaere (CE)	Ngāti Rārua	Project lead for marine project (KTA)
Jodie Kuntzsch	Cluster Lead	Moananui	kiaora@moananui.org.nz
Several people		Kotahitanga mō te Taiao Alliance	

CONTRIBUTING PROJECTS	
Project	Contribution to activity
BE2	BE principles, which we will be able to use and test in our work
Whai Rawa, Whai Mana, Whai Oranga: Creating a world-leading indigenous blue economy, and Indigenising the blue economy	Foundational resources covering iwi-led business models particularly in relation to EBM leading to work on Manahau (Māori theory of value). By engaging with these researchers, we will enter a kōrero about pathways and models, testing some of the thinking and insights against the activities we observe and providing further information about creating success
Tūhonohono: tikanga Māori me te Ture Pākehā ki Takutai Moana Whaia te Mana Māori Whakahaere Tōtika ki Tangaroa – in pursuit of Māori governance jurisdiction models over marine resources Hui-te-ana-nui: Understanding kaitiakitanga in our marine environment	Foundational resources on positioning of Mātauranga and Tikanga Māori vis a vis legal and regulatory systems. We hope to provide comment on these resources, informed by what we observe in the case studies, and reflect those observations back to the researchers.
He Pou Tokomanawa: kaitiakitanga in practice in our marine environment	Foundational resource for Te Taihu keystone project.
Awhi Mai Awhi Atu: Enacting a kaitiakitanga-based approach to EBM	Eastern Bay of Plenty (EBOP) restoration and spat project that could inform EBOP multi-species aquaculture ‘hotspot’ projects. We hope to build on the work of this project by bringing in the BE principles and a focus on actions and pathways for impact, to achieve an approach that supports the economy and the ecosystem
Ki uta ki tai: Estuaries, thresholds and values	Ecological health indicators that underwrite restoration of the Māuri of in-shore marine locales
Synthesis of Tasman Bay and Golden Bay Phase I research	Clarifies tools for use in Tasman and Golden Bay restoration actions
Growing marine ecotourism	Basis for work on restorative tourism options and engagement.
Transitioning to a blue economy	Foundational options resource for engagement with case study stakeholders
Building a seaweed sector	Foundational resource for engagement with case study stakeholders in seaweed aquaculture options. We expect that this will be an important topic for at least one of our case studies, which will give us the opportunity to engage constructively with the material from the project to create a profitable and sustainable approach to the seaweed sector.

PROPOSED ACTIVITY AND HOW UNDERTAKEN
This project is built around one keystone engagement and two smaller case studies. The keystone engagement with the Kotahitanga mō te Taiao Alliance will provide in-depth work with a single BE initiative in Te Taihu. The smaller case studies will consider two other locations in Aotearoa New Zealand and provide contrasting evidence regarding place-based BE development. The final piece of the project is engagement with Moananui; we will work actively with that initiative to contribute what we know to its success.

BE principles: We will base this work on the BE principles proposed by the Challenge in synthesis activity 2, which is planned to produce outputs by April 2023.

Research Principles: We have developed the project around three research principles. These ground us in particular attitudes and practices that we feel are important to the success of research like this.

- **Reciprocity** – Ensuring that we are contributing to our partners and stakeholders while we undertake the research by supporting, stimulating and adding value to the regional initiatives analysed
- **Action research** – Being an active participant in initiatives that are meant to create change in the world, engaging with the other people involved and being more than a detached observer
- **Critical engagement** – Assessing information against theory and theory against information, building an understanding of BE and its application from the combination of concrete and abstract.

Research Methodology: Based on the above principles our case study research will involve the following activities and processes:

1. **Identify current challenges:** Working alongside practitioners through individual and group engagement, clarify the current developmental state of BE in place and identify the key challenges practitioners are facing.
2. **Analysis:** Analyse the challenges as issues with potentially collective and interventional responses by drawing on Sustainable Seas Science Challenge research, background information and appropriate theory.
3. **Interventions:** Co-design with practitioners possible interventions in response to the issues (challenges) and prototype and test these selected interventions as responses (e.g., interventions might include study tours, novel literature development, community events, installations).
4. **Action and reporting:** Coordinate, monitor, evaluate and report initial results of interventions to key audiences in generating surpluses, developing commitment and creating organisational and institutional capacity.
5. **Next round responses:** Identify lessons from interventions, revise and develop next round of response to practitioner challenges.
6. **Repository compilation:** Report comparative results of interventions across different case studies to key audiences in different formats identifying current states, challenges, interventions, lessons learned and next round responses.

How we will deliver impact

As noted above we will investigate and report on three examples of actual BE projects in different locations. This approach will allow us to **demonstrate different ways of stimulating and supporting blue economy growth at relevant place-based scales**. By taking an action research approach in which we work alongside these projects, we will be **supporting application of blue economy principles in practice**. In addition, by comparing and contrasting the experiences of three different examples, we will **identify opportunities for replicable and/or scalable practices or processes for blue economy growth**. With this information about what is likely to be successfully replicable, we will be **improving investor confidence in blue economy activities**.

The comparative case studies reports will provide in-depth accounts on the social, culture and political conditions that support and constrain blue economy initiatives in these localities, the particular challenges confronted, interventions used and their relative success. This will then be re-presented as a set of practical tools that can be used to scan, assess and engage actors and agents in localities where BE initiatives are less developed. The aim is to begin the development of blueprints for action for the different stakeholder groups, to help them identify what they can do now to build the BE.

The keystone engagement has been selected because it involves leadership by Māori based on mātauranga and tikanga Māori. By working directly with the Kotahitanga mō te Taiao Alliance, and by drawing lessons from their work, we will **support Māori in developing and benefiting from place-based blue economy**.

We have divided the work into several objectives that will run in parallel. Below, we describe the approach for each objective and the expected outputs.

Objective 1. Challenge engagement

We know that this project is one part of a larger research ecosystem. We will make it a priority to stay engaged with others outside this project:

- Sustainable Seas – Dr Nick Lewis will be our key contact in the Challenge, and we will maintain regular contact with him throughout. We will also look to incorporate insights from Challenge research, for example, from the work of Dr Jason Mika and Dr John Reid on Indigenising the blue economy.
- Synthesis projects – The other synthesis projects will also be working through some of the same issues, and are likely to be involved with some of the same stakeholders. Regular meetings with other activity leads will seek to align engagement and communication across the strand. For example, we will ensure that the BE principles from activity 2 are the basis for our work.

- Moananui – We understand that this organisation will play a significant role in the uptake and activation of Sustainable Seas outputs, so we will focus on testing information and creating actionable insights, and that Moananui will be a vehicle to deliver this work for impact. At the beginning of this project, we will develop a plan for collaboration between this project and Moananui, to be confirmed by 31 March 2023.

This objective will also be responsible for the regular written Challenge reporting. We have also discussed the possibility of an event, such as a seminar or wānanga, that can promote transfer of knowledge from the project to Moananui at the conclusion of the research phase.

This objective has a particular focus on supporting impact through application of blue economy principles in practice and identifying opportunities for replicable and/or scalable practices or processes for blue economy growth.

Objective 2. Keystone engagement

The core of the project is engagement with a large BE project in Te Taihū, the Kotahitanga Moana Project of the Kotahitanga mō te Taiao Alliance. This objective will be led by O'Donnell, who has used the Stage 1 process to conduct interviews and discussions with people involved in BE initiatives and development work in Te Taihū. Stage 1 work identified this innovative and challenging initiative led by Māori that is in the early stages of launching. We see this as an important opportunity to test the ideas from the Challenge about eco-system-based management (EBM) and Māori-led initiatives along with BE principles.

At a September hui, Shane Graham, Pouwhakahaere (CEO), Ngāti Rārua, gave the Alliance members an inspiring pitch for a visionary region-wide marine restoration program, proposed to be Alliance-led and iwi-governed. The proposal, Ki Uta Ki Tai, acknowledges that iwi are actively anticipating the challenges from climate change, and are prepared to be Te Kāhui e tū ana e te wā o te kore – the group that stands up in times of difficulties. The proposal was well received by Alliance members. It will now move into a project scoping phase with support from The Nature Conservancy, including assistance from marine technical lead Dr Rebecca Gentry. The proposal is of a scale that could make a significant impact at a national level.

We propose to have three parts to the objective:

- Part 1 – Initial engagement with the initiative. This part has already started, and they are happy to have us as part of the initiative. We propose to hold a 'kick-off' meeting, workshop or seminar to mark the formal beginning of collaboration. That will also give us the opportunity to collect baseline information about the initiative as an example of BE.
- Part 2 – Regular participation. O'Donnell will be a regular and active participant in the hui, wānanga and other activities of the initiative. With each event, he will use his own observations and formal documents to reflect on the initiative in the context of developing the BE. He will record those observations and reflections as qualitative data, and discuss them with the project team to create a critical assessment.
- Part 3 – Exit hui/wānanga. In late 2023, the team will hold an exit hui or wānanga with the initiative to share observations, understandings and lessons. They will offer to the initiative advice and appraisals based on the Challenge's research on BE, EBM, and TAM. We propose to have multiple representatives from the Challenge attend. The team will also record feedback on and reactions to the material provided.

The aim is both to understand what is happening with the initiative from the perspective of BE principles, EBM and TAM, and to produce a change in the initiative to increase its effectiveness. By working with the initiative and participating actively in its activities, the research team aims to contribute to greater impacts. We will then report in our outputs which actions or activities were more successful and which were not, forming the basis for advice to Moananui and other impact-focused work. We expect this advice to be in the form of list or descriptions of concrete actions that people can take (or perhaps should not) to increase impact.

This objective is focused on supporting Māori in developing and benefiting from place-based blue economy and applying activity 2 BE principles in practice.

Objective 3. Case studies

We will also conduct two smaller case studies in other places in Aotearoa New Zealand that could support BE initiatives or projects. Both Prichard and Brown are available to lead these case studies. We have identified possible locations as well as a few potential collaborators and projects. The first task of the objective will be to investigate the possible locations and identify two potential sites. Possible criteria for final selection are:

- contrast with Te Taihū
- presence of willing partners
- Māori leadership
- perspectives of regulators
- range of economic and restorative activities.

We intend to work with Dr Mika and Dr Reid to help with case study selection, and we will co-ordinate this work with the Challenge to manage impacts on stakeholders.

Some possible locations are:

- **Southland and particularly Motupōhue** (Bluff) is on course to become Aotearoa's centre for multi-species marine aquaculture with on-land Pāua (sea snails/abalone) and Inanga (whitebait) farming, an *Asparagopsis Amarta* seaweed hatchery, a \$16m reticulating salmon hatchery, and related aquaculture, food and tourism businesses either under development or proposed for the peninsula. Such developments sit alongside, or in support of, resource applications for open ocean salmon farms in the waters around islands of Foveaux Strait lodged by Ngāi Tahu Seafoods, Sanford and NZ King Salmon. This potential case study would allow the research team to identify, investigate and compare BE activating conditions. It would also enable further connection to completed Sustainable Seas Challenge research and reflection on Challenge principles including Māori leadership, community engagement, ecosystem management, and restorative and regulatory processes through comparison with a second case study and the keystone Te Taihu case.
- Like Motupōhue, **Eastern Bay of Plenty, particularly Ōpōtiki and Te Kaha**, is emerging as a nationally significant BE 'hotspot'. This BE locale includes investment and joint ventures between Te Huata, Te Whānau-ā-Apanui iwi's commercial arm, in on-land seaweed and mussel hatcheries and integrated multi-trophic aquaculture in the moana. Such initiatives follow on from the establishment, by iwi-led Whakatōhea Mussels, of Aotearoa's first open ocean mussel farm (8.5 kms off the coast) and on-shore processing facilities at Ōpōtiki. As well as identifying activating forces and conditions, supporting further connection to Sustainable Seas research and comparing Eastern Bay of Plenty our other studies, this proposed case study will also analyse opportunities for product and market differentiation based around mātauranga principles.
- Home to the originating Waitangi Tribunal fisheries claim, **Muriwhenua iwi** are in the early stages of developing and in some cases restoring marine farming operations in consented water spaces of Tai Tokerau harbours. In particular, Muriwhenua iwi, through various entities, are exploring new oyster, fin fish and seaweed options. This proposed case study will support further connection between Muriwhenua iwi and Challenge researchers, and compare and contrast activating factors and conditions with other case study locales, particularly around mātauranga Maori approaches to ecosystem management, restorative and regulatory processes, and opportunities for locality-based aquaculture product and market differentiation.

We propose to engage with these communities following a process similar to that used by Brown and Kaye-Blake in their rural community research.¹¹ The process involves getting in touch with people and organisations through personal and professional networks and official channels, having a series of one-on-one meetings to develop relationships and a picture of the community, holding workshops to elicit the values and resources of the community, and developing action plans around specific project ideas chosen by the participants. The aim is to share knowledge and resources with these communities, so that they improve our investigations and we improve their particular applications and activities.

As a comparison exercise, this objective is focused on demonstrating different ways of stimulating and supporting blue economy growth at relevant place-based scales, as well as identifying opportunities for replicable and/or scalable practices or processes for blue economy growth. Where appropriate, this objective will also support Māori in developing and benefiting from place-based blue economy.

Objective 4. Dissemination of results

By the end of our engagement with practitioners involved in the BE, we aim to be able to provide the following kind of advice:

- *To create a thriving BE in your locale, here are the three most important things to do...*
- *Here are a few good options for building a BE...*
- *The BE can be supported by EBM and TAM in the following ways...*
- *Here are important key flags/things to avoid when developing a place-based BE...*

The main outputs from the project are:

- An overview document that contains an executive summary regarding 'operating models' for BE in Aotearoa New Zealand that incorporate EBM and Te Ao Māori. This document will target practitioners among the three main audiences (Māori, regulators and businesses) with key information about the three main research topics (generating surplus, sparking engagement and ensuring commitment)
- Three summary pieces, each one targeting one main audience. These pieces will be aimed at a practitioner and non-academic audience, much like the overview document, and will be short, practical blueprints. They will be a resource for these audiences to understand what they can do to build the BE, what their roles can be, and how each place has a different approach or trajectory
- An output geared for Moananui: simple and accessible materials that end-users can put into practice. We expect them to be a one-page description of key actions to take and a short presentation (workshop, talk, or podcast), with the format to be confirmed with Moananui
- A report that describes the project, documents the impact of our involvement, explains the findings and provides recommendations. This output will be aimed at a researcher audience and will provide a detailed account of the theoretical context, research methods, data and findings. It will also aim to be reflective about the BE principles employed and the

¹¹ Brown, M., Kaye-Blake, B., & Payne, P. (Eds.). (2019). *Heartland strong: How rural New Zealand can change and thrive*. Massey University Press.

project itself, seeking to understand what impact the work has had, such as anchoring participatory engagement in the minds of stakeholders or empowering local actor to affect local outcomes.

These outputs will be produced collectively by the research team with input as appropriate from partners and stakeholders, with Kaye-Blake taking a lead in ensuring the quality and timeliness of the outputs.

This objective will tie together the information and lessons from the project. While we will aim to support all the pathways to impact, the objective will specifically focus on identifying opportunities for replicable and/or scalable practices or processes for blue economy growth and improving investor confidence in blue economy activities.

OUTPUTS (including potential format and timeline)		
Output (description of content)	Format (e.g. workshop, report, infographic, etc)	How does this meet the needs of Māori partners and stakeholders?
Overview document – Executive summary with key components of BE ‘operating models’ for Aotearoa NZ. Audience: practitioners and non-specialists, especially Māori, businesses and regulators. Key content: research findings about generating surplus, sparking engagement and ensuring commitment.	Report with infographics	Provides accessible summaries of potential ‘operating models’ that can be replicated and adapted by other Māori partners and stakeholders
Specific summary pieces for 3 key audiences: Māori stakeholders, businesses and regulators. Key content: blueprint advice for what they can do now to support the BE and how actions may vary by location.	Short, plain-language documents	One of the key audiences is Māori stakeholders, who can learn from the experiences of the Māori partners in this project
Simple, accessible outputs that Moananui can use immediately. They are likely to be a one-page summary of key actions that end-users can take to support a BE, and a short workshop/talk/podcast.	Format one-page document (or handout/brochure), plus audio or video material	Provides small, actionable steps that stakeholders/end-users can do now, supporting the impact focus of Moananui
Report – 30 - 50 pages with recommendations, for a research audience. It will cover: <ul style="list-style-type: none"> • Description of BE projects studied • Review of BE principles plus linkages with TAM and EBM • Assessments of BE projects studied, including developments over time • Assessment of the impact of this project, including impact metrics where possible • Critical reflection on BE principles based on field work • Recommendations for (a) those undertaking BE projects and (b) further research 	Report with infographics	Provides solid information base for understanding the context and challenges as well as the possible ways forward for a BE in specific places

PROJECT MILESTONES AND OUTPUTS AND DELIVERY DATES		
No.	Milestone or Output	Delivery date
1	Start project	01 March 2023
2	Subcontracts in place; Moananui engagement discussed	31 March 2023
3	Initial keystone project engagement	30 April 2023
4	Case studies selected	30 April 2023
5	Mid-point reflection on keystone engagement	30 June 2023
6	Case studies begun	30 June 2023
7	Case study workshops held	30 September 2023
8	Keystone exit hui/wānanga held	30 November 2023
9	Case studies completed	20 December 2023
10	Written outputs drafted	29 February 2024
11	Written outputs finalised	31 March 2024
12	Moananui outputs finalised	31 March 2024

BUDGET (NZ \$)

The proposed budget is provided below. We are taking a collaborative approach to the project: all named team members will be involved in reflection and discussion around the engagement with Kotahitanga Moana and case studies and will contribute to written outputs. We have also identified specific responsibilities, so that each team member will take the lead for part of the work.

Name	Responsibility	Budget
Bill Kaye-Blake	Project Manager, Principal Investigator Responsible for delivery of outputs	\$72,000
Johny O'Donnell	Te Ao Māori Lead Responsible for keystone engagement	\$72,000
Craig Prichard	Principal Investigator Responsible for case study	\$50,000
Margaret Brown	Associate Investigator Responsible for case study	\$50,000
NZIER	Contract management	\$15,000
Disbursement, including travel		\$16,000
Total		\$275,000

APPENDIX: PROPOSED TEAM

We have assembled a team with excellent relevant experience and a track record of successful collaboration.

- Dr Bill Kaye-Blake will be Project Manager and a Principal Investigator. He is bringing several main competencies to the work. First, he has experience as business consultant and advisor in the private sector, so bring that commercial lens. Second, he has advised both private business and government in the fishing and aquaculture sector, so has an understanding of the marine context. Third, he continues to lead multi-disciplinary research on community resilience that involves multiple community stakeholders. Finally, he has experience and formal training in project management.
- Johny O'Donnell (Te Rarawa, Te Aupōuri, Ngā Puhī) will be the Te Ao Māori lead and key member of the team. He has deep connections with Te Taihū, both personal and professional, and considerable credibility with Māori organisations and businesses in the area. He is a highly skilled facilitator and communicator. He will ensure that the keystone engagement is authentic and robust, and places the topic of Māori leadership in the BE at the centre of this project.
- Dr Craig Prichard is also a Principal Investigator. He brings two important perspectives to the project. One comes from his long experience helping develop the sheep milk industry, which was part of his research programme as Associate Professor at Massey University. He understands the challenges and opportunities involved with developing an industry, and has experience of working with multiple (and competing) stakeholders. Since leaving Massey in late 2020 he has worked at Nelson Marlborough Institute of Technology (NMIT) managing the institute's aquaculture programme and then on various food and water related education projects. His other perspective is as a boatie in Te Taihū and more recently as an employee for one of the locale's main marine tourism operators. As such, he is living the tensions of protecting the marine environment while making a living from it.
- Dr Margaret Brown is an Associate Investigator for the project. A long-time collaborator with Kaye-Blake, she brings important capabilities from her research career at AgResearch. She has considerable experience in qualitative research, particularly in community-based and workshop approaches to research. She is able to bring together diverse groups of people and

encourage them to collaborate comfortably. She is also excellent at encouraging research teams to find key insights in their work, while also managing their time and deliverables. This is the core team that we have assembled. We are flexible about including other team members as appropriate to add specific skills or capabilities. Also, through NZIER where Kaye-Blake is a Principal Economist, we have access to additional support for administration, information services, analysis and communication.