

Pathways to develop a Blue Economy

A summary report

NZIER report to the Sustainable Seas National Science Challenge

July 2024

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Kōrero ngako

By Johny O'Donnell

Te Tao Māui, Te Rarawa, Te Aupōuri

Guided by immense scientific knowledge and navigational skill, my people arrived on a wave. Our story is among many that draw ties to this land from courageous journeys across the seas. We are not just tangata whenua, we are tangata moana. We have always been and remain a coastal people, intrinsically seeing ourselves as part of the moana, not separate from it.

Indeed, when our tūpuna bravely navigated from Hawaiki, it is said that as they approached Te Hokianganui a Kupe, the ocean became rough and the waves hurled the waka toward the rocks. Nukutawhiti recited a karakia and cast his amokura into the sea as a gift to Tāne and Tangaroa, to seek safe passage to arrive here in Hokianga where our story begins and endures today.

These stories that strike the heart of our identity as people of the moana are imbued throughout our kōrero tuku iho. It is thought that this event gave rise to the pepeha:

Ko te mauri, he mea huna, ki te moana

The essential life force is hidden in the sea

It is with that understanding and potential that we seek to navigate our collective journey to reckoning with where we've come from, where we are today, and where we are heading as a country — with all eyes on the ocean to find the answers and to realise prosperity in Te Ao Hurihuri (our changing world). It is not just economic opportunity that lies in the ocean but the very essence of who we are and the life-giving forces that offer sustenance and wellbeing if we show them the respect they deserve.

I hope that this work and the research we have undertaken may assist us in navigating choppy waters, rich in opportunity and potential, to discover a new Blue Economy that places the wellbeing of the moana at the center of everything we do. We owe it to ourselves, to future generations, and to the life-giving waters themselves.

Key points

We describe pathways toward a vibrant Blue Economy

The Sustainable Seas National Science Challenge commissioned this work on developing the Blue Economy (BE) in place. This summary report provides recommendations for building a vibrant Blue Economy that supports people, communities and the environment, while being sensitive to each specific place or location.

The aim of this project has been to provide practical information for developing the Blue Economy as part of community and regional development. The central question is how to harness the energy and interest of people to set in motion a sustainable Blue Economy. We found that there is no quick fix or silver bullet, but there is plenty of interest and many good examples. Sustainable, long-term work and resources will be required to realise the potential of a Blue Economy in place, integrated with ecosystem-based management (EBM) and te ao Māori (TAM).

Three approaches to building the Blue Economy

We identify three different approaches.

- A **cluster-based approach** focuses energy and resources on creating a diverse sector, and it can incorporate Blue Economy principles of inclusivity and environmental sustainability.
- A **restoration approach** centres participation, collaboration, and environmental values. It uses a long-term process to support wider social, cultural and environmental wellbeing, which in turn supports the Blue Economy.
- An **attractor or anchor business approach** is a traditional approach to economic development applied to the Blue Economy. It develops economic activity around a key business or resource, generally with a commercial mindset.

A place-based, coordinated, and accountable approach could maximise potential

The research generated three broad findings.

- A place-based approach will make the most of economic potential (Sustainable Seas National Science Challenge, 2024).
- Most of the elements of a successful Blue Economy are already in place.
- Effort and opportunities around the Blue Economy would benefit from being organised and channelled.

Our findings are based on prior research and new case studies

For this project, we conducted four case studies.

- We worked with Moananui, a new cluster organisation.
- We worked with Kotahitanga mō te Taiao, a network of groups in Te Taihū
- We conducted field research in Motupōhue Bluff
- We investigated secondary school programmes and their connection to the aquaculture workforce.



In setting up the project, we developed a framework based on four themes: desire, narrative, surplus and institutions. We identified these themes in prior research on economic development and the Blue Economy. We also linked our project to other work in the Sustainable Seas Challenge: the themes of ecosystem-based management and te ao Māori, and the development of the Blue Economy principles.

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1 Introduction

1.1 Our team worked to understand the Blue Economy in specific locations

Our team, spread across several organisations and places, researched the Blue Economy in place in several locations in Aotearoa New Zealand. We took an action-research approach, working to understand what was happening in each location while also engaging with people to share knowledge from the Sustainable Seas National Science Challenge. The research aimed to:

- synthesise information from across the Challenge
- focus on how that information can lead to impact
- supplement prior research with new findings about supporting the Blue Economy (BE).

Blue Economy is a term that refers to sustainable economic activity associated with the moana or the ocean. The Sustainable Seas National Science Challenge defines it as ‘marine activities that generate economic value and contribute positively to social, cultural and ecological well-being’. It includes direct use of ocean resources, such as open-water fishing or aquaculture in the Marlborough Sounds, but can also refer to services that use marine resources in different ways, such as ports. The idea of the Blue Economy also recognises non-commercial uses of marine resources, including community use of ocean spaces for gathering or hunting kaimoana, recreation, or cultural and spiritual engagements. This definition of Blue Economy dovetails with te ao Māori interpretations as well as ecosystem-based management (EBM) approaches to resource use and stewarding.

Transitioning our current marine economy to a thriving Blue Economy is important, both locally and nationally for Aotearoa New Zealand. Currently, fishing, aquaculture, and coastal and marine tourism are important industries nationally, especially for coastal communities and regional economic development. They employ thousands of people and provide an economic base for multiple communities and regions. Opportunities exist to grow aquaculture and tourism into thriving regional industries and to transition fishing to a world-leading high-value, low-impact industry. Other opportunities lie in blue technology.

Because the Blue Economy refers to a wide range of activities, skills, people and organisations, it’s difficult to summarise. It’s also difficult to draw a boundary around the Blue Economy. For example, to what extent is a harbourside pub part of the Blue Economy? In our work, we’ve attempted to keep a broad perspective on the Blue Economy, but much of the focus in the places where we worked was on fishing and aquaculture.

1.2 This is an overview report

This report provides an overview of the research and findings, paying particular attention to operating models for the Blue Economy in Aotearoa New Zealand. The research project has also produced a longer report with considerable detail about the field work and findings. The emphasis in this report is making the information useful: what Aotearoa New Zealand can do to develop its Blue Economy.

The rest of this report discusses the following topics.

- Section 2 reviews the framework and the context for the research.

- Section 3 describes the work we did in the field in a few locations.
- Section 4 provides results and discussion.
- Section 5 describes the elements of operating models for BE in this country.

2 Framework and context for the research

2.1 The Challenge and its research strands

Ko Ngā Moana Whakauka / Sustainable Seas is one of 11 National Science Challenges, which are large mission-led research initiatives that will be finishing in 2024. Since its launch in 2014, Sustainable Seas has been focused on the New Zealand marine space to understand how to enhance the use of marine resources while respecting environmental limits:

The aim is that the New Zealand marine environment is understood, cared for, and used wisely for the benefit of all, now and in the future (Ministry of Business, Innovation and Employment, 2018).

The Challenge has been organised around several interwoven strands that provide a basis for a holistic approach to understanding the marine space:

- Ecosystem-Based Management (EBM)
- Blue Economy (BE)
- Te Ao Māori (TAM).

In the final part of the Challenge, the aim has been to synthesise its work across these strands. This focus on synthesis provided an important context for our research — although the research topic was *the Blue Economy in place*, we also considered EBM and TAM as integral to achieving a successful BE.

2.2 Pilot research on a Blue Economy synthesis

Our team was first involved with a pilot project to decide on the terms for a larger piece of work. The first part of the pilot project reviewed the Challenge research to date on the Blue Economy. That review identified two broad groups of research.

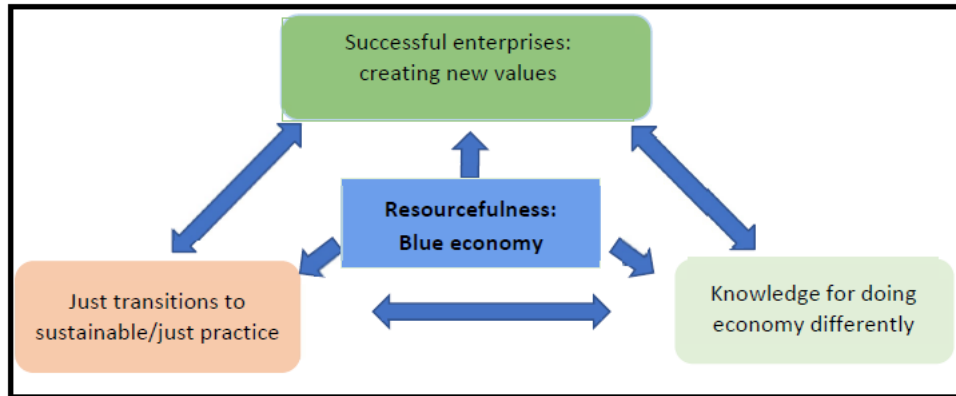
- One group of projects focused on how businesses and government agencies could improve how they managed marine resources. The focus was on bringing into play better information from EBM research or more consideration of mātauranga Māori to promote changes that supported the Challenge mission.
- A second group of projects focused on commercial opportunities from developing new products from marine resources. They included work on developing new seaweed products and improving production of spat.

A second part of the pilot project critically engaged with the economics research published by the Challenge. The aim of that engagement was to identify some key elements, consider them through the lenses of multiple economic theories, and look for any gaps that might get in the way of the Challenge having impact. We highlighted work by Lewis, et al. (2020)



that put a successful and resourceful Blue Economy at the centre of a just and sustainable economy (Figure 1).

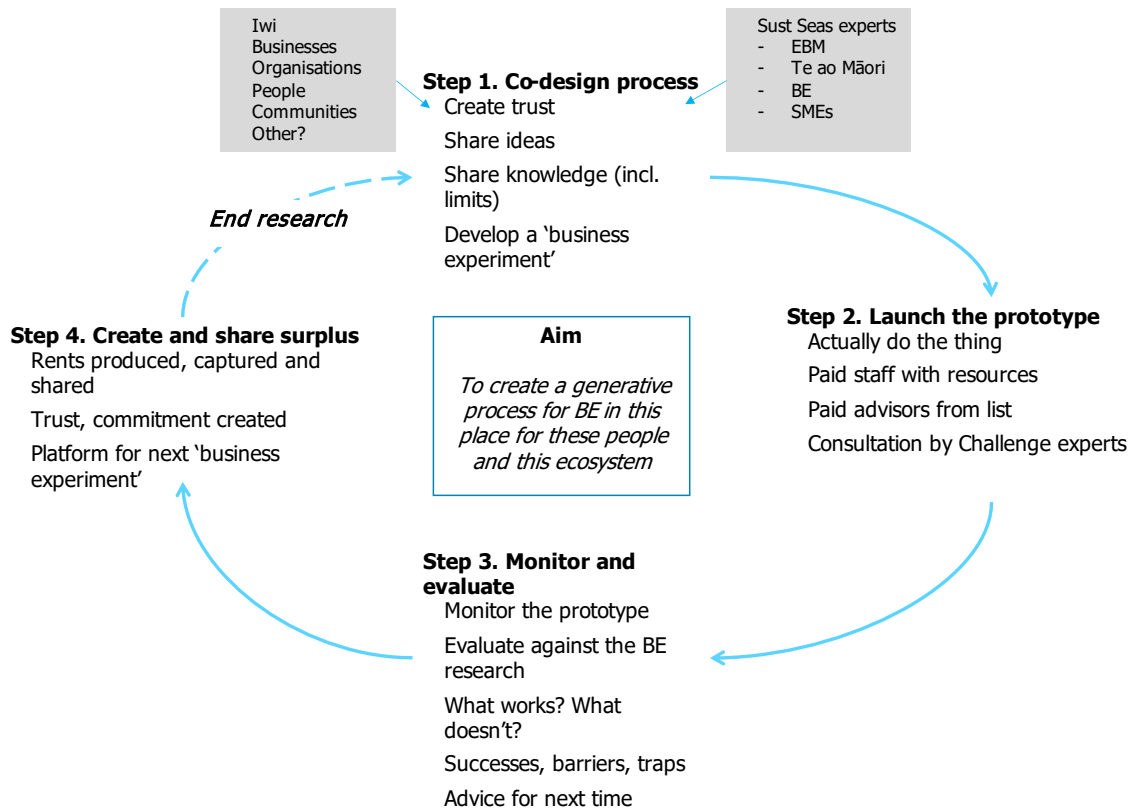
Figure 1 Blue Economy strand: creating value from the Blue Economy



Source: Lewis, et al. (2020)

A third part of the pilot project created a scope for further research that would begin to address the gaps we had identified. The initial scope described an entire process that started with co-design by a wide range of stakeholders, ran through a process of prototyping and development, and eventually produced and distributed a surplus in an appropriate way. This scope is shown in Figure 2.

Figure 2 Process for BE research with impact



Source: NZIER

This scope was more ambitious than could be undertaken in the context of the remaining time and resources of the Sustainable Seas Challenge. The final scope of the project therefore shifted in two ways. First, it would explore what was already happening in places and communities in Aotearoa New Zealand and consider them in light of the 'ideal' process of Figure 2. Second, it would produce advice and plans that others could take forward in the longer term.

2.3 Framework for the project

Based on our critical engagement with the prior work in Sustainable Seas on BE, we identified four elements or dimensions. We wanted to explore them further to understand how they might support a thriving Blue Economy that was integrated with ecosystem-based management and te ao Māori.

- **Desire / engagement** – we have taken from both psychoanalytical and economic literature to place desire at the centre of the research. This is the motivational 'spark' that's necessary to move people toward wanting the marine space to be part of their activities, their work, and their consumption patterns. An example is the young person who discovers surfing or diving and is hooked on the sea for a lifetime. Psychoanalytically, desire is at the core of who we are and what we do (Lacan, 1981; Vanheule, 2016). Economically, desire is central to consumption and markets (Robinson, 1964). To describe the Blue Economy, we need to understand what people desire in relation to the sea, the marine space, and the things they do and buy.

- **Narrative** – people are story-telling creatures, and even economics is based on telling a good story (McCloskey, 1983). People make sense of their actions and activities through narratives about who they are and how they live. In addition, place-based policies and interventions have an emotional component to them (Beer et al., 2020), driven in part by their identities (Brown et al., 2019). The narratives of a place and its people provide both a way to understand the current situation and a leverage point for creating change. This is also an element with salience to Māori and non-Māori, which provides a way for the Blue Economy research to connect with the te ao Māori strand.
- **Surplus** – a key idea we took from the Sustainable Seas Blue Economy research was that of a surplus (Lewis et al., 2020). In that work, ‘rent’ is an excess or premium that can be allocated to communities, and rent is defined as surplus revenue after accounting for production costs. Taking too much from the marine environment leads to overfishing or depletion and eventual collapse. If the Blue Economy is to produce an economic surplus, that raises the question of how it is to be produced. Where ecosystems are degraded, practices to this point have created the degradation. Creating an approach with an economic surplus that does not degrade the marine ecosystem is, therefore, a change to existing practices.
- **Institutions** – the final element we included was institutions, based on prior research on community resilience (Fielke et al., 2017). Institutions are a way to regulate individuals’ behaviours, so they can support the sustainable use of resources (Ostrom, 2000). Institutions are also a mechanism to channel resources to specific uses. Formal institutions can also provide more stability than the individuals who make up groups and communities (Fielke et al., 2017; Rhodes et al., 2016) – they provide a structure for succession and continuity. They are also part of the power dynamics that operate in the marine space (Le Heron et al., 2019).

These four elements provided a framework throughout the project. At several points, we returned to them to assess whether we were furthering our understanding of these elements. We also organised our reflections on our work in three different locations around these elements.

3 Description of the research

3.1 Moananui case study

3.1.1 A cluster approach to the Blue Economy supports innovation and diversity

Our research and engagement with Moananui in Whakatū Nelson provides evidence that a cluster approach to the Blue Economy can:

- speed economic development
- support diverse economic activity
- support environmental, social, and cultural values.

Moananui has an inclusive approach to economic activity and is also embedded in the Blue Economy principles (Sustainable Seas National Science Challenge, 2023). This case study

investigates the impact on economic development of a cluster approach that also incorporates environmental consciousness through the Blue Economy principles.

3.1.2 Context for the work

Regional stakeholders in Te Taihū have long identified the need for a Blue Economy cluster and such an initiative was first signalled during the Te Taihū Intergenerational Strategy process in 2019. It was subsequently included in the region's medium-term economic development plan, The Nelson–Tasman Regeneration Plan (2021), and developed by the Kōkiri Forum made up of regional economic stakeholders convened during the COVID-19 pandemic.

Moananui is leading a cluster approach to developing the Blue Economy. Moananui is a non-profit organisation based in Nelson, with seed funding from government, the Sustainable Seas National Science Challenge, and several partners. Moananui is a membership-based cluster dedicated to the development of the Blue Economy in Aotearoa New Zealand. Its partnership model seeks to bring together forward-thinking organisations across diverse sectors to address challenges and promote BE growth.

To achieve this, Moananui has established a headquarters in Whakatū Nelson that serves as a collaborative space for meetings, training, and project support. The organisation is committed to fostering the Blue Economy through knowledge sharing, facilitating commercialisation pathways, and championing systemic changes in education, regulation, and social licence. The cluster has developed a pledge that serves as a criterion for partnership alignment with its mission, emphasising the importance of trust and a shared commitment to sustainable development.

3.1.3 Why it is relevant

A cluster is a place-based ecosystem of related industries, firms, people and institutions that has developed enough scale to be economically important. A cluster is a type of agglomeration, which is the economic term for a concentration of people and related business activity in a particular place (Maré & Graham, 2009; Williamson, Paling, Staheli, et al., 2008; Williamson, Paling, Waite, et al., 2008). The economic benefits of agglomeration are well known. Having a concentration of businesses in related industries allows them to learn from and adapt to each other.

A cluster approach to the Blue Economy works with the organic and localised processes of clustering and agglomeration to improve economic development. It builds on and harnesses a diverse local economy by taking a wide perspective on what constitutes BE businesses and interrelated industries. In this, a cluster approach tends towards a more diverse set of actors and activities than an economic development strategy organised around a dominant industry. The result is more complex, but can also be more resilient.

3.2 Te Taihū case study

3.2.1 A restoration-driven approach can, with time, support a diverse Blue Economy

Our research in Te Taihū o te Waka-a-Māui (the top of the South Island) explored efforts to have community engagement and a consensus approach toward restoring the marine ecosystem. We found that the approach could support development of marine-focused economic activity in line with ecosystem-based management and Te Ao Māori, but that the



approach has a long-term focus and could struggle to keep people and organisations involved over the long term.

The case study aims to shine a light on the processes that bring BE ambitions to fruition in Te Taihu, understanding the depth of alignment between practice and principle, and highlighting the connections and opportunities this presents in understanding a Blue Economy in place for Te Taihu.

3.2.2 Context for the work

The keystone engagement for this project was in Te Taihu with the Kotahitanga mō te Taiao Alliance (KMTT Alliance). Te Taihu (the top of the South Island covering Nelson, Marlborough and Tasman) is positioning itself as the epicentre of the Blue Economy in Aotearoa New Zealand. It has the largest fishing port in Australasia and produces 70 percent of the country's aquaculture. It includes commercial organisations, such as Talleys and Sealord, and research entities, such as Cawthron Institute and an office of Plant and Food Research. There are nearly 400 Blue Economy businesses in Nelson Tasman.

KMTT Alliance is developing a large-scale oceans restoration project led by alliance partners operating under a co-governance model. The Alliance has developed a marine strategy, through a process called Restoration by Design, which has culminated in a proposal for the largest piece of work that alliance has ever undertaken. Its a joined-up approach to a large-scale restoration of the ocean ecosystem from Kawatiri Westport across to Kaikoura.

We approached the Alliance to:

- become involved in their planning and design activities in 2023 to contribute knowledge and skills around communications, design, and kaupapa Māori
- learn about their processes, people, and organisations involved, and the actions that the Alliance plans to take over the next few years.

3.2.3 Why it is relevant

The Blue Economy in Te Taihu is increasingly being brought into focus — it's a key pillar in the region's economic strategy and is more visible in the narrative about the region than it was a year ago. This development makes Te Taihu a good location for study for two reasons.

- Te Taihu is interested in the Blue Economy and putting resources toward it.
- Supporting the Blue Economy in the area is likely to have impact.

KMTT Alliance has an ambitious undertaking ahead of them. They have a strong lineup of partners who can exercise influence and attract investment. They now need to build a strong narrative to support the change and stimulate desire in the community for their restoration agenda. The nature of KMTT Alliance is such that understanding how it operates is relevant not just to the Blue Economy strand of Sustainable Seas, but also the te ao Māori and ecosystem-based management strands. The Alliance operates a co-governance model with Te Taihu iwi, which establishes the overarching restoration agenda and enables a portfolio of projects to occur with their own operating models. The goals of the Alliance are around ecosystem restoration. The Alliance is therefore operating at the nexus of the research topics of the Challenge. Observing the Alliance and supporting it to have impact

can demonstrate how the science of the Challenge can be translated into impacts on the environment, economy, and community.

3.3 Motupōhue Bluff

3.3.1 An attractor approach to the Blue Economy can boost economic activity but may not include everyone

One approach to developing a Blue Economy relies on a key dominant business to attract talent, investment, and additional businesses. This approach can be effective at generating economic activity and development, which is often focused around the dominant business. We present a place-based case study that describes an attractor approach that's currently happening in Motupōhue Bluff. The approach is successfully locating and supporting several innovative Blue Economy businesses, making use of a set of resources specific to that place. We also show how that type of economic development is focused on particular businesses. Other businesses and people are, by contrast, not thriving.

3.3.2 Context for the work

Motupōhue Bluff is a town of 1,800 people, around half of whom identify as Māori, who are proud of their heritage, local identity, community, and impressive local marae. The town is in the midst of a significant period of growth in Blue Economy activities. Land-based aquaculture is developing at the Ocean Beach Aquaculture Park, which houses several businesses and is attracting more. Marine aquaculture is also developing with a proposed Ngāi Tahu open ocean farm off Rakiura Stewart Island, and interest in reviving an aquaculture farm in the harbour. Meanwhile, national and local government and business agencies are supporting a revived aquaculture cluster modelled on the active engineering cluster. In addition, Murihiku Southland's tourism industry — based partly on marine activities — is booming and Environment Southland is in the midst of its coastal plan review.

We started this case study by reviewing prior research about the area. We determined that Cawthron's extensive work around seaweed presented opportunities for both production and restoration. Cawthron's work highlighted the opportunities for farming the rimurimu (seaweed) species Karengo. Karengo has been important to Māori as a source of food and exchange, and is the Nori used around the world to wrap sushi rolls.

We made two visits to Murihiku Southland to conduct further research. We found:

- a cluster of early stage businesses developing in a land-based multi-species aquaculture centre
- a proposed land-based salmon farming operation that would make the place a global leader in this kind of aquaculture
- a legacy wild-capture fishing industry confronting a slow decline that could destroy Bluff's deeply rooted social and economic identity as the 'best little oyster capital in the world'
- lengthy and contradictory consenting processes facing companies attempting to expand job opportunities in Bluff



- an energetic and supportive group of institutional actors keen to see aquaculture thrive in and around Bluff
- a booming seasonal marine tourism sector wrestling with over-tourism.

3.3.3 Why it is relevant

Motupōhue Bluff could benefit from more economic opportunities and activities. The population has shrunk from 3,000 to 1,800 after the meat works closed, many of the buildings in town are run-down, and the smelter that provides local jobs has been threatening to close for years. Meanwhile, the location of the town at the tip of a peninsula facing the harbour and beyond it the southern ocean, makes the marine space central to its potential. The people and their identities descend from Māori, who sailed these waters and captured the birds, fish, and other creatures living there. They also descend from sealers and whalers who were among the first Europeans to settle in New Zealand.

The place is challenging from both economic and environmental perspectives. The New Zealand economy generally struggles with lack of investment and distance from markets and global value chains. Motupōhue Bluff has all those problems, magnified. At the same time, it has considerable resources in its large and cold water space, and has people and organisations working to develop those resources. It is a perfect location to take on the challenges of Blue Economy development and understand how it can work. Environmental issues also loom large. Tourism is booming in a way that other activities are not, but is running up against resource constraints. The Ngāi Tahu-proposed salmon farm has been stopped for the moment because it is adjacent to Rakiura National Park and to an area of Outstanding Natural Character.

Our visits and discussions found many of the elements necessary for a thriving Blue Economy: people, organisations, enthusiasm, experience, technology, defined products and markets, and more. These elements exist in a place that includes all the strands studied by Sustainable Seas. And yet, somehow, the place and its people appear to be struggling.

3.4 Education and workforce

3.4.1 Context for the work

In scoping the project, we identified a Blue Economy project and challenge. People are interested in setting up the Te Huata mussel spat hatchery near Te Kaha in the North Island, but are concerned about finding enough employees at different skill levels to operate the facility. As we engaged with Cawthron Institute and aquaculture industry members, we learned that increasing the number and skills of the future workforce is an important issue for expanding aquaculture. The Blue economy will need enough of the right people with appropriate skills living in the right places.

To make the case study feasible in the time and resources available, we focused on existing secondary education and the marine environment in the Nelson area. Understanding how schools can be a nexus of engagement and exposure to possible careers in the marine space will contribute one potential channel for activating the desire and engagement that will be needed for a successful Blue Economy in place.

Initial community engagement involved getting in touch with people and organisations through personal and professional networks and official channels, and having a series of



one-on-one meetings to develop relationships and a picture of the communities the case study covered. We then collected data through semi-structured interviews. From the school interviews, it became evident that a major barrier for schools being able to implement and sustain the integration of aquaculture or marine sustainability courses in their school curriculums was a lack of appropriate professional development (PD) for the teachers responsible for teaching these subjects. Therefore, we decided to make providing professional development for school staff the main focus of the organisation interviews.

3.4.2 Why it is relevant

Prior work has raised the issue of finding and training the workforce needed for the food and fibre sectors (NZIER, 2023a, 2023b). The aquaculture sector has been identified as a potential growth sector, with a strategy to more than triple revenues over the next decade (New Zealand Government, 2019; NZIER, 2023a). The sector therefore needs its workforce to grow faster than the general economy and than other parts of the primary sector. People who are currently school children will be the workforce of the future, and getting them interested and involved in the aquaculture sector may help with meeting future workforce needs of the sector.

We found mixed results when it came to getting secondary students interested in aquaculture. Some courses were set up at some schools in the Nelson Marlborough region. Those programmes were the result of a few motivated and involved people making an effort to set them up. The schools said that this is time and energy that most schools do not have the ability to dedicate to developing a curriculum on top of full teaching and management roles, mainly because of cost. The students interviewed felt they got a lot out of the courses. However, we also heard that families and community members felt that aquaculture was for 'dummies'. Teachers interviewed wondered whether careers advisors knew enough about the aquaculture industry to be able to guide students into these career paths.

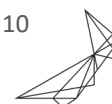
This case study on education appears to find both committed people and some resources from schools and businesses, but also a lack of joined-up programmes and support. The Blue Economy is going to need people to develop and succeed; aquaculture will be one part of that. Developing the people resources for that to happen will be important.

4 Results and discussion

4.1 Key results

With all four parts of the study, we found a lot of interest in Blue Economy activities, especially in aquaculture. This interest was evident in:

- the ability of Moananui to attract members and funding
- the work by KMTT Alliance to support both ecosystem-based management and the Blue Economy in Te Taihū, with a te ao Māori kaupapa
- the long-term interest in aquaculture and the research and business people working over many years to gather knowledge and translate it into commercial success



- the schools and teachers connecting students with aquaculture and the marine environment, making considerable investment of time and energy into their work.

We also found that the Blue Economy is often working alongside the other strands from the Challenge: te ao Māori and ecosystem-based management. Many of the ecosystem restoration activities of the KMTT Alliance are deliberately grounded in tikanga Māori. Some people involved in aquaculture in Motupōhue Bluff are tangata whenua and have a strong sense of identity. The teachers involved in setting up aquaculture programmes come from biology backgrounds, and they are incorporating ecosystem knowledge into their teaching. The work in Motupōhue Bluff and with Moananui was more focused on commercial opportunities. Nevertheless, environmental concerns and kaupapa Māori were never far from discussions.

We also found challenges and difficulties. These could be summarised as lack of resources and lack of coordination. In each location, people were working without enough time or budget and doing what they could, either to develop an aquaculture site or a new curriculum. Many people were working somewhat in isolation. Some of the projects in Motupōhue Bluff involved a few people working by themselves, and teachers were each developing their own curriculum without learning resources networks or professional development. By contrast, the KMTT Alliance does involve considerable collaboration among a large group of entities, including iwi entities and government. Its success is partly due to the participation of a wide group of people.

4.2 Through the framework lens

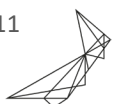
The framework presented above helped us reflect on the data and observations from our field work.

4.2.1 Desire

Across this research, the people we met, talked, and worked with are passionate about the moana, the marine space, and the Blue Economy. They have found something special in the marine environment or the species that live in it, and have invested themselves in making something more out of what they found. At the same time, they have invested the moana with something extraordinary or additional that justifies their engagement with it. For them, this is not just a place or a job or a way to make money: it is imbued with additional meaning. Teachers, for example, have had to spend their own time to develop new curriculum in addition to the curriculum available through NZQA. They say that it is worthwhile because it provides students with an unusual or extraordinary experience. Moreover, some of these students are extraordinary in that regular schooling does not appeal to them, but the specialised aquaculture curriculum does. The work on Karengo reveals the same passion. Cawthron scientists have been working on the science and production of Karengo for years. Its resistance to domestication has become part of its charm: it is a wild species that could bring so much health and wealth to consumers and communities.

For the people with whom we engaged, we did not find that the Blue Economy was especially lucrative or that it was generating considerable status or other social currency — quite the opposite.

- We saw plant and equipment that was old, run-down, or repurposed.



- The jobs and businesses involved are not well-paid or extremely profitable.
- The education programmes were considered for ‘dummies’.
- The usual external incentives – money and prestige – were not driving behaviour.

At this stage of its development, the Blue Economy is being driven by the desires of participants to be involved with the moana and in something with considerable potential. We did not investigate these drivers with our participants, but from our observations, the desire can be linked to several sources or ideas. One is connection to place; the moana is very present for coastal communities. One is connection to culture, history and identity; both Māori and non-Māori have a history of seafaring and receiving or harvesting the sea’s bounty. Another is wildness; the sea as unsettled, the creatures there as untamed, the marine space as not yet governed. All these ideas serve as a way to connect with people: community members who want to develop a marine sanctuary, students who would benefit from educational alternatives, and entrepreneurs who are willing to have a go at something new.

4.2.2 Narrative

The desires and actions of the people who participated in the research fit into narrative structures. In part, this is a simple consequence of the type of research we conducted. It has been qualitative research in which we engaged with people and asked them to tell us about themselves and what they were doing. When they talked with us, they talked in narratives: this is who I am, this is what I do, this is the history that brought me here, and these are the reasons or motivations. In part, these narratives are about how people make sense of themselves and the world, by telling stories. These stories are about a ‘me’ who is part of an ‘us’, and a ‘them’ who is not, and the places where the action occurs.

Consequently, the people in our research placed themselves in narratives that explained their actions. They were, for example, a Bluffie, a person from Bluff, so their interest in the sea and the Blue Economy was a natural extension of their identity. They might be entrepreneurs, so trying to crack the hard question of seaweed aquaculture demonstrated their commitment to overcoming odds in search of a viable business.

The teachers were dedicated to their schools and students, and they sought new ways to engage students and get them excited about learning. They might have whakapapa to an iwi in Te Taihū, making them part of the place and connected to what happens in the moana. These narratives included the impact of place on a person’s relationship with the world, a sense of direction or purpose, a recognition that whatever they were doing involved some difficulty or sacrifice, and a looking forward to a better outcome.

The existence of a ‘them’ was an interesting element of the research. The work with the KMTT Alliance offered perhaps the most complex ‘them’. The Alliance is motivated from an ecosystem-based management perspective; it is about the health of the moana and the marine environment. Its emergence has been focused on restoration and conservation activities but the nature of the stakeholders and strategic view of the wellbeing of the environment also calls into question existing activities and harm reduction. The Alliance recognises the sea as a resource, and the marine focus has occurred, in part, out of concern for the diminishing health and capacity of the sea to provide resources for future generations. However, the role of industry or sector-based groups in the Alliance is unclear and worthy of discussion about the role they would play. This discussion is, to some extent,



about making a ‘them’ into an ‘us’ and developing social licence for large-scale restoration. For Bluff, there are companies and investors from outside the community and outside Aotearoa New Zealand. They are different from the Bluffies and occupy a different part of the narrative, especially as it relates to place. In the education sphere, the New Zealand Qualifications Authority operates as a sort of ‘them’ that imposes requirements on ‘us’ and does not provide support, even as it makes demands.

In a narrative sense, the study participants were in the middle of their stories. They took us through the exposition — the background for the current situation. They explained the current conflict or conflicts with the main characters and their different motivations. They were looking forward to a successful resolution of their problems and a better life afterward.

4.2.3 Surplus

We investigated the surplus being produced by Blue Economy activities. We found that the Blue Economy activities we observed tended to struggle to produce that surplus. We have not done a detailed analysis to understand the economic transactions or flows involved. However, we observed that iwi, community groups, businesses, schools, teachers, and other organisations and individuals have described impacts that are small or nonexistent and long time periods before seeing results. The impacts appear to be small compared to the energy, effort, passion, and resources spent or invested. The relative sizes suggest that the Blue Economy activities in these communities, as currently configured, are struggling to produce sufficient surplus.

If we start from the idea that people make rational decisions — in the sense that people do not behave randomly but base decisions on their own wellbeing — then the activities we have described must be producing sufficient personal benefits for the people involved. We have not observed considerable material gain, nor have we observed considerable gains in status or mana. We conclude that the gains are bound up in the narratives and the desires of individuals and communities. The activities sustain those narratives, and sustain the desire of the individuals in whatever form is appropriate to them.

This conclusion is problematic for the Challenge vision of an economic surplus that can be allocated across businesses and communities. It suggests that, for many people, their participation in marine activities is not generating much economic surplus. They enjoy being involved and participating in activities like supporting students with a new curriculum, scientifically investigating a species of seaweed, and discussing and designing a new marine sanctuary. However, not all of that activity is generating an economic surplus that can be allocated to other people and uses.

4.2.4 Institutions

We observed or worked with several types of institutions in our research in the different locations. Looking across these institutions, we have several observations. In summary, people are working within generic institutions, more or less well.

The experience of schools demonstrates both the potential of existing institutions and the challenges. There is a place for aquaculture in school and the curriculum, but it is not well supported and has to carve out its niche. The central challenge is that aquaculture is not important enough to the country as a whole to attract resources. It isn’t a focus of the education system because – on a national basis – the country doesn’t need large numbers



of students for future jobs in the marine environment. This is true whether we are talking about marine ecologists or mussel openers. The Blue Economy also doesn't have large companies and industry groups with the resources to produce educational modules for teachers. Existing institutions are serving the existing economy, of which the Blue Economy is only a small part.

The work of the KMTT Alliance suggests that institutional forms or processes are being developed. The entity itself is an alliance, made up of iwi and government agencies. It is hosted and supported by an existing and well-known non-governmental organisation, The Nature Conservancy. The membership suggests that existing institutional structures are enough to start connecting BE with EBM and TAM. The liminal status of the Alliance itself — not a registered entity (it is not on the Companies Office, Incorporated Societies or Charities List), but formally recognised for many years, yet hosted by an overseas NGO — suggests fluidity or flexibility. It suggests potential that in the future something will happen and this will have been the beginning.

The formation and growth of Moananui underscores the importance of institutions. Moananui, located in Whakatū Nelson, already has a cluster of businesses and organisations working in or with the Blue Economy. Moananui is seeking to improve that cluster by creating a stronger network and attracting and channeling funding to support the cluster to grow faster and better. Moananui also wants to take the lessons to the rest of the country; having an institution will help structure and support that effort. Moananui has created an institution to support the Blue Economy principles and support the development of the Blue Economy.

Commercially, all the usual institutions are apparent. There are old companies and start-ups, hubs to support industrial development, lawyers, and investors with interests in the Blue Economy. Some large companies are involved: Sanford Ltd is on the NZX stock exchange, and Sealord has annual revenue in the hundreds of millions of dollars. Māori are significantly involved in commercial Blue Economy activities as well. For example, Sealord is half-owned by Māori and iwi are involved in fishing, aquaculture, and tourism around the motu. Both businesses and shareholding by groups are ways of organising productive assets, managing activities to generate surpluses, and channeling those surpluses to specific people or the wider community.

The observations from our research suggest that, to a large extent, the institutional forms needed to organise behaviours to support the Blue Economy already exist and are being used. These institutional forms are also sufficient to connect with te ao Māori — Māori people and entities control some of these institutions. They are also important, at least within a local place or a part of the economy. Connecting with ecosystem restoration is perhaps more difficult, given the lack of formal independent status of most natural resources and the difficulties managing economic externalities. Nevertheless, both existing and emerging institutions were observed in this research.

Existing institutions do not seem to be impeding the development of BE alongside EBM and TAM. However, making them work or making them work better is the challenge.

4.3 Implications for the Blue Economy principles

Work in the Sustainable Seas Challenge has proposed a set of Blue Economy principles (Sustainable Seas National Science Challenge, 2023):



Accountable	<i>Adopting decision making and reporting frameworks that consider natural, social, and cultural effects of all proposed and actual uses of ocean resources.</i>
Te Mana o te Moana	<i>Prioritising the health and wellbeing of the moana informed by a Tiriti o Waitangi-led approach where the rights and responsibilities of tangata whenua are provided for.</i>
Regenerative	<i>Adopting practices that actively support and restore marine ecosystem health.</i>
Inclusive	<i>Engaging with communities to achieve multiple benefits for people and the environment.</i>
Intergenerational	<i>Empowering holistic governance and management that support the moana to provide for long term social, cultural, environmental, and economic wellbeing.</i>
Prosperous	<i>Generating economic success and actively transitioning towards resource use that is productive, resilient, and enhances ocean-dependent livelihoods and coastal communities.</i>

The research in this case study provided material for reflecting on these principles:

- **Accountable** – We found a few ways in which accountability was considered. From the perspective of environmental organisations, accountability refers to ensuring that Blue Economy businesses also respect EBM. They should not be over-exploiting resources, whether that is taking too much fish or shellfish from a population or creating over-tourism in marine and coastal areas. However, accountability also referred to government decisions about resource use and permitted activities. Accountability for policy-makers was about applying regulations consistently, transparently and in accordance with evidence. We found that whilst iwi participate as stakeholders currently, there is a desire to enact more authority and mana moana over these domains to create accountability. We see clues about what this might look like with the exercising of rāhui for example. Accountability is a function of relationships among the multiple stakeholders in the Blue Economy.
- **Te Mana o te Moana** – Many of the activities we encountered involved Māori or were cognisant of Māori interests and kaupapa. This was partly by design: the research team looked for examples of place-based BE that connected with the TAM strand of the Challenge. We would not conclude that all BE activities are currently led by Treaty principles, tikanga, or mātauranga Māori. Many operators, community organisations, and officials are still trying to understand or integrate TAM within predominantly colonial business and governance frameworks and structures that tend to conflict with these ideas.
- **Inclusive** – The notion of inclusivity is a broad one. We encountered interest in collaborative approaches and indeed collective value propositions. We also encountered close relationships between community and business and community and government – particularly in relation to the Te Tau Ihu Intergenerational Strategy. The Strategy is very much an exemplar of inclusive place-based development. Among individual businesses, concerns with being inclusive remain largely centred on engaging with their communities and many recognised the importance of doing this. We did not encounter evidence of exclusivity, beyond standard commercial



requirements to exclude people from property and technology. There was interest in getting more people involved in BE, from companies, local government, schools and industry. The challenge was how to get people involved who were not already interested. This seems to be a perennial challenge. It may also be related to other principles. A more prosperous and stable (intergenerational) BE that spoke to people's identity (Treaty-led and place-based) would likely help to build a more inclusive Blue Economy and associated co-developed social acceptance of business activities.

- **Intergenerational** – We observed people and organisations who were engaged and invested in the Blue Economy over many years. Māori enterprises express a commitment to intergenerational returns and to long-term ocean health. We also found people and programmes that were struggling for resources to maintain services or continuity. Supporting an intergenerational approach to investment, management, and production requires both long-term resourcing, strong and resilient business models, and institutions to manage resources and activities. The institutional forms already exist, but not all operators have the resourcing to make enact their commitments.
- **Prosperous** – A prosperous BE is part of what drives people and companies. However, our research has also shown the importance of identity and engagement for people's participation in BE. We have found several examples of activities that are not economically prosperous, where activities are in decline or companies have struggled over many years. We also encountered business, lobby group officials, and government officials for whom prosperity reduced simply to growth. These observations suggest that prosperity as defined by Sustainable Seas is not always the primary immediate driver of activity and actions. Efforts are required to ensure business resilience, community recognition of the value of business success, and the difference between prosperity and growth narrowly defined. It may be possible to activate greater interest in prosperity by connecting economic productivity with efficient use of natural resources and social and environmental goals (NZIER, 2022).

4.4 Implications for place-based development

Place-based development provides a corrective or challenge to government policies that are applied universally (Beer et al., 2020). It derives from the idea that the specifics of a place and its community are important for achieving good outcomes. Universal policies result from a central government drive to make localities 'legible' or understandable and therefore administrable, and thereby flattening differences across locations (Scott, 1998).

Beer, et al. (2020) identified 10 key determinants of success, and we found evidence relevant to them in our work.

- 1 **A focus on place that uses local opportunities and resources** – In each location, we found people focused on their places and what they had to offer. This appears to be a standard within the communities. The challenge is ensuring that outside actors (government and investors) connect with local people and organisations.
- 2 **Engagement with local institutions** – This determinant aligns with our framework element of Institutions. We found considerable evidence of engagement with local institutions, such as businesses, local government, rūnanga and iwi, and schools. Engagement with iwi is typically responding within a post-settlement context. It is more focused on governance and representation of entities, than operationalised



through these institutions or indeed reaching key champions closer to the action (for example, those exercising customary rights in the moana, hapū, and place-based groupings). Observations around Motupōhue Bluff suggested that some commercial activity there was less connected to place.

- 3 A focus on sustainable and transparent governance** – Governance was not widely investigated, but we did find a considerable focus on sustainable and transparent governance with the Kotahitanga mō Te Taiao Alliance. The governance structures are held together by strong local relationships and a collective sense of commitment to co-governance at a strategic level. The next phase of the governance progression is to contend with ways in which iwi can exercise rangatiratanga and realise a degree of autonomy over restoration projects, which is something Te Taihu iwi have called for. There is a need to properly integrate the governance and operations of the restoration strategy for Te Taihu to achieve a more efficient and impactful use of constrained capacity among key stakeholders.
- 4 An emphasis on value creation** – The focus on value creation aligns with our framework element of producing a surplus. As discussed, there is some interest in value creation. There is a sense that more value can be realised through linked-up activity that is stronger than its composite parts. The value of this can be understood through enhanced regional identity, contributing to product provenance and the attraction of mission-aligned visitation and investment.
- 5 Consideration of performance over a long timeframe** – The observations from our research pull in different directions on the subject of timeframes. First, we encountered identity narratives based on long timeframes: the development of the ‘Bluffie’ identity from early intermarriages between Māori and Pākehā sealers and whalers, or long planning horizons like the Te Taihu Intergenerational Strategy. We also found people and businesses who had invested time and resources into activities over many years, such as the Karengo research or the development of new aquaculture farms. However, we also found that performance in terms of generating a surplus over the resources used was mixed. These examples raise an important question for investing over the long term: when to stop investing and cut losses.
- 6 Targeted assistance for groups negatively affected by change** – Targeted assistance, or Just Transitions in the policy sphere, was not a topic that arose in this research. If anything, the focus was on providing wider access to opportunities.
- 7 Acceptance of the emotional dimension of place and change** – Our work has found ample evidence of emotional connections to place and the central place of those connections in developing BE in place. Some planning takes those connections into account, such as work by KMTT Alliance. However, it is not clear how government policy would ‘accept’ the emotional dimension.
- 8 Outcome and output measures** – Our research did not focus on outcome and output measures, but several measures were implicit in the work. For example, the research on schools showed that teachers are offering an aquaculture option to keep students engaged and help them achieve secondary qualifications. Educational achievement is a measure of outcome. Similarly, KMTT Alliance is working with an EBM framework, and can draw on existing metrics that apply to ecosystem health.
- 9 Demonstrable and significant achievements built into programme design** – The activities that we investigated were based on making achievements or creating



impacts: educating students, improving marine space management, and creating viable businesses. We did not find much involvement in process-based activities for example, activities whose purpose is to be participating in something rather than achieving something.

- 10 Agreement by stakeholders of the goals of place-based policy** – Our work had little focus on place-based policy. However, we did find that stakeholders were involved in activities in each location. The KMTT Alliance Strategy does provide guidance around place-based policy by demonstrating a macro regional view and hyper-localised observations on environmental health and restoration activities. We cannot judge the level of agreement with any place-based policies, but we did find that stakeholders are identifiable and could readily be engaged to develop place-based policies.

The implications of our research for place-based development are somewhat mixed. There are active stakeholders drawing on local knowledge and deep roots to place and whakapapa. The institutions exist to support and be supported by place-based policies, and we found examples of people working for long-term outcomes. The gaps would be around the emphasis on value creation, particularly creation of value that can be shared or marketed, and around recognising and mitigating negative impacts from change. The context is there for place-based development through BE in place, but generating the required surplus is a key challenge.

5 Operating models for BE in Aotearoa New Zealand

As an output from our research, we were asked to make recommendations for operating models for the Blue Economy in Aotearoa New Zealand. We are not in a position to develop a full place-based policy that takes into account the Blue Economy, ecosystem-based management, and te ao Māori. However, we have some ideas about the elements that would make a stronger model, whether the activity is commercial, ecological, social, or cultural.

The context is our overall assessment from the field work. Most of the elements of a strong Blue Economy in place exist in the locations we studied and, by implication, other locations in Aotearoa New Zealand. The key missing piece is the economic surplus. To do more and have more impact, Blue Economy activities have to move beyond a break-even level. Key to doing this will be to identify specific actions or activities that are capable of generating a surplus – of using resources efficiently – and those actions or activities that should be stopped. Doing that work of identification would involve local stakeholders and outside experts harnessing energy and engagement with direction and purpose. This is the work of vetting opportunities and doing due diligence to find the best options. Then, once those opportunities are successful, their surpluses can be reinvested in the local stakeholder group to support the next opportunities.

If the problem is narrowing the focus on a few selected activities, the question arises, who has the authority or mana to direct that process? The process would involve saying ‘yes’ but also saying ‘no’, or at least, ‘not yet’. That authority could rest in a person or an organisation, but there needs to be enough acceptance of the process and decisions to avoid a splintering effect. Each place will have its own answer to this question.



Given that context, here are some important elements for Blue Economy operating models in Aotearoa New Zealand.

- **Multiple stakeholders** – many stakeholders are involved in every activity and decision. There tends to be good recognition of the importance of involving stakeholders in designing and permitting activities. However, the importance of having a wide range of stakeholder views represented should not be overlooked. Examples of stakeholders are long-term residents and new arrivals, property owners and renters, tangata whenua and tangata tiriti, different generations and age groups, multiple occupations, students, business owners and managers, and policy-makers.
- **Champions** – throughout our work, we found evidence of champions and their impacts (see also, Brown et al., 2019; Rhodes et al., 2016). Passion and engagement are important in Blue Economy and marine activities. Champions do two things: they connect people and they keep people excited about a task. Champions can help carry an activity through the troubles and defeats.
- **Local variation** – from our work and the literature (Beer et al., 2020; Scott, 1998), it is clear that a universal approach to the Blue Economy is unlikely to work and likely to waste resources, including people’s interest and engagement. Certainly, frameworks, approaches, and requirements can be established to provide accountability and consistency for policies or investment. However, there also needs to be flexibility so that local conditions and concerns are part of the Blue Economy in place. The exact amount of flexibility cannot be determined beforehand. Instead, a process that allows for locals to be meaningfully involved (high on Arnstein’s ladder of participation (Cornwall, 2008)) can produce the feedback needed to provide local variation.
- **Coordination** – not a lot of resources are available for Blue Economy development. Resources need to be used efficiently. Also, the Blue Economy is competing with other interests that are more visible and organised, for access to money, attention, time, and other resources.
- **Assessment of local resources** – prior to coordination, it would be helpful to have an inventory of local resources based on an existing holistic framework, such as the four capitals or the Living Standard Framework. Looking beyond commercial or economic resources is important.
 - The environment needs to be able to support the types and scale of activity envisioned. Also, government and local populations need to believe that the environment can support the activities.
 - The social aspects support the commercial activities. As we have shown, narratives and the associated identities are part of why people are involved in marine activities. In addition, social approval is helpful for bringing new people to Blue Economy activities, such as high-school students. Finally, the social sphere provides a social licence to operate, which can produce pressure on government to pursue appropriate policies.
- **Communication and engagement** – a challenge with marine activities is that they are not especially visible to most people. They happen ‘out there’ or under the water, away from most people. Activities have to be made visible to get people interested and excited. There is currently a demonstrable example of connected and aligned thinking around how to activate community engagement and establish a strong



platform for transformation. We found there was typically low awareness among communities of the health of the marine environment and the restoration work occurring to restore wellbeing in the moana.

- **A formal entity** – this project and other place-based research has shown the importance of institutions. They can provide stability, continuity, and accountability, which are needed for successful place-based development. Our work has shown that many institutional forms are available. The formal entity will be different depending on the local focus. It might be an iwi, hapū, or rūnaka, or it could be an industry group, business, or marketing board. Other options are a governmental organisation or a non-profit organisation that can harness interest in the environment and the location. Regardless, a formal structure can exercise authority, provide transparency, channel activities, and accumulate and distribute surpluses from successful Blue Economy activities.

Based on our research, we believe we can identify three operating models:

- A **cluster-based approach** focuses energy and resources on creating a diverse sector, and it can incorporate Blue Economy principles of inclusivity and environmental sustainability. Moananui in Whakatū Nelson is an example of an explicit cluster that supports a diverse set of businesses.
- A **restoration approach** centres participation, collaboration and environmental values. This approach uses a long-term process to support wider social, cultural, and environmental wellbeing, which in turn supports the Blue Economy. The Kotahitanga mō te Taiao Alliance in Te Taiuhu is an example — at its heart is a focus on restoring the marine ecosystem while being grounded in kaupapa Māori.
- An **attractor or anchor business approach** is a traditional approach to economic development applied to the Blue Economy. It develops economic activity around a key business or resource, generally with a commercial mindset. The experience of Ocean Beach Aquaculture Part and Motupōhue Bluff provides evidence of the strengths and challenges of such an approach.

These approaches will work in different ways in different places. As we have shown, the place-based approach recognises the resources, aspirations, and challenges in each location. A place-based approach to the Blue Economy seeks to develop commercial and other activity connected to the marine environment while being conscious of the particular geographies of a place.

6 References

- Beer, A., McKenzie, F., Blazek, J., Sotarauta, M., & Ayres, S. (2020). *Every place matters: Towards effective place-based policy*. Taylor & Francis Group.
- Brown, M., Kaye-Blake, B., & Payne, P. (Eds.). (2019). *Heartland strong: How rural New Zealand can change and thrive*. Massey University Press.
- Cornwall, A. (2008). Unpacking 'Participation': Models, meanings and practices. *Community Development Journal*, 43(3), 269–283. <https://doi.org/10.1093/cdj/bsn010>
- Fielke, S. J., Kaye-Blake, W., Smith, W., & Vibart, R. (2017). *Operationalising rural community resilience: Framing indicators for measurement* (Report for Resilient Rural Communities Programme RE500/2017/001; p. 30).



- Lacan, J. (1981). *The four fundamental concepts of psycho-analysis*. W.W. Norton.
- Le Heron, E., Logie, J., Allen, W., Le Heron, R., Blackett, P., Davies, K., Greenaway, A., Glavovic, B., & Hikuroa, D. (2019). Diversity, contestation, participation in Aotearoa New Zealand's multi-use/user marine spaces. *Marine Policy*, *106*, 103536. <https://doi.org/10.1016/j.marpol.2019.103536>
- Lewis, N., Le Heron, R., Hikuroa, D., Le Heron, E., Davies, K., Fitzherbert, S., James, G., Wynd, D., McLellan, G., Dowell, A., Petersen, I., Barrett, J., Sharp, E., Ribeiro, R., Catley, S., Baldoni, M., & Le Heron, K. (2020). *Creating value from a blue economy* [Final report for Sustainable Seas National Science Challenge project]. <https://www.sustainableseaschallenge.co.nz/assets/dms/Reports/Creating-value-from-a-blue-economy/Creating-Value-From-A-Blue-Economy-Final-Report.pdf>
- Maré, D. C., & Graham, D. J. (2009). Agglomeration Elasticities in New Zealand. In *Working Papers* (09_06; Working Papers). Motu Economic and Public Policy Research. https://ideas.repec.org/p/mtu/wpaper/09_06.html
- McCloskey, D. N. (1983). The rhetoric of economics. *Journal of Economic Literature*, *21*(2), 481–517.
- Ministry of Business, Innovation and Employment. (2018). *Highlights from the National Science Challenges* (p. 44). www.mbie.govt.nz/assets/22ed73b331/national-science-challenges-highlights.pdf
- New Zealand Government. (2019). *The New Zealand Government Aquaculture Strategy*. <https://www.mpi.govt.nz/dmsdocument/15895-The-Governments-Aquaculture-Strategy-to-2025>
- NZIER. (2022). *Fast-forwarding technology to address climate change* (Insight 100–2022).
- NZIER. (2023a). *Future aquaculture workforce: Results from interviews and modelling* (p. 50) [Report to the Ministry for Primary Industries].
- NZIER. (2023b). *Workforce forecasts for 2032: Based on three future scenarios* (p. 212) [Report to the Ministry for Primary Industries].
- Ostrom, E. (2000). Collective action and the evolution of social norms. *Journal of Economic Perspectives*, *14*(3), 137–158.
- Rhodes, H., Kaye-Blake, W., & Bewsell, D. (2016). *Experts and local people in community-led development* (p. 43). AgResearch.
- Robinson, J. (1964). *Economic philosophy*. Penguin Books.
- Scott, J. C. (1998). *Seeing like a state: How certain schemes to improve the human condition have failed*. Yale University Press.
- Sustainable Seas National Science Challenge. (2023). *Blue Economy Principles for Aotearoa New Zealand*. <https://www.sustainableseaschallenge.co.nz/assets/dms/Summaries/Blue-economy-principles/Blue-economy-principles-Summary.pdf>
- Sustainable Seas National Science Challenge. (2024). *Developing pathways to a flourishing blue economy*. https://www.sustainableseaschallenge.co.nz/public/assets/dms/IFI/Developing-a-flourishing-blue-economy/Blue-Economy-Development-Pathways_Guidance.pdf
- Vanheule, S. (2016). Capitalist Discourse, Subjectivity and Lacanian Psychoanalysis. *Frontiers in Psychology*, *7*. <https://doi.org/10.3389/fpsyg.2016.01948>
- Williamson, J., Paling, R., Staheli, R., & Waite, D. (2008). *Assessing agglomeration impacts in Auckland. Phase 2* (Occasional Paper 08/06). Ministry of Economic Development. <http://ndhadeliver.natlib.govt.nz/content-aggregator/getIEs?system=ilsdb&id=1310125>
- Williamson, J., Paling, R., Waite, D., New Zealand, & Ministry of Economic Development. (2008). *Assessing agglomeration impacts in Auckland: Phase 1* (08/05). Ministry of Economic Development. <http://www.med.govt.nz/upload/55908/08-05.pdf>

