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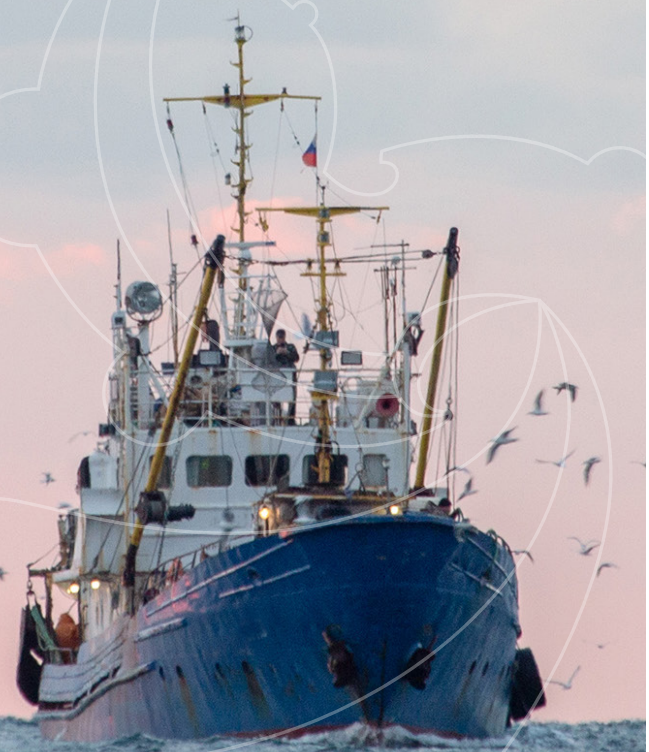
Ko ngā moana whakauka

Indigenising the Blue Economy in Aotearoa: A Synthesis



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Report

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About the Sustainable Seas National Science Challenge

Our vision is for Aotearoa New Zealand to have healthy marine ecosystems that provide value for all New Zealanders. We have 60+ research projects that bring together around 250 scientists, social scientists, economists, and experts in mātauranga Māori and policy from across Aotearoa New Zealand. We are one of 11 National Science Challenges, funded by the Ministry of Business, Innovation and Employment.

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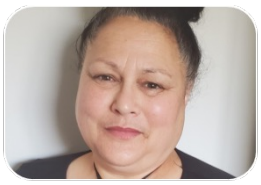
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Summary

This report provides a synthesis of the research results for the *Indigenising the Blue Economy* project, conducted within the Sustainable Seas National Science Challenge's blue economy research programme in partnership with five marine-based Māori organisations between September 2021 and November 2023.

The first section is focused on a literature review. It first provides historical context, in particular, providing an overview of the Treaty of Waitangi, the creation of the Waitangi Tribunal, and how the state's attempts to institute the Quota Management System (QMS) in the 1980s saw one of the first significant cases brought to the Tribunal. This section notes that Māori received significant settlement from their successful case, but that the resulting institutional framework—both the QMS and treaty settlement legislation—has created significant constraints on the Māori marine economy, particularly wild catch. It then interrogates the blue economy concept, noting that it has been criticised for being vague and could even be a 'bluewashing' of the current capitalist marine economy, which it notes is problematic for indigenous stakeholders as they have already experienced substantial marginalisation due to capitalism. It then details how the blue economy could be indigenised, noting that this requires both political and philosophical input, and that it requires upholding the four key presuppositions of te ao Māori (the Māori worldview): holistic understanding of nature and culture as well as the material and spiritual; the centrality of relationships; the need to maintain balance in these relationships; and the importance of cyclical considerations of past, present, and future generations. It then describes the three key constraints, centralisation, fragmentation, and commodification. Centralisation here is understood to involve the consolidation of assets such as fishing rights, creating social and cultural tensions across whānau (extended family), hapū (subtribe), iwi (tribe) and pan-iwi (multitribal) scales. Fragmentation here refers to the division between customary and commercial Māori fishing rights that arises through the effect of fisheries settlement legislation, the unequal allocation of commercial quota by the QMS, and the compartmentalisation of the marine estate, here broadly understood as the Exclusive Economic Zone (EEZ). Fragmentation adversely affects sustainable marine ecosystem management, causing economic and social inefficiencies and inequalities. Commodification is understood as the prioritisation of low-value, high-volume fishing as a consequence of the QMS. While economically sound for quota holders, commodification precludes Māori from more active roles in fishing and marine resource management.

The next section outlines the research methodologies that underpinned the

identification of the three constraints and for the project itself. In terms of the constraints, it explains that they emerged out of three phases of development, starting with a previous Sustainable Seas project, followed by a PESTLE analysis of the Sustainable Seas National Science Challenge which included interviews with a number of key Māori stakeholders, and finally deliberation between researchers, stakeholders, and Sustainable Seas Challenge leaders. As it notes, as well as identifying the three constraints, the final stage of this process was to determine three solutions to these thematic constraints: (1) whakatautika—creating balance between whānau, hapū, and iwi scale entities and activity; (2) pāhekoheko—increasing integration as a way to countermand the problem of fragmentation; (3) and auahatanga—generating differentiation in the products, processes, and markets of Māori marine-based enterprises. This development process ensured a robust and well-aligned framework for the current phase of research to build on. The methodology that was used by this current phase is then outlined. Firstly, the five case study partners and their particular fishing operations are described, as well as the main focus of the research. This section then notes that the project used a structure that would facilitate both centralised synthesis as well as decentralised, localised research. This saw both a community researcher, either a member of or appointed by the Māori authority case study partner, employed within each case study alongside a senior Māori researcher. The community researcher undertook primary fieldwork and was supported by a senior Māori researcher who guided the investigation, undertook analysis, and developed the case study reports. The centralised synthesis team analysed case study data to synthesise findings and generate research and practice-based outputs, including this report.

The following section is focused on detailing the results from the five case studies across the three themes of whakatautika, pāhekoheko, and auahatanga. For whakatautika, it outlines four key solutions identified in the case studies. The first is ring-fencing quota or annual catch entitlement (ACE), which provides a redress to the imbalance created when the treaty settlements saw iwi holding the majority of the quota. The second is for the provision of financial support as well as quota or ACE, as this will ensure that these small community-based fishers are able to maximise the opportunity. The third solution is the fostering of community clusters, or a group of local businesses that can work together in the marine estate, delivering at both the scale and connectivity needed for success. The fourth solution is the inclusion of local experts in the decision-making process in iwi and pan-iwi authorities, providing a balancing force to the centralised structure. For pāhekoheko, four solutions were also identified. The first of these was the creation of joint ventures as a means for overcoming the quota fragmentation that left many iwi holding uncommercial amounts of fish species. The second solution is quota optimisation, which focused on the importance of new innovations and technologies as a way of getting the most out of the quota packages that iwi already hold. The third solution was the use of hybrid governance structures which incorporate elements of traditional

Māori socio-economic arrangements and can be seen as facilitators of determining and developing these solutions or strategies. The fourth solution for pāhekoheko, is the need to streamline the institutional framework, so that legislation and organisations are well-aligned with requisite functions and tasks. For auahatanga, there were three solutions determined through the case studies. The first was the need for market research, this was an essential grounding for operations to determine who their customers were and what they wanted. The second was branding work that was calibrated to the market research, with a focus on the shared values between producer and consumer and an emphasis on those indigenous attributes that makes a product stand out and gain a premium. Finally, there was the need for innovation, whether that was in new business structures, new technologies, or new ways of operating.

The final section is the synthesis section, which firstly outlines the institutional framework, explaining the key issues that lie at the heart of it, noting that there are some constraints on a drastic overhaul of the system but also noting that for a truly blue economy to emerge then this overhaul will most likely need to happen. The final part of the section addresses integrated solutions. Here it is argued that while the solutions outlined in this report will help move the Māori marine economy towards a blue economy to a degree, the real power of the solutions is manifested in their combined implementation. It is postulated that at the core of an indigenised blue economy Māori must be actively utilising their fishing rights, in amongst their communities and on the waters they strongly connect to through whakapapa. This solution focuses on the improving the balance in relationships between different Māori social groupings as well as the holistic relationships between humans and natural systems, and in turn can help restore an intergenerational focus on these relationships.

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Introduction

Purpose

The purpose of this report is to provide a synthesis of the research results of the *Indigenising the Blue Economy* project, conducted within the Sustainable Seas National Science Challenge's blue economy research programme in partnership with five marine-based Māori organisations between September 2021 and November 2023. It will first provide some historical context, then detail the blue economy concept. After this, it will outline the three key thematic constraints the project had identified as impeding the transition to an indigenised blue economy, along with the specific solutions for each of these constraints as delineated from the case studies. Finally, it will discuss the need for integrated solutions as well as providing some high-level recommendations at both policy and commercial levels, before concluding.

Sustainable Seas National Science Challenge

Across numerous roadmaps, strategies, and policies, the government of Aotearoa New Zealand has signalled that it needs to transform to a low emissions, sustainable, and resilient economy. The blue economy concept sits within this broader transformation as a framework for the future marine estate. In 2015, the government launched 'Sustainable Seas', one of eleven decade-long National Science Challenges. Sustainable Seas' mandate was "enhancing the use of marine resources within environmental and biological constraints" (Lewis & Le Heron, 2022, p. 101). Sustainable Seas was also charged with disrupting business as usual in research and to involve leading experts, including Māori (Lewis & Le Heron 2022). Over time it came to focus on both ecosystem-based management (EBM) and the blue economy to centre its work, while also increasingly directing attention to Māori rights and interests. As it draws to a close, Sustainable Seas is committed to bringing principles of te ao Māori to bear on the blue economy (Short et al., 2023).

Indigenising the Blue Economy

The *Indigenising the Blue Economy* project is a key part of the fusion of te ao Māori with the blue economy concept, building on work conducted in the Phase 1 project *Whai Rawa, Whai Mana, Whai Oranga* and a review of the blue economy transition for the Sustainable Seas Challenge. As initially conceptualised, this indigenised blue economy would be imbued with mātauranga Māori, framed by the treaty principles, and focused on Māori wellbeing, human potential, and relational balance with Tangaroa. The Māori world view, or te ao Māori, can be broadly understood as having quadruple bottom line focus, one that emerges out of a set of holistic, relational, balance, and cyclical presuppositions. The blue economy also has a quadruple bottom line focus, suggesting an alignment that should facilitate the transition. However, in practice there are a number of constraints on Māori making the transition to a blue economy.

Through previous research, these constraints have been identified and grouped into three themes, which guide the *Indigenising the Blue Economy in Aotearoa* project. The three themes are: (1) centralisation; (2)

fragmentation; and (3) commodification. Briefly, centralisation refers to the aggregation of assets, including fishing rights, previously held by whānau (extended family) and hapū (subtribe) to iwi and pan-iwi scales, which generates socio-cultural tensions between whānau, hapū, and iwi. Fragmentation refers to an artificial division between customary and commercial Māori fishing rights, the uneconomic apportionment of commercial quota amongst iwi by the Quota Management System (QMS), and the broader compartmentalisation of the marine estate. This impacts the sustainable management of marine ecosystems and is also damaging both economically and socially as it creates inefficiencies and inequalities. Commodification relates to the low value-high volume strategy that the QMS encourages. While a prudent economic decision for quota holders, this has excluded Māori communities from active roles in fishing operations and resource management as well as limiting the instrumental and intrinsic value of the marine economy (Mika et al., 2022).

The constraints can be traced back to the settler colonial institutional framework. This framework is the system of formal laws and regulations, and informal conventions and customs that shape and constrain a society's activity and behaviour as well as the organisations that both substantiate and emerge from these formal and informal rules. In this case, the QMS and treaty settlements are the most important elements. They are viewed as affecting the capacity and propensity of the Māori marine economy to transition to a sustainable blue economy.

Literature Review

Quota Management System and te Tiriti o Waitangi

The Treaty of Waitangi, the founding document of Aotearoa signed between Māori chiefs and the British Crown in 1840, is now the subject of an ongoing commission of inquiry called the Waitangi Tribunal, established in 1975. The tribunal investigates and makes recommendations on claims brought by Māori relating to actions or omissions of the Crown in the period since 6 February 1840 that breach the principles of the treaty. Through the tribunal and direct negotiation with the Crown, numerous settlements with Māori have been made. The first substantial settlement of a treaty claim was concluded in 1991 and concerned fisheries.

As the Crown set about establishing the QMS, creating and allocating property rights over fish stocks, Māori claimed that their customary ownership interests in the marine estate had not been ceded (Rout et al., 2019a). Māori won the case, leading to a negotiated settlement with the Crown which saw fishing quota and other rights pass to Māori via Te Ohu Kaimoana (TOKM), then known as the Waitangi Fisheries Commission. TOKM was established to administer and distribute quota among iwi (tribes) according to an agreed allocation model, which is specified in the Māori Fisheries Act 2004. The QMS itself saw fish stocks, which had previously operated under a common use-rights system, divided into Individual Transferable Quota (ITQ), which could be traded (Rout et al., 2019). The QMS was introduced to resolve overfishing without reducing economic activity by requiring anyone wishing to sell fish caught in New Zealand waters to have quota. The QMS has had numerous changes since its inception though ITQ as a right to fish remains the same. In return for giving up their claims over New Zealand's fishery, Māori settled for cash, a 50% stake in Sealord, 10% of 1989 quota, and 20% of all post-1989 quota. The resulting 'institutional framework'—broadly, the QMS and treaty settlement legislation—created constraints on the Māori marine economy, particularly wild catch (Bodwitch, 2017; Hersoug, 2018; Reid et al., 2019). The way the institutional framework constrains the Māori marine economy (MME) will be detailed in the sections on centralisation, fragmentation, and commodification.

Blue economy

Most blue economy definitions use the triple bottom line objectives of economic growth, environmental sustainability, and social equity, underpinned by an integrated oceans governance approach and technological innovation (Voyer et al. 2018). As Bennett et al. (2019) explained, many of the small island developing states "were among the first to advocate for attention to the blue economy, which, in their vision, features social equity and environmental sustainability as core tenets" (p. 991). Within these triple bottom line definitions there is a lot of variation. The World Bank (2017), as cited in Abhinav et al. (2020, p. 1), defines it as the "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem." Here, while all three pillars are referenced, the focus on 'economic growth' while 'preserving' the health of the ocean

ecosystem suggests this version of the blue economy is more aligned to 'business as usual' but with some reduced environmental impacts and improved livelihoods.

There are a number of criticisms of the blue economy concept which can be mapped across a spectrum. At the weaker end, it has been criticised for being ambiguous, contradictory and even 'imagined', generally because it is a complex and amorphous concept that numerous stakeholders with different perspectives and positions have defined differently. At the more critical end, this ambiguity is attacked as a feature rather than a bug, a feature that enables the blue economy concept to act as a trojan for dominant capitalist actors and structures. The concept has been criticised as vague, compartmentalised, unsystematic, and contradictory (Winder & Le Heron, 2017). Schutter et al. (2021, p. 2) argue that the "blue economy can be seen as a new iteration of the passive revolution facilitated by the green economy, in which the hegemony of capitalism is further embedded into oceans." The blue economy has an underlying profit and growth agenda that obstructs the fundamental change needed to achieve actual sustainability (Schutter et al., 2021). "For many of its proponents," Mallin and Barbesgaard (2020, p. 121) explain, "blue economies seem to exemplify triple win schemes, where (i) the wants and needs of coastal and island populations can be reconciled with (ii) cosmopolitan concerns for 'ocean health' and (iii) the capitalist growth axiom all at once." The blue economy, then, poses an inherent risk for Indigenous peoples, who have long been marginalised by capitalism and its governance (Bargh, 2014).

Initially, Sustainable Seas (cited in Short et al. 2023, p. 6) took a quadruple bottom line approach, defining the blue economy as "marine activities that generate economic value and contribute positively to social, cultural and ecological wellbeing." More recently, a proposed set of blue economy principles has been launched:

- Intergenerational: Empowering holistic and long-term governance and management that support the moana (the ocean) to provide for economic, social, cultural, and environmental wellbeing.
- Treaty-led: Providing for the application of Te Tiriti o Waitangi, the Treaty of Waitangi principles, tikanga (protocols to do what is right), and mātauranga Māori (Māori knowledge).
- Sustainable: Adopting approaches to resource management that improve marine ecosystem health.
- Prosperous: Generating economic success and actively transitioning towards resource use that is productive, resilient and enhances ocean-dependent livelihoods and coastal communities.
- Inclusive: Engaging communities to realise benefit from marine resources to align with, deliver upon and balance multiple values and uses (both commercial and non-commercial).
- Accountable: Making transparent decisions that reflect the value of and impact upon

the ocean's natural, social, and cultural capital (Short et al., 2023).

This makes significant gains on the previous quadruple bottom line, particularly, the intergenerational, holistic aspect and the treaty-led component. However, to truly 'indigenise,' and thus derisk the blue economy for Māori, the concept demands a tangible roadmap that incorporates te ao Māori and positions Māori in governance and management roles from the outset, ensuring both political authority and philosophical influence.

Another important element to raise is ecosystem-based management (EBM), which as an integrated management approach is closely tied to the blue economy transition. Certainly, while EBM has been criticised for compromising Māori authority, its philosophy is closer to te ao Māori than the QMS (Reid & Rout, 2020a). While a government commitment to adopting an ecosystem-based approach to fisheries management by 2020 has passed, little evidence can be found of it having any practical effect on the QMS (Reid & Rout, 2020a). As Macpherson et al., (2021, p. 1) note, "there remains uncertainty about the legal and policy tools, processes and institutions needed to support EBM." That said, at its most basic, it appears that the QMS will remain in place but with EBM seeing fishing stocks considered holistically rather than independently, though there are also significant scientific and data shortfalls preventing its implementation (Reid & Rout, 2020a). Thus, more work on EBM and its integration with the QMS is required for a blue economy transition.

Indigenising the Blue Economy

The political component is both relatively simple and incredibly complex. Simple in that theoretically Māori should have a significant role in both governance and management of the blue economy, from the earliest stages of planning and implementation through to operation. The complexity lies in the delineation of what 'significant' means and the application of this in practice. Dealing with the complexities of co-governance and co-management are beyond the scope of this project. Importantly, however, as with many other sectors, Māori are already leading by example operationally and it is hoped that this 'on the ground' reality will eventually see increased acceptance, essentially showing the utility of an indigenised blue economy in action.

Philosophically, there are many critical elements that need to be incorporated or considered to indigenise the blue economy. These emerge out of the four key presuppositions of te ao Māori: that reality is holistic, both in that nature and humanity are the same and that the material and spiritual worlds are indivisible; that relationships are fundamentally important and mutually-shaping; that maintaining balance in these relationships is of foundational importance; and, that time is cyclical, making both past and future as important as the present.

As well as providing a very high view understanding of what an indigenised blue economy would look like, these four presuppositions also provide a guide for the process of indigenising the blue economy:

- Holistic framing means that the ocean needs to be viewed in its entirety as a web of relationships and as more than a resource, as do ecosystems and the species within them. They should be respected for both their instrumental value and intrinsic worth, though financial considerations must be in service to natural, social, and cultural outcomes. Holistic framing also requires the institutional framework that guides and shapes the MME to be integrated and cohesive, as well as inclusive and overarching.
- Viewing the marine estate as a web of relationships provides a useful means of understanding the different connections across and within it, as well as helping to identify the most important relationships and their interconnections. This mapping process provides a top down methodology for determining the connections across the MME and weighing their relative importance. This can also provide insights into the creation of value chains and clusters, as these are essentially dense networks of highly functional relationships.
- The emphasis on balance, or dynamic equilibrium, as everything is always in movement, is also useful as it provides the ideal outcome for all of the identified relationships. This balance will not be the same for each relationship, nor will it be the same over time, but rather this idealised form is what each action or reaction should be striving to achieve.

Balancing relationships can run from high order issues such as the trade-off between an economic outcome and the wellbeing of an ecosystem, right through to very specific and particular interactions such as employer-employee dynamics. While the concept of balance contrasts with ideas of progress and profit, it does not totally curtail financial incentives but rather requires that they are built on balanced outcomes.

- Finally, the importance of cyclical understanding is that decisions on relational balance need to be made with consideration to historic insights and future impacts. This means that locally specific mātauranga and the various historic information embedded within this knowledge needs to be incorporated as do the considerations for future generations and future contexts.

These four presuppositions and how they might guide the transition to a blue economy provide a framework for guiding the following analysis, which now turns to examining each of the three constraints.

Centralisation

Centralisation is understood as the consolidation of quota at iwi and pan-iwi levels and the resulting loss of political control and economic engagement at smaller scales, as well as the consolidating nature of the QMS (Mika et al., 2022; Reid et al., 2019). The traditional political unit for Māori was the hapū (subtribe). Before colonisation, hapū exercised jurisdiction over localised marine territories and defended these areas from intrusion or exploitation. The right to fish different species was held at different levels from individual through to hapū depending on the harvest scale and technology required. These systems were undermined by colonisation. Critically, however, Māori never sold their marine property rights. This unresolved legal situation became critical when the government attempted to implement the QMS (Webster, 2002). A High Court decision ruled that the government could not allocate and administer rights that still belonged to hapū (Reid & Rout, 2020a). A Waitangi Tribunal settlement process ensued, and Māori were offered compensatory property rights and assets for supporting the QMS (Webster, 2002). However, the government demanded settlement negotiation was conducted with 'large natural groupings' of iwi rather than traditional hapū right holders, starting the centralising process (Webster, 2002). As Barr and Reid (2014, pp. 217–218) explain:

> Because control over resources has traditionally been situated at the whānau (family) and hapū (sub-tribe) levels, this has caused political tensions within tribes with these centralised corporate structures being seen by some as the imposition of an alien structure on traditional political and economic forms.

International indigenous research has shown the importance of having resource rights aligned with traditional formulations, with 'culturally-aligned institutions' acting as one of the best predictors of economic development, and poor alignment correlating

with lower economic development levels (Cornell & Kalt, 2000). That said, Barr and Reid (2014) do explore how some iwi have delivered sustainable development opportunities for constituent members in ways that are congruent with traditional structures, showing that there are ways of overcoming this centralising force without complete decentralisation.

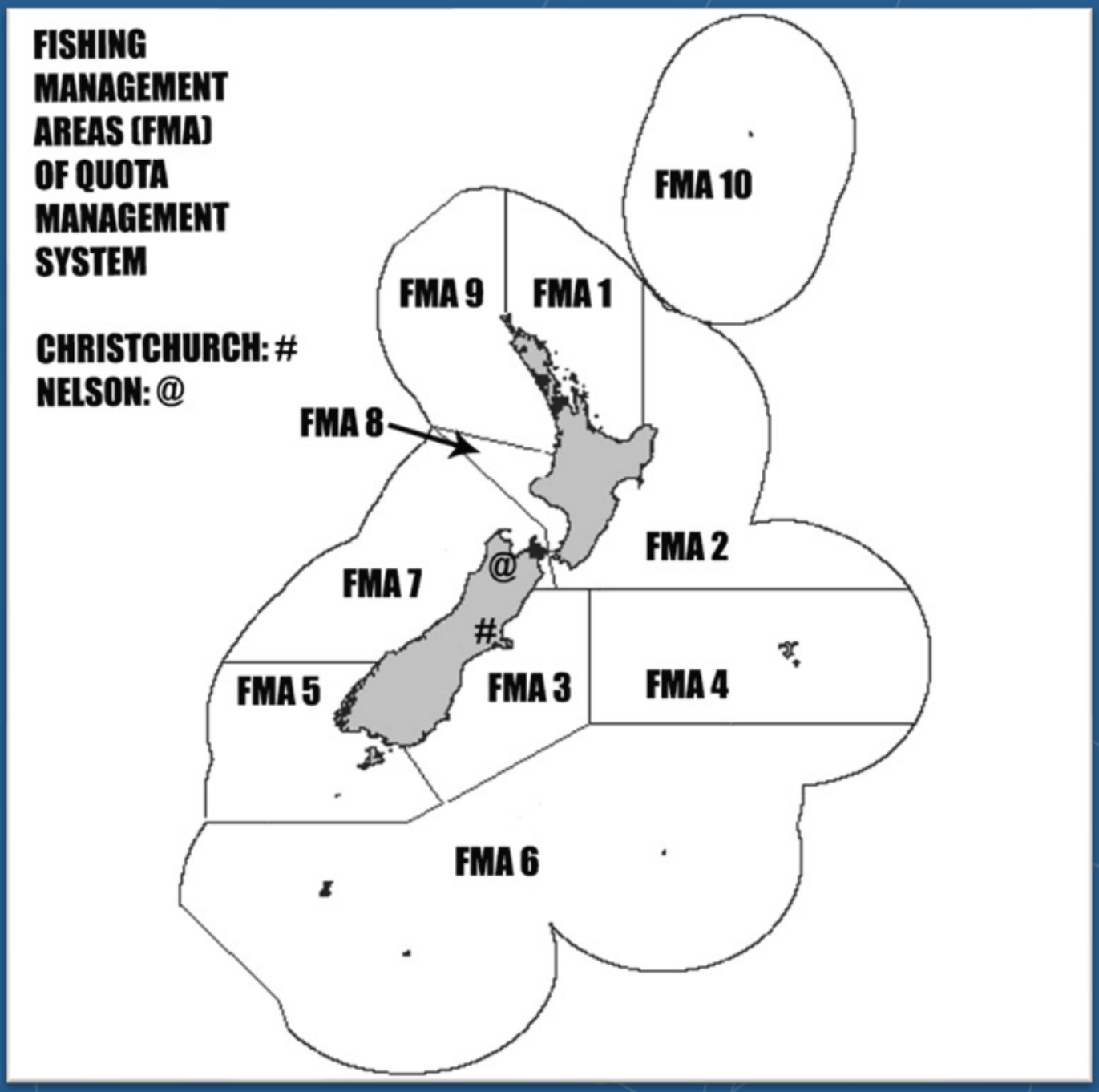
To receive settlement, iwi had to adopt Western corporate principles (Rout et al., 2019). The requirements stated iwi "can choose whatever legal structure they wish provided it meets the minimum standard" (Webster, 2002, p. 352). Despite the apparent freedom this suggests, the crucial words are 'legal structure' and 'minimum standard' (Webster, 2002, p. 352). Iwi were required to form mandated iwi organisations (MIO) to receive and administer settlement assets and extract a return from them (Webster, 2002). Sustaining themselves from settlement assets has meant MIO have had to focus on financial returns rather than community capacity building and local fishers (Song et al., 2018). As Song et al. (2018, p. 290) argue, the "possibility for iwi leaders to address fishers' exclusion is constrained by the same competitive market pressures that incentivise non-Māori quota owners to pay fishers low prices for fish." For most iwi, as explained below in fragmentation, quota has little connection to actual fishing; it is just another investment good (McCormack, 2010).

There was also an enforced split between the MIOs and their asset-holding companies, a separation that sees commercial decisions divorced from political, social, and cultural imperatives (McCormack, 2021). To add complexity, a serious disagreement within Māoridom ensued regarding the apportionment of settlement quota, with one of the key divisions between 'urban' Māori and iwi (Mika et al., 2019). Ultimately, some quota remains with TOKM who actively catch and process fish through Moana New Zealand (Rout et al., 2019).

The QMS saw the emergence of a centralised quota market, which generates higher profits than the actual fishing. The QMS is based on market logic, and with its implementation, a market, though heavily regulated rather than free, was created (Torkington, 2016). Interpreting the quota market as a competitive market has perverse effects (Torkington, 2016). It benefits incumbent quota holders by generating anti-competitive returns in the form of economic rent. Originally, quota came with resource rentals that were designed to capture economic rent and maintain competition in the quota market. Resource rentals were abandoned in 1994, and without this mechanism, economic rents have grown as profits slumped (Torkington, 2016). Thus, quota owners are growing incomes from the quota market, while actual fishing is divorced from such revenue (McCormack, 2018).

Pre-QMS, inshore fishing was geographically dispersed, with Māori making up a significant segment. Now, most fishing is offshore, with Nelson and Christchurch serving as hubs providing access to the Chatham Rise (FMA4), sub-Antarctic (FMA6), and Tasman (FMA7) fisheries, as shown in Figure 1.

Figure 1. *Map of Fishing Management Areas (FMA) for QMS*



Adapted from NIWA map, n.d.
(https://niwa.co.nz/media-gallery/detail/109673/42525)

Fishers in New Zealand have faced a prolonged decline in employment, with most jobs concentrated in certain hubs located in the South Island. This is especially problematic, as the majority of the Māori population resides in the North Island (Winder, 2018). The adverse impacts of this trend have been disproportionately borne by Māori fishermen and their communities. Many Māori fishermen were unable to obtain fishing quotas due to stringent criteria, despite warnings in a report about the "devastating impacts" of such exclusions being ignored (Memon & Cullen, 1994, p. 160). Following the settlements, Māori fish quota holdings have increased, while the number of Māori fishermen has declined, highlighting the divide between the central and peripheral aspects of the industry (McCormack, 2018). Predictably, Māori fishing expertise has also dwindled (Memon & Kirk, 2011). Furthermore, McCormack (2017, p. 42) contends that the benefits of the settlements for Māori are "virtually non-existent." In a broader context, Winder (2018) asserts that the QMS has led to the loss of quotas and jobs in local communities, undermining the regional economic goals of fisheries policy.

Lastly, centralisation has emotionally and practically disconnected Māori from their fisheries. This centralisation, along with fragmentation and commodification, has led to the division of ocean ecosystems into various 'stocks' that are sold in high volumes at low prices. These stocks are managed by a central body with limited ties to specific ecosystems (Reid et al., 2019). Fishing has become more of an abstract right than a concrete one, with few Māori actively engaging in fishing. This shift diminishes the connection to the places, which are crucial from a te ao Māori perspective, and vital for fostering marine governance and management.

Fragmentation

Fragmentation has been identified as a significant overarching challenge. In this context, fragmentation refers to the division of a sector, institution, or entity into inefficient or even conflicting components. The root of this fragmentation lies in the allocation of Māori fishing rights, both commercial and customary.

The commercial rights, known as settlement quota (SET), are distinct from standard fishing quota and were distributed among 58 iwi. Unfortunately, these iwi were allocated considerably less quota than needed to sustain the pre-QMS inshore fishing levels conducted by Māori (Song et al., 2018). Consequently, most iwi lack the necessary quota for commercial fishing (Te Ohu Kaimoana, 2017). The iwi's quota also consists of a disproportionate amount of high-volume, low-value species (McCormack, 2018). As a result, most iwi are passive quota holders rather than actively involved in fishing operations (Te Ohu Kaimoana, 2017). Research indicates that only 8% of iwi actively utilise their quota, while the remaining 92% lease it to commercial operators (Reid et al., 2019). The dispersion of SET also contributed to political fragmentation, weakening Māori influence in national fisheries policy (Te Ohu Kaimoana, 2018).

Iwi are restricted in trading their quota to other iwi under specific regulations, and as a result, no SET sales have taken place since 2004 (McCormack, 2018). These provisions, designed to prevent further alienation of fisheries rights, have hindered the consolidation of SET into commercially viable bundles (Memon & Kirk, 2011). Day and Emmanuel (2010) estimate that up to 30% of the settlement value is lost due to limited quota trading options for iwi. Meanwhile, the sector has witnessed substantial quota consolidation. Quota fragmentation has given rise to three types of quota holders: large Māori fishing companies employing a consolidation strategy; smaller Māori joint ventures that combine iwi quota into commercially viable bundles; and, iwi that lease quota (McCormack, 2018). SET fragmentation, in essence, has led to both commodification and centralisation.

To obtain quota, iwi were required to adopt a corporate structure with a governing board and a separate asset-holding company. These asset-holding companies are commercially oriented and legally detached from the iwi, exacerbating the problem of fragmentation. The creation of MIO also contributed to fragmentation because 'iwi' are not always clearly defined entities with indisputable boundaries, and some Māori have no distinct affiliation with an iwi (Webster, 2002).

Customary fishing rights, exercised using seafood collected for ceremonial purposes, cannot be sold or bartered. These rights were established by the 1992 Treaty of Waitangi (Fisheries Claims) Settlement Act. Māori customary fishing rights are governed within designated fishery areas, known as taiāpure and mātaitai reserves, where recognised Māori organisations have authority to decide where to establish a customary reserve and how to manage it. However, the implementation of reserves depends on government approval and involves limited Māori authority (Rout et al., 2019a).

The regulations define customary fishing as "neither commercial in any way nor for pecuniary gain or trade," excluding 'barter' (McCormack 2010, p. 30). Since 'barter' involves financial transactions, a core component of actual 'customary fishing' was excluded by the legislation (Rout et al., 2019). This artificial division does not align with how Māori historically engage with fisheries, as barter was common in pre-QMS fisheries and remains a method of exchange in the broader 'mahinga kai' or customary food gathering economy. The Māori fisheries settlement has fragmented Māori rights and created structural tensions as iwi administer commercial quota, while customary rights are vested with hapū and marae (Memon & Kirk, 2011; Te Ohu Kaimoana, 2018).

The broader marine estate of Aotearoa suffers from institutional fragmentation, which affects all stakeholders, particularly Māori. This marine estate is complex, encompassing 18 main statutes, 14 agencies, and six government strategies (McGinnis, 2012). Marine and coastal policy and planning in Aotearoa is highly fragmented, ad hoc, and often inconsistent across different domains (Macpherson et al., 2021).

Māori also have several roles in marine governance: as a treaty partner governing the allocation and management of fisheries, as stakeholders in co-managing commercial fisheries with other commercial quota holders, and as collaborators on a pan-tribal, iwi, and hapū level to manage SET (Memon & Kirk, 2011). The QMS inherently contributes to fragmentation, dividing the ocean into separate 'resource zones', each species into quota, and then quota across various holders. The QMS was promoted as a sustainable system; however, Hersoug (2018, p. 109) states that the QMS has "not contributed to increased sustainability, neither in biological nor in social terms." Similarly, McCormack (2018, p. 274) believes it is also "stifling kaitiakitanga." A significant part of this sustainability issue lies in the fact that the QMS is essentially a single-species management system where the total annual commercial catch (TACC) and quota shares of the TACC are set independently of other stocks (Reid & Rout, 2020). In other words, the marine ecosystem itself is fragmented, with each species managed independently, which can result in unsustainable outcomes (McCormack, 2017).

Commodification

The third key theme is commodification, which is defined as the predominant focus of MME wild catch fisheries on low-cost, high-volume fishing approaches (Mika et al., 2022; Reid et al., 2019). Many operators in the MME switch from one species to another as stock levels decline. Most of the innovation, especially in terms of branding, marketing, and tracing, is driven by the smaller operators (Reid & Rout, 2020; Rout et al., 2019). The research indicates that Māori hold a 35% interest in the seafood industry by value, and their economic interests have doubled since settlement. However, 45% of this value is concentrated in four species (koura [rock lobster], pāua, snapper, and hoki), three of which are highly susceptible to climate change (Reid et al., 2019). On the other end of the spectrum, Māori possess a significant amount of low-value quota, and there is limited research and development to bring these to market (Reid and Rout, 2020). Wild catch fisheries are the most profitable, but they are constrained by quota, with the export volume increasing by only 0.2% annually, placing a definite limit on future growth (Inns, 2013). The Ministry of Business, Innovation and Employment (MBIE, 2017, p. 5) explains that "there is little likelihood of significant volume or throughput increases going forward." The focus on commodity strategies is partly influenced by broader trends in the national and international marine economy, and partly due to internal constraints iwi face in managing their own quota.

Since the introduction of the QMS, the industry has witnessed significant consolidation. Initially, quota was allocated to fishers who had declared over 80% of their income from fishing in the previous three years (Song et al., 2018). As quota became tradable, large companies began acquiring commercially non-viable quota. Small holders could not use quota as collateral, while large companies had the resources to consolidate. Within 15 years, most fishers who had received less than 20t per annum had sold

their quota to big companies (Torkington, 2016). The port prices for fish dropped as competition shifted from fish to quota, leading to further consolidation (Torkington, 2016). While there are around 2,200 individual and company quota owners, eight companies own roughly 75% of the quota by volume (Hale & Rude, 2017). Dominant incumbents with guaranteed profits in the low-value, bulk export of fish reduced competitive pressures and innovation (Rout et al., 2023). This industry structure also inhibits market connections between smaller-scale fishers and independent buyers seeking high-value, quality fresh fish. Industry consolidation, as one of the interviewees explained, limits the development of value chains. Aotearoa is, instead, falling into the commodity trap, where initial gains lead to diminishing returns, reduced employment, and the loss of rents to international owners and regional decline (Lewis et al., 2020).

The international market has also driven commodification (Lewis et al., 2020; Norman, 2016). Over 77% of Aotearoa seafood is exported (Norman, 2016). However, the sector contributes only 0.3% to the total direct value added to the Aotearoa economy (Norman, 2016). More than a quarter of the country's seafood exports consist of unprocessed frozen fish, while another quarter is fish fillets, both among the lowest-value seafood exports (Norman, 2016). Chilled (fresh) fish, one of the highest-value ways to export finfish, accounts for just over 8% of exports. Winder (2018, p. 78) assesses that the sector is underperforming, failing to focus on added value, marketing, and acquiring quality resources. Most Aotearoa-caught fish is processed in China (Winder, 2018). As a result, the only options are to sell the fish as landed or seek more efficient processing offshore (Rout et al., 2023).

Further pushing iwi towards a commodity strategy is that many lack the internal capacity to actively fish, let alone create a value chain. Iwi can achieve high returns for limited effort by leasing their quota (Memon & Kirk, 2011). Except for some smaller Māori operators, little is done in the way of branding, tracing, authentication, and other approaches that would create a value chain (Rout et al., 2019). There isn't even a single overarching 'Aotearoa/New Zealand seafood' brand or a way to trace and verify the origins of fish exported (Norman, 2016). While more recent efforts have been made to add value through Indigenous branding and values-centred business practices, this remains largely unrealised, and most fish caught in the MME is sold undifferentiated (Rout et al., 2019).

Triple bottom line and the three constraints

While not an exact one-for-one match, fragmentation, commodification, and centralisation can be seen as the near antithesis of each of the blue economy's triple bottom lines of environmental sustainability, economic growth and social equity, respectively. At its core, fragmentation is unsustainable on fishing stocks, though it is also damaging both economically and socially as it creates inefficiencies and inequalities. Commodification is primarily anti-economic growth, but also has knock on effects on both environmental and social outcomes, as operators seek high volumes to make up for low value, and the consolidation and low margins that comes with this have negative impacts on fishing communities. Likewise, while centralisation has seen the marginalisation of communities and damage to the social fabric of iwi and hapū, it also has environmental and, more specifically, economic consequences, as wealth is concentrated, and decisions are made based primarily on short term gains rather than long term environmental, social, and economic sustainability.

Methodology

A three-phase approach

This synthesis report is the result of an iterative process of research, where refinement has occurred through several sequential projects focused on the MME. The latest ongoing project is the product of the insights and understandings developed in these previous projects.

Mapping the Māori marine economy

The first phase focused on investigating mātauranga-inspired innovations that would enable Māori to participate in marine management and decision-making, ensuring the MME is both profitable and sustainable over the long term. It first conducted a literature review, focused on both a historical understanding of the institutional shapers of the contemporary MME, as well as examining the synergies and disjuncture between mātauranga Māori (Māori knowledge system) and ecosystem-based management (EBM). It then mapped the MME, not just identifying all the key components—institutions, organisations, and operations—in this complex sector, but also determining critical information like the size, scope, and value of settlement quota for each iwi. During this phase of the work, team members also conducted case studies with Ngāi Tahu Seafood, Moana New Zealand, the Iwi Collective Partnership, Ngāti Kahungungu, Whakatōhea, and Aotearoa Clams.

Environmental analysis

The next phase of the research was a political, economic, social, technological, legal, environmental analysis of the MME as part of a broader review of efforts to transition to a blue economy. This involved discussions with key stakeholders across the MME to identify constraints Māori face. These interviews were with individuals who had held board positions in iwi rūnanga along with marae and komiti-level, iwi-owned fishing companies, national-level Māori fishing organisations, along with Māori marine scientists and Māori fishers. They provided a range of critical insights into the MME and broader marine economy, largely focused on the practical constraints and limitations.

An indigenised blue economy

In subsequent deliberations with stakeholders and science challenge leaders, the different constraints already identified were grouped into the three themes and a research plan for the next phase of research was conceived that focuses on three solutions to these thematic constraints: (1) whakatautika—creating balance between whānau, hapū, and iwi scale entities and activity; (2) auahatanga—generating differentiation in the products, processes, and markets of Māori marine-based enterprises; and (3) pāhekoheko—increasing integration as a way to countermand the problem of fragmentation. These are shown in Figure 2.

Māori authorities

We use the term ‘Māori authorities’ to refer to iwi and pan-iwi entities, as well as Māori enterprises at whānau and hapū scales, who have rights and interests in the Māori marine economy. We partnered with five Māori authorities to explore the transition to

Figure 2. *Thematic constraints*

an 'indigenised' blue economy, seeking to understand the constraints and determine possible solutions. These five case study partners were: Moana New Zealand, the Iwi Collective Partnership (ICP), Akaroa Salmon, Hokotehi Moriori Trust, and Ngāti Mutunga o Wharekauri.

Moana New Zealand

Moana New Zealand is the largest Māori seafood company, owned by all 58 mandated iwi organisations. Originally Aotearoa Fisheries Limited, in 2004 Moana New Zealand took ownership of a number of Māori-owned fishing through the allocation of the Māori Fisheries Settlement assets and the passing of the Māori Fisheries Act. The company is owned in trust on behalf of iwi, with 50% shareholding in Sealord Group Limited. The other 50% shareholding is owned by Japanese seafood company, Nippon Suisan Kaisha. All fishing activity is undertaken by independent fishers who own the vessels and are provided ACE by Moana New Zealand. Moana New Zealand have a number of different projects currently being developed, including recently underwriting the construction and refurbishment of two vessels of one of its whānau fishing operators, reinforcing the relationship between Moana New Zealand and the fisher. The company is looking to further develop its relationships with other fishers. This focus connects with the whakatautika-balance theme of the project. There are also a number of other projects which align with the other two themes, which will be discussed where relevant.

Iwi Collective Partnership

The Iwi Collective Partnership was established in 2010 as a voluntary collaboration of iwi fisheries companies from the North Island. ICP is 100% iwi owned, governed, and managed. Eighteen iwi are shareholders, and one iwi is an associate. ICP consolidate the ACE of their members, sell it to their partner fishery companies and distribute returns back to their iwi members. ICP were already engaged in a project which sought to consolidate an ICP-specific tikanga and mātauranga as a means of guiding their operations. ICP also appreciated that this tikanga and mātauranga could be utilised as a means of differentiating their product and adding value, which aligned particularly well with the auahatanga-differentiation solution. As this project also involved a number of governance decisions which saw incorporation of local expertise from across the membership, the case study also matched with both pāhekoheko-integration and whakatautika-balance.

Akaroa Salmon

Akaroa Salmon is an aquaculture company in Banks Peninsula, farming king salmon. Te Kāhui o Ōnuku and Ngāti Porou Seafoods Ltd, alongside Archipelago Capital Management Ltd recently purchased a controlling share of Akaroa Salmon, forming a joint venture. The product is sold domestically and exported largely undifferentiated into the United States. Akaroa Salmon wanted to determine the optimal international markets in terms of both economic potential and alignment with indigenous attributes, with the aim of developing a brand strategy that captures this and adds value. This has a strong fit with the auahatanga-differentiation solution.

Hokotehi Moriori Trust

Hokotehi Moriori Trust is the mandated iwi organisation for Moriori, the indigenous people of Rēkohu/Rangihaute (Chatham Islands). Hokotehi have a broad mandate and due to the realities of life on remote islands, the constraints they face are amplified by distance and cost. The Trust faces a range of issues around quota commercialisation and general financial viability of their fishery and are seeking to find ways to innovate the sector as well as adding value to their product. This focus is well aligned with both the auahatanga-differentiation and pāhekoheko-integration solutions, while also providing some insight into whakatautika-balance. While Hokotehi supported the production of a case study on the Moriori experience and aspirations for an indigenised blue economy, they did not enter into a funding relationship with the host university. Instead, they supported a member of their iwi to undertake the research. Thus, references to Hokotehi Moriori Trust in this report derive from the research about them by one of their own, rather than with them.

Ngāti Mutunga o Wharekauri Iwi Trust

Ngāti Mutunga o Wharekauri Iwi Trust is the mandated iwi organisation for the Māori inhabitants of Wharekauri (Rēkohu/Rangihaute or Chatham Islands). Ngāti Mutunga face many of the same constraints as Hokotehi and have the same broad mandate. The main aims of Ngāti Mutunga are for an economical and sustainable approach to fisheries that

Figure 3. *Case study research process*

generates employment, with a focus on value added products. This fits across all three themes.

Research design

The project decided to adopt a structure and process that would facilitate both centralised synthesis as well as decentralised, localised research. A community researcher was employed within each case study. In most cases, the community researcher was a member of the Māori authority or entity, or was chosen by them to take this position. Their role was to undertake liaison, primary fieldwork, and ensure that results are communicated in formats that resonate with the community. The community researcher was supported by a senior Māori researcher who guided the investigation, undertook analysis, and developed the case study reports. The synthesis team comprised Māori and non-Māori research specialists who analysed case study data to synthesise findings and generate research and practice-based outputs, including this report. This structure is shown in Figure 3.

The role of community researchers

Each case study utilised a range of methodologies depending on its chosen sub-themes, including a mix of quantitative and qualitative methods such as key stakeholder interviews, archival record research, focus group discussion, desktop analysis, and value chain analysis. The community researcher conducted interviews, communicated and coordinated with the Māori authority regarding the co-development phases of the programme, and helped determine the most appropriate and useful forms of presentation and framing through dialogue with Māori authorities.

The role of senior researchers

The senior researchers (case studies) had several roles. They worked on communication with the Māori authorities, particularly regarding the high-level engagement required to set and clarify the sub-themes for each case study, as well as the form and content of the presentations. The senior researchers also acted as a conduit between the synthesis team and the community researcher, communicating specific requests and necessary information between them. Finally, the senior researchers wrote the case study reports.

The role of the synthesis team

The synthesis team created the analytical framework, ensuring a balance of sub-themes across the three main themes. They coordinated with the senior researchers to ensure timely, effective, and consistent flow of information from the community researchers required for analysis. They also compiled and delivered many of the outputs, and in some instances the case study reports.

Results

Constraints and solutions

Research across the five case studies provided a wide range of insights into the three constraints and potential solutions that can deliver whakatautika, pāhekoheko, and auahutanga. These solutions are shown in Figure 4, and will be examined in detail with examples from the case studies. The colours represent: red – solution not mentioned by the case study; yellow – solution mentioned by the case study but not detailed in this report; green – solution mentioned by the case study and detailed in this report.

Figure 4. *Case study constraints and solutions*

	Solution	Moana	ICP	Hokotehi	Ngāti Mutunga	Akaroa Salmon
Whakatautika	Ring-fencing quota/ACE					
	Financial support and mentoring					
	Community clusters					
	Training and Education					
	Local experts					
Pūhekoheko	Joint ventures					
	Quota optimisation					
	Hybrid governance and management structures					
	Streamline the institutional framework					
Auahutanga	Market research					
	Branding and marketing					
	Innovation					
	Mātauranga to guide decision-making					

Whakatautika

Māori authorities recognise the need to tackle the decentralisation challenge, improve the efficiency of resource utilisation, repairing relationships and rebalancing the marine economy. New models can assist in this process, particularly in the case of small to medium sized iwi, given they may be empowered to operate independently and in partnership with hapū and whānau fishing enterprises. Models and methods, drawing upon traditional approaches and contemporary global insights, may be used to bridge the Māori corporate-community divide and encourage economic planning and investment that focuses on community multipliers in Māori coastal communities. Through such an approach, Māori marine economy internal competition can be overcome, and increased cooperation encouraged through new business models that enable innovative actors to form mutually beneficial partnerships with Māori communities. The analysis from the case studies suggest that there are a number of ways the balance between centre and periphery can be restored, or at least redressed. Of course, each relevant case study experiences different forms of centralisation and will require different solutions. However, there are some generalities that can be pulled out and may serve of use to other Māori authorities, as well as some more specific insights that are relevant to a particular case study, which may also provide insight to other Māori authorities who find themselves in similar situations.

Ring-fencing quota and ACE

Unequal access to fishing rights lies at the core of the centre-periphery tension, and one of the solutions indicated by several case studies was the need to ring-fence quota or ACE for local, whānau fishing operators. At its simplest, the apportionment of commercially viable quota to smaller communities with a strong history of fishing aligns with traditional Māori fishing rights, and even a small redress of the imbalance would likely go a long way to restoring some local connection and participation. It is also a way of strengthening traditional relationships between iwi and hapū/whānau. Having said that, quota ring-fencing could be done at either the MIO, TOKM, or central government level, though the latter would require some legislative changes for this to be implemented. Hokotehi Moriori Trust has blue cod, crayfish, pāua and kina ACE reserved for members who are established in the fishing sector, with allocation either directly from Hokotehi or through one of the fish processors they have agreements with. As will be further detailed, this solution could and should be combined with differentiation strategies – particularly those that sell stories of community and cultural regeneration. The aim would be to offset any financial loss caused by this quota redistribution so that the solution was cost neutral. While providing quota is an impactful solution, alone it is still a relatively risky proposition, particularly due to the many hurdles a small operator will face including the commercial and regulatory barriers. For this reason, it would best be provided with wrap-around support from either or both the MIO and central or local government.

Financial support and mentoring

Financial support and mentoring from MIO, as well government and the public sector, was also indicated as being crucial for whakatautika. It was suggested by the Chatham Island case studies that the government provide subsidies to support fishermen to help them operate their businesses. This is of particular importance for the remote Chatham Islands, as there are a range of extra operational costs associated with running a business there, including the logistics around transport to market, the cost of storage and packaging, the loss of earnings caused by disruptions, as well as the more general additional expenses that come with operating on a remote island economy that costs up to three times the average on the mainland. These subsidies could take the form of the removal of GST from operational costs or the provision of low-cost finance for purchase of necessary vessels and equipment. Other possible solutions raised by participants in the Chatham Island interviews was government offering some form of guarantee for loss of product due to weather disruptions. Hokotehi Moriori Trust has also initiatated the distribution of grants as contribution towards the cost of compliance for electronic monitoring.

Moana New Zealand also provided insight into what form that support might take as well as the array of direct and indirect benefits it had, as they had already implemented a strategy aimed at helping whānau fishers. Moana New Zealand underwrote the construction and refurbishment of two fishing vessels for RMD Marine Limited, a whānau fishing company. This arrangement was the first of its kind with Moana New Zealand, who also saw it as an opportunity to provide funding toward upgrading the fishing fleet which in some cases were 50–60 years old. There are mutual benefits this partnership has given both parties. The new vessels are built to utilise the precision seafood harvesting technology, which provides both RMD and Moana New Zealand with a way of upholding kaitiakitanga and also provides an avenue for value adding. RMD upgraded their fleet, which increased their equity and ability to purchase more vessels and gear. For Moana New Zealand, it shows their commitment to Māori fishing businesses, supports the needed upgrade of vessels and has secured them a multi-year contract with RMD Marine Limited to catch all its iwi quota packages. RMD Marine Limited know the valuable experience and knowledge they bring with them to Moana New Zealand and sees the partnership more as a relationship. Additionally, this focus on helping whānau fishers has helped foster a ‘grass-roots’ focus on te ao Māori at Moana New Zealand as they look to further incorporate the Māori world view into the operational level. Moana New Zealand also see this as just the first phase in a broader strategy that will see them help foster a network of whānau fishing companies, all working together and with Moana New Zealand to actively fish the Māori quota in ways congruent with te ao Māori.

Community clusters

The creation of community business clusters that can be connected into local and national value chains was another solution identified by several case studies. Currently, Nelson is the only region in Aotearoa with a significant marine business cluster, and while solutions

that focus on this do not need to reach for the scale that Nelson already has—which includes everything from ship construction to science and research—they can be developed in smaller, more niche ways. It is unlikely that the national marine economy could support another cluster the size of Nelson, and in some ways, this would go against the drive for whakatautika, which needs to be focused on smaller, more localised solutions that fit at the whānau and hapū scale. Moana New Zealand is seeking to set up a cluster of whānau operated fishing businesses, with the aim of creating a network that can provide a range of different supports and inputs along their supply chain, from harvest to processing. The aquaculture division of Moana New Zealand is also focused on partnering with long-term contract grower arrangements. This enables Moana New Zealand to increase its geographical spread, as well as working with iwi Māori to own their own business. Further, as a local business, owner-operators, the contract growers source the labour who receive on-the-job training and development opportunities, and also have access to Moana New Zealand expertise, knowledge and innovations. Another example is the idea of utilising the waste produced by fish processing in other businesses, a concept that was raised by participants in several case studies. Moana New Zealand is seeking to embed their commitment to the 6Rs—rethink, refuse, reduce, reuse, recycle and repair—to reduce their waste and plastics, introducing a 'Ideas into Action' reward programme into their network. Hokotehi Moriori Trust are also currently undertaking a feasibility study for a composting project that focuses on the diversion of organic waste, including fish waste, to manufacture compost, potting mix, and other products. Fish waste can be used to produce valuable fertiliser, and it can be processed to retrieve useful products like collagen, enzymes, and bioactive peptides. Setting up a clustered business that used fish waste would also help fulfil kaitiaki obligations, satisfying the deeper requirements of indigenising the blue economy.

Local experts

A solution identified by ICP is the engagement of local experts into centralised decision-making. ICP are using what they have termed 'implementation agents', or key informants to help with their Kia Tika Te Hī Ika (KTTHI) project, which aims to explore the use of mātauranga and tikanga within fisheries operations. The implementation agents' expertise will be utilised throughout the embedding of tikanga and mātauranga into operations in a collaborative and consensus based manner that aligns with traditional Māori decision-making processes. The implementation agents ICP have identified as necessary for their project are a) ICP, b) ICP iwi members, c) ICP's partners, d) mātauranga experts, e) industry experts, f) scientists, and g) Tangaroa and Hinemoana. ICP must navigate relationships with and between these critical partners to implement tikanga and mātauranga into their organisation and operational practices. This process of gathering implementation agents from across a wide variety of fields and domains fulfils a number of different outcomes, one of which is the rebalancing of the centre with the periphery. It does this by providing local experts in different fields and domains from across ICP's

membership with a forum for providing input and insight into the overarching operations of the collective. This approach could be adopted by a number of different groupings, as it provides a venue for the local actors to voice their opinion and provide input into larger developments. Also, this process incorporates Tangaroa and Hinemoana, the atua of the seas, meaning that the natural systems that are the foundation of the MME are included in the central decision-making process rather than being considered as peripheral actors. More broadly, within ICP there are several other practices and processes that help deliver whakatautika. Firstly, ICP was set up in a way that allows for iwi member influence; for example, when the ICP was founded, the company's strategic direction was approved by all iwi partners at the time, and the ability for iwi members to influence ICP was written into ICP policies. ICP are in close contact with their iwi member representatives and hold annual hui to keep them updated. Secondly, there a number of informal tuakana – teina relationships, where the more experienced members mentor and guide the less experienced ones, helping to build capacity and knowledge. These have developed over time, particularly as more MIO have joined the collective. ICP see the KTTHI project as providing even greater balancing between centre and periphery by strengthening both the formally constituted ability for iwi to influence ICP and the informal tuakana – teina relationships. Closely related to the use of local experts, Moriori have also been addressing the imbalance between their culture and Māori culture. The understanding is that beyond the intrinsic worth of their language, knowledge, and tradition it is worth retaining and reviving as part of the broader move to retain.

Pāhekoheko

The Māori marine economy is constrained by several forms of fragmentation. This research theme examines solutions to quota, regulatory, and jurisdictional fragmentation within the Māori marine economy. There are two key desired outcomes from this theme: finding ways of increasing the efficiency of quota distribution across iwi to grow scale and support sustainable fisheries management; and determining how Māori can lead multi-generational, integrated planning across economic sectors and their marine jurisdictions to maintain the mauri of the moana. Achieving integration across the different forms of fragmentation in the MME will require a number of different solutions, from those that MIO can implement, through to some that require central government intervention. As with the findings from whakatautika, not every solution will be appropriate for every situation but there are generalities that can be taken.

Joint ventures

For MIO, one of the key strategies for dealing with fragmented commercial SET quota is to form joint ventures, pooling the quota into commercially viable amounts. ICP provides a model of how this can be done. During formation, the members of ICP developed a strong vision of what they wanted to, and needed to, achieve. There was a significant degree of voluntary work done at the outset to bring the groups together which was carried out by some of the ICP leaders, showing the importance of long-term thinking and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an emphasis on the collective good that are core components of Māori decision-making. The geographical proximity between most of the members of ICP provided a useful base upon which to collaborate, particularly as it denotes a degree of shared history and similar tikanga. This provides good insight into potential joint ventures, with both shared vision and shared tikanga providing a useful foundation for collaboration. Under their model, ICP iwi members retain ownership quota. However, their ACE is managed, administered and collectivised under ICP. ICP does not fish this quota. It is fished by ICP's commercial partners, a majority of which are partially owned by ICP iwi. ICP administers iwi members' ACE into eight key parcels: deepwater, pelagic, premium inshore, lobster, pāua, scampi, highly migratory species, and GLM9. The aggregation of individual iwi ACE through ICP achieves many benefits for ICP iwi members. Through ICP, iwi members are able to achieve economies of scale and limit fragmentation which enhances revenue for iwi members who do not have the capital to fish their own quota. Being part of the ICP also limits competition between iwi members who would otherwise compete against each other in the fishing industry. Further, iwi who own, or partially own, ICP partner companies benefit from their dividends. ICP promotes kaitiakitanga and sustainable fishing with its partners, and iwi members benefit from being part of a collective where they are able to share knowledge and increase their capability and participation in the fisheries industry. The ICP Board has six directors elected and appointed by the iwi shareholders. Three directors are appointed by the three largest iwi shareholders, while the other three directors are elected by the remaining nine shareholders. This provides security for the larger partners as well as offering an opportunity for participation by smaller partners.

Quota optimisation

At an operational level, there are ways to deal with some of the issues presented by quota fragmentation—particularly the issues around commercial viability. These are not strategies that are able to add extra quota, or parcel existing quota together, but rather are able to optimise the existing quota. Moana New Zealand has been developing a number of technologies and practices that are able to improve the quality of the fish caught as well as reducing the time spent catching them. Moana New Zealand is investing in its own in-house geographic information system (GIS) mapping capability and software so that it is able to map and predict fishing locations, reducing the amount of time spent fishing, as well as reducing the impacts of bottom trawling. Moana New Zealand have also invested a significant amount in its precision seafood harvesting technology, which enables them to improve the selectivity, and thus the quality, of catch. Both of these ensure that the return on the quota caught will be better, at least after the investment in the technology has been paid off. In a similar vein, but focusing on traditional knowledge rather than new technology, both Chatham Island case studies have been focused on reviving traditional mātauranga regarding fishing with the aim of increasing operational efficiencies. For the Hokotehi Moriori, this has been particularly important as this is a knowledge set expressed in their own

language. They have been collecting traditional knowledge about a range of key fish cycles and behaviours to help improve the efficiency and sustainability of their catch, including a lunar fishing cycle.

Hybrid governance structures

Another important solution to fragmentation detailed by the case studies is through adopting hybrid governance structures. These are structures that incorporate elements of traditional Māori socio-economic arrangements, such as flexible, adaptive, and distributed networks, non-hierarchical leadership, consensus decision-making, and specialised input into decision-making (Rout et al., 2019). These structures do not directly solve or overcome fragmentation but rather can be seen as facilitators of determining and developing these solutions or strategies. These structures also have the potential to operate within the EBM co-governance and co-management frameworks that are likely in a future blue economy. This can be seen in ICP's KTTHI project, where the decision to incorporate implementation agents into the decision-making process provides a template for a structure that is both better aligned with Māori traditional structures, and offers the flexibility and capacity to be able to better problem solve and adapt to new contexts. As the former CEO of ICP, Maru Samuels, explains:

> One of the things that we have come to realise is just the importance of having expert advice … So, having not just the right people who have that mātauranga Māori and understanding of those things, and being able to interview them, but just as important as that, is the business planning, is the branding, is the science and understanding of our New Zealand Fisheries law and policy work. You need experts right along that whole process.

Incorporating experts from across areas and domains into the decision-making process aligns with the traditional Māori process, with tohunga and community members engaged in collective decision-making. It also aligns with both participatory and technocratic governance models, which are arguably the two most common, if competing, approaches in Aotearoa. Moana New Zealand have been developing a networked approach to their business, one that focuses on creating different semi-independent Māori-owned businesses that operate collectively yet with a degree of autonomy. The various divisions within Moana New Zealand have been providing support to suppliers and contractors to purchase their own businesses, while also providing ongoing support that will help these businesses to succeed, as well as providing access to Moana New Zealand's expertise, knowledge and innovations. The owner-operators can then create their own networks within their communities, sourcing the labour and materials required to continue operation. These structures are very similar to traditional Māori forms of economic organisation, and they also provide resilience. The Chatham Islands case studies also indicated the importance of new, or traditional yet adapted, forms of governance and management—particularly the importance of a collective and holistic approach on-island and for greater connections to mainland networks. The participants in both the Ngāti

Mutunga and Hokotehi Moriori Trust case study all noted that the priorities and solutions they identified are premised on the understanding that a whole-of-island and integrated approach with each other and other stakeholders (Chatham Islands Council, Chatham Islands Enterprise Trust) and government agencies are necessary to create meaningful benefits for the Chatham Islands. In noting that, the priorities and solutions raised by participants are viewed as a win-win for the whole island. While the participants raised matters related to the blue economy, these matters impact on other aspects of societal need, therefore a whole of ecosystem and whole of community solution is simultaneously required—whereby all input is valued, and equity is prioritised. Hokotehi also noted that the Chatham Islands Fisheries Forum Plan@44˚ signalled a turning point for both imi (Moriori) and Ngāti Mutunga having worked in collaboration as a 'unified voice' in asserting their expressions of tchiekitanga (Moriori)/ kaitiakitanga in fisheries management, and at the time, the potential of aquaculture development. Together with the support of the then Ministry of Agriculture and Forestry, imi and iwi established a forum known as Pa Tangaroa where the primary focus was on customary fisheries. The plan acted as a tool which enabled imi and iwi to build meaningful partnerships and facilitate kōrero between themselves and relevant government agencies in terms of improving communication and engagement. It has a number of high-level management objectives and performance measures and "captures a richness of discussions that took place in anchoring" (Goomes & Gillies, 2024, p. 54). The rakau momori (carved tree) visually describes the relationship that needs to be in place between both Hokotehi Moriori Trust and Te Runanga o Wharekauri Trust. A coming together of two peoples for common goals.

Streamlined institutional framework

It was also noted by case study participants that the broader institutional framework could also benefit from streamlining so that legislation and organisations are well aligned with requisite functions and tasks. The need for the QMS to be reviewed was outlined by the Ngāti Mutunga participants. They thought a stocktake is necessary to measure and monitor what is in existing marine reserves and wāhi tapu sites. Legislation, regulations and policies will need to be reviewed and updated for current conditions. Further, additional marine reserves, wāhi tapu sites and customary fishing places will need to be included in legislation, regulations and policies.

Auahatanga

The hard limits of wild fisheries have mostly been reached. Extracting more value from these stocks requires adding value to the existing tonnage rather than acquiring more tonnage, for the sector as a whole at least. Furthermore, the impacts of climate change could have potentially negative impacts on a range of some of the most lucrative species, meaning that working out ways of adding value to less lucrative stocks is crucial, as are other forms of innovation and diversification that can provide the MME with the resilience needed to be future proofed. Commodification can be overcome by a range of value adding strategies, particularly emphasising a range of desired attributes such as sustainable

and ethical production, or indigenous values through branding and marketing to international consumers, while differentiation can also be expressed through both innovation and diversification of Māori activity in the marine economy. Generally speaking, these solutions are more open to all stakeholders in the Māori marine economy, as virtually every operator can add value through emphasising the authenticity and provenance of their products through branding and marketing, and they are also able to innovate or diversify their operations.

Market research

Market research is an important component of gaining premiums. Akaroa Salmon were focused on understanding how they could add value by diversifying their markets and target the best consumer segments through market research. Analysing new market opportunities and consumer willingness to pay (WTP) offers insights into potential salmon sales to enhance financial returns and reduce risk. Exploring the salmon features most desired by consumers, assisted Ōnuku in tailoring its brand identity and production practices to consumer demand and maximising potential returns. The research has identified several unique opportunities for Ōnuku in the salmon industry. Ōnuku highly values their role as kaitiaki in the Akaroa Harbour and strongly desires to protect taonga. The research found that the Aotearoa New Zealand salmon industry is highly concentrated in the USA and China markets. This exposes the industry to risk from changing geopolitical, trade, and market conditions. The trade modelling revealed several promising markets with untapped potential that could be investigated to reduce risk exposure and open new opportunities. There is untapped potential to sell into currently underrepresented markets such as Korea and Thailand.

The research identified consumer attitudes towards salmon and associated WTP premiums for credence attributes. This is contrasted with consumer demand for the brand identities portrayed by major New Zealand salmon producers. This analysis, combined with insights into Ōnuku's values and competencies and Akaroa Salmon's current identity, provided us with a foundation to construct a potential brand identity for Ōnuku in the salmon industry. The identity emphasises authenticity, quality, people, and place in a way that is unique to Ōnuku. This unique identity within Aotearoa New Zealand's salmon industry allows for a highly differentiated product offering. In working towards this identity, we revealed that there are a small number of key areas that Ōnuku are not currently maximising. These primarily relate to communication, particularly towards building a stronger presence outside its local area.

Branding and marketing

A number of case studies focused on branding and marketing. This was a core focus of the research with Akaroa Salmon. Based on a triangulation of Ōnuku's values, new market opportunities, and consumer WTP for credence attributes, the next step was developing a salmon brand identity for Ōnuku that is uniquely indigenous yet caters to international consumer demands. This identity revolves around a framework designed to enhance reputation by focusing on strategy,

differentiation, communication, and interaction. The export market analysis alongside the consumer willingness to pay research culminated in a product identity strategy to support Ōnuku in better differentiating their products in market. Figure 5 outlines this identity based on research and discussions with key representatives from Ōnuku.

From the basis established in Figure 5, the elements developed to establish identity can be linked to key characteristics of reputation. These reputation characteristics are included in Figure 6 as an outer ring linked to the associated identity characteristics.

In the research, identity and reputation elements were brought together to explore the strategic implications of different combinations of linkages. The linkages can help to provide insights on strategy, competition, communication, and interaction that could be useful in guiding Ōnuku's future direction in the salmon industry.

Moriori are also interested in creating a distinct Moriori/Rēkohu brand for fisheries products, providing a potential way to showcase their unique heritage and values. Such differentiation, as evidenced by the Ōnuku Rūnanga case study, suggests that communicating indigenous values to premium consumers can prove advantageous. The data seems to indicate that by focusing on innovative practices, potential economic opportunities akin to those leveraged by Ōnuku Rūnanga in the salmon market could be realised. The proposed identity strategy for Ōnuku in the salmon industry emphasises authenticity, quality, people, and place. The differentiation offered by this strategy appears to be significant. Nevertheless, communication remains an area needing attention. To maximise potential returns, it is suggested that communication strategies, especially targeting international audiences, be further developed. Consistent and clear communication, paired with a clear understanding of consumer preferences, may offer avenues to maximise returns. However, caution is advised when interpreting these findings, given the ever-evolving nature of markets and consumer preferences.

Within the scope of differentiation, Ngāti Mutunga has proposed a series of strategies. A direct sale approach from shore to buyer or consumer, involving quota holders and fishermen, is recommended. This approach resonates with the concept of branding and differentiation evidenced in the Moriori marine economy case study. By emphasising the distinctiveness of 'Wharekauri/Chatham Island' products over 'mainland' items, the intent appears to be to command premium market prices. The differentiation, as previously observed with the Moriori and Ōnuku branding strategies, suggests that such distinctions can be economically beneficial.

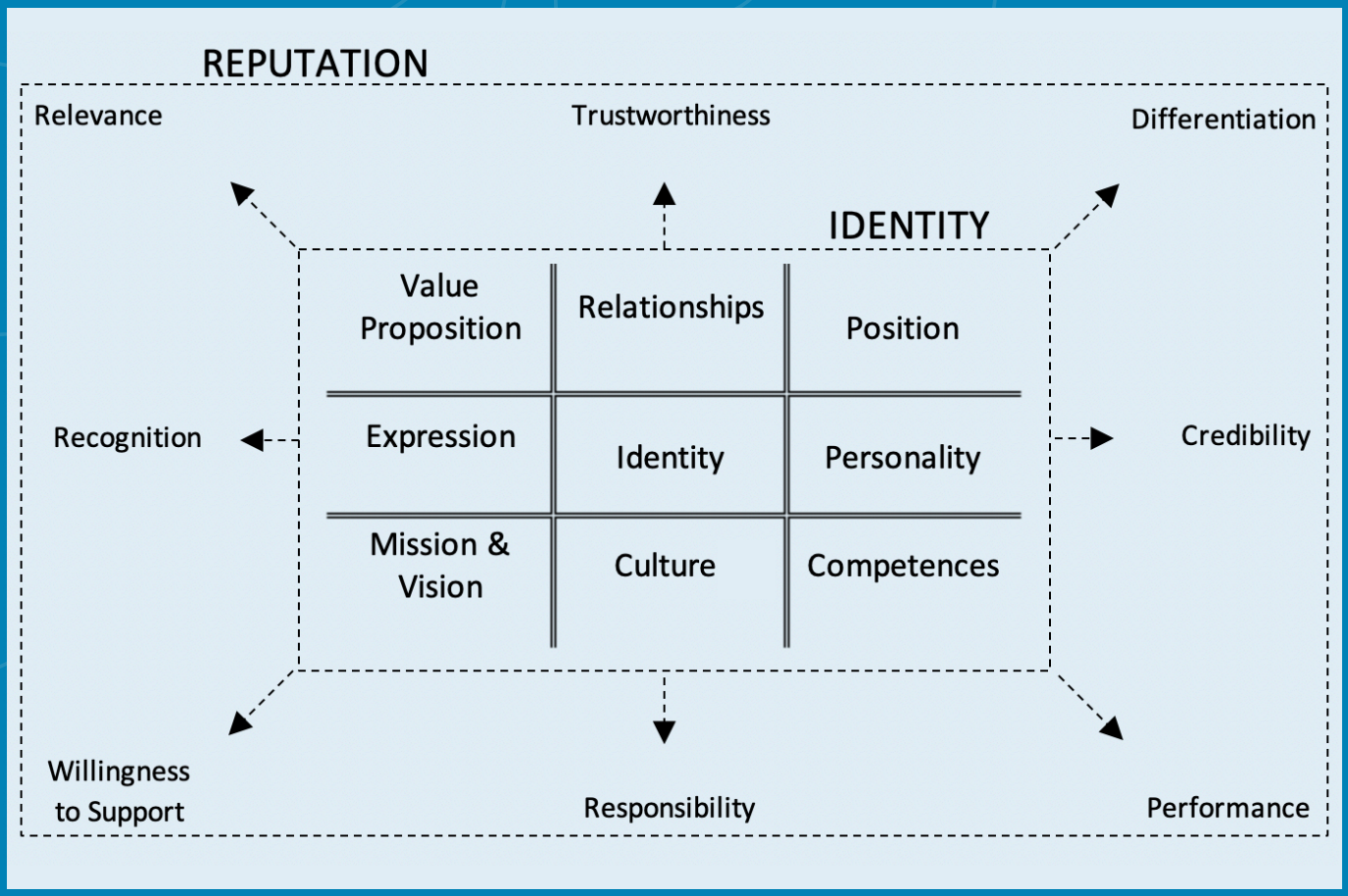
Innovation

Innovation is an essential means of differentiating and generating extra revenue. Moana New Zealand have been innovative in their aquaculture division. They invested significantly in their oyster hatchery, Kirikiritātangi, and broader oyster farming infrastructure. Kirikiritātangi will provide end-to-end control of the oyster growing

Figure 5. *Brand identity attributes for salmon from Ōnuku*

Value Proposition: A product that is unique to its place and people	**Relationships:** Tauutuutu (reciprocity), mutual respect, educating, sharing, trust	**Position:** Authentic people, environmental quality, boutique production, history and tradition, a meaningful experience
Expression: Imagery, web presence, community recognition	**Identity:** An authentic product from a people deeply entwined with a beautiful place	**Personality:** Kaitiakitanga, manaakitanga, sense of place, tradition
Mission and Vision: Building inter-generational wealth for whānau	**Culture:** A focus on values, provenance, and tikanga	**Competences:** Small scale non-corporate production, connecting product to place

Figure 6. *Connecting elements of identity to reputation*



process, which will increase the consistency and reliability of spat supply. This investment supports the company's growth in the blue economy aquaculture space. Most oyster spat is still harvested in the wild, providing Moana New Zealand with an innovative edge as they are able to selectively breed their spat and can do it year-round. Moana New Zealand are also replacing existing old timber oyster farming infrastructure and replacing it with semi-automated farming technology which includes floating oyster baskets on longlines. This not only provides better working conditions but also has less impact on the environment. Entering in mutually beneficial partnerships has meant Moana New Zealand are leading the way in single-seed oyster farming. They are working on combined research, working in a shared space with a patented unique Cawthron Institute Research method for producing the triploid oyster, which is an all-season oyster. This innovation means Moana New Zealand is one of only three or four businesses globally that has a fully integrated oyster business. Alongside this innovation enabling auahatanga, it is also helping to provide whakatautika as the oyster farms are spread across Aotearoa New Zealand, and they are not limited by quota either.

Hokotehi also indicated the importance of innovation through diversification, noting that marine tourism presents another potential opportunity for gaining premiums. Preliminary findings suggest that establishing a marine tourism offering, distinguished as a 'Moriori experience', may align with efforts to diversify marine economic activity. Moreover, the exploration of boutique industries, notably

pāua jewellery branded with Moriori insignia and the exploration of kaeo's medicinal potential, is recommended. Such industries, if realised, could tap into a segment of consumers who indicate a preference for products associated with indigenous values.

Ngāti Mutunga were also interested in innovation through diversification. A focus has been given to marine species such as starfish. The rationale behind this is twofold: firstly, the removal of starfish can create space for pāua growth; and secondly, the potential commercial harvest of starfish for pharmaceutical, nutraceutical, or other purposes is worth exploration. In parallel, there's the case of scallops, where economic benefits remain yet to be researched. The smaller size of oysters from this region might be perceived as a challenge. However, a proposed solution lies in reframing this size attribute, marketing these oysters as 'luxury' or 'exclusive'. This approach to market perception is echoed in the case of kina. Wharekauri kina, due to their darker hue, are not deemed commercially viable in the prevailing market. A suggested solution involves altering market perceptions to view the darker kina as luxury items, similar to the repositioning strategy for oysters. Concerning Tuatua, there exists an adequate stock for local consumption. Yet, the advent of commercial operators, especially those that might breach the 12-mile restriction, poses a potential threat. The statement referencing repercussions in Otaki suggests that there are socio-cultural implications to be considered. The opportunity to investigate eel farming has also been mentioned, hinting at diversification of marine resources. Kelp presents another unique situation. Though a license is held by a non-native of Wharekauri, commercialisation remains stagnant. The potential selling of rights, encompassing weka farming as well, highlights a need for decisions on resource management and local participation. Lastly, considerable emphasis is placed on pāua. Research spanning two decades, particularly on reseeding and relocation, seeks to replenish stocks. The involvement of mainland scientists in these efforts points to collaborative initiatives. An innovative idea is presented, referencing an Australian endeavour where pāua farming on concrete blocks in the ocean has seen success. This implies that novel techniques, potentially adapted to Wharekauri's conditions, might yield significant sustainable benefits in pāua harvesting. The strategies of Ngāti Mutunga for differentiation encompass a blend of branding, research, and innovative solutions. Drawing parallels with the Moriori case, the importance of perception, value addition, and sustainable practices emerges as crucial.

Mātauranga

Mātauranga Māori and the blue economy

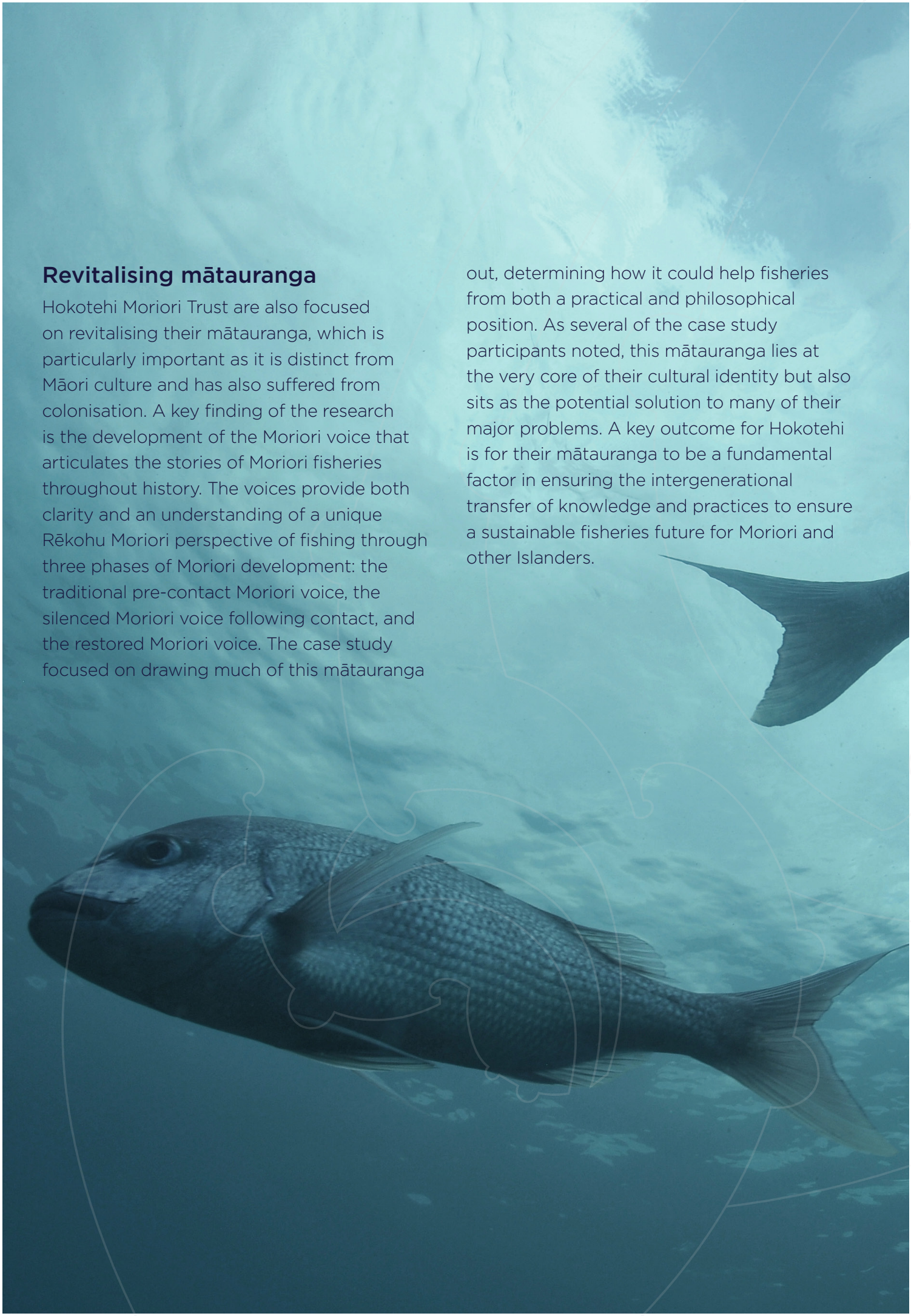
The importance of mātauranga as both cultural revitalisation and guidance for decision-making was a solution identified by several case studies that does not fit into the three themes, but is important to include. As noted, ICP is working on embedding tikanga and mātauranga into their operations, with the main aim of retaining and enhancing their identity and whakapapa as Māori. The project seeks to build Māori knowledge systems, value frameworks and tikanga into ICP operations and fisheries management by seeking out and consolidating a set of ICP-specific tikanga and mātauranga that can be implemented with the fisheries industry. ICP case study participants emphasised that tikanga and mātauranga must be sourced locally from ICP iwi member communities and implemented within these communities. Alongside local level tikanga and mātauranga, high-level New Zealand science and best practice, fisheries management must be used to inform decisions. ICP aspire for this project to be genuinely transformational for their iwi-member communities. The implementation strategy must allow the ICP to enter into new partnerships and search for more unique opportunities in the marine space. Current and/or new fisheries partners must also benefit from this strategy. They are the parties who (at least initially) will be carrying out the new tikanga and mātauranga driven fisheries practices. In saying this, the strategy must also have an evaluative aspect so ICP can use it to assess the use of their iwi members' fisheries assets by their fisheries partners. Further, ICP aspires to tikanga and mātauranga practices implemented within the wider fisheries industry, and therefore, this strategy must be scalable to work at the national and potentially international level.

Implementing tikanga in fishing operations

Ultimately, the project came up with five key findings that may help ICP guide their tikanga and mātauranga implementation project. Firstly, we found that ICP's original aspirations for tikanga and mātauranga implementation can help to guide this process. These aspirations centre around the importance of implementing locally sourced tikanga, rebranding, new partnership opportunities for ICP, and scalability. Secondly, we found that there were a number of key agents whose expertise will be required throughout this implementation process, including ICP iwi members, industry and scientific experts, and Tangaroa. We then found that in order for tikanga and mātauranga implementation to be truly transformational, it must be sourced from the local level. Our fourth key finding was based around opportunities, considerations and challenges for implementing tikanga and mātauranga. Opportunities have the potential to make tikanga and mātauranga implementation easier and provide potential positive externalities. Challenges may threaten the tikanga and mātauranga implementation process and must be addressed before implementation. Considerations are not necessarily as severe as challenges, but ICP will need to be aware of these going forward.

Revitalising mātauranga

Hokotehi Moriori Trust are also focused on revitalising their mātauranga, which is particularly important as it is distinct from Māori culture and has also suffered from colonisation. A key finding of the research is the development of the Moriori voice that articulates the stories of Moriori fisheries throughout history. The voices provide both clarity and an understanding of a unique Rēkohu Moriori perspective of fishing through three phases of Moriori development: the traditional pre-contact Moriori voice, the silenced Moriori voice following contact, and the restored Moriori voice. The case study focused on drawing much of this mātauranga out, determining how it could help fisheries from both a practical and philosophical position. As several of the case study participants noted, this mātauranga lies at the very core of their cultural identity but also sits as the potential solution to many of their major problems. A key outcome for Hokotehi is for their mātauranga to be a fundamental factor in ensuring the intergenerational transfer of knowledge and practices to ensure a sustainable fisheries future for Moriori and other Islanders.



Synthesis

Institutional framework

As should be clear across the three sections on centralisation, fragmentation, and commodification. The institutional framework that guides and shapes the MME is a significant factor in these three constraints. Institutional frameworks are a complex agglomeration of rules and stakeholders, built up over decades in response to different needs and requirements, forming an ad hoc, generally reactive, often politically motivated, and thus inconsistent and ever-changing tapestry.

In Aotearoa New Zealand, this framework has undergone significant changes in the past three to four decades, when the country went from being one of the most highly regulated and centrally planned, with the single-party majority government wielding almost unchecked executive power, to one of the most deregulated and decentralised. Successive governments from 1984 deregulated the economy and decentralised planning, consequently discarding much of the power and responsibility of central government in favour of 'governing from a distance' through market-based solutions, with the attendant public sector restructuring. The public sector entity responsible for fishing provides a good example: between 1866 and 1972 it remained relatively unchanged, then in 1972 it was merged with agriculture to form the Ministry of Agriculture and Fisheries (MAF) (Bess, 2012). From the 1980s on, it would be beset by restructuring. In 1987, MAF underwent "major bureaucratic change" as its nine divisions turned into four 'business groups' (Bess, 2012, p. 553). MAF underwent more restructurings in 1990, 1992, and 1994, driven by the governmental focus on a more business-like approach to its functions (Bess, 2012). In 1995, responsibilities for fisheries were passed to the newly formed Ministry of Fisheries (MoF), which was then restructured in 2000, 2003, and 2007 (Bess, 2012). In 2012, the Ministry of Primary Industries (MPI) was created through a merger of the Ministry of Agriculture and Forestry, the Ministry of Fisheries, and the New Zealand Food Safety Authority. (Bess, 2012). Of this, Bess (2016, p. 71) notes, "as a result of restructuring during this transition, the fisheries management function has returned to its earlier status as the poor cousin of the much larger primary industries." As Bess (2012, 2016) concludes, all of this has seen a substantial loss of institutional knowledge, noting that between 1987 and 1995, staff at MAF dropped from 5,600 to 2,300, and estimates that several hundred years of experience in fisheries management has been lost in total.

In backlash to these substantial changes, the introduction of MMP in 1996 has served as a significant handbrake on executive power ever since. MMP has also fractured the political system, forcing the two main parties closer to the centre whilst also requiring them to maintain relatively unstable coalition governments. In turn, this has created a more cautious, moderate, and managerial approach to governing, seeing legislative 'tinkering' replacing substantive policies and long-term goals, in a shift labelled 'post-politics' where political decision-making is either deferred, displaced, or transferred (Leyland, 2022). Take the RMA as an example, a fundamental piece of legislation governing the country's marine estate and particularly important for

aquaculture. In what Geoffrey Palmer (2015, p. 6) calls the country's "habit of continual legislative meddling", this "longmaligned Act has already been amended 18 times since its inception" in 1991 and has been reviewed numerous times (Stewart, 2020, p. 36). A full repeal and replacement was being conducted by the previous Labour government, but with the new National government questioning the validity and worth of the work done by the previous administration, it looks like another round of tinkering with the existing legislation may be about to occur. In the meantime, this means that legislation that is not fit for purpose or generates problematic results will probably stay relatively unchanged.

The QMS, and in particular, the introduction of ITQ, were a key part of this change, with the focus on creating a right and a market that would self-regulate rather than requiring central government intervention. The introduction of the QMS in 1986 marked a radical shift in fisheries management, replacing the previous 'free-for-all' approach with a system that allocated fishing rights as ITQs. As McCormack (2021, p. 202) aptly describes, ITQs "deconstruct nature by slicing up fishing rights into competing units of transferable property." The QMS transformed traditional common-use rights in fish into privately owned, divisible commodities. This privatisation of fishing rights was the core objective of the QMS, even though it was presented under the guise of conservation (Rout et al., 2019). The underlying belief was that privatising fishing rights would incentivise efficiency and sustainability by making fishers accountable for the resources they extract. Despite numerous adaptations over the years, the fundamental principles of the QMS—setting a total allowable catch (TAC) and allowing the market to determine the allocation of fishing effort—have remained unchanged (Kerr et al., 2004). The QMS has been a subject of ongoing debate, with critics questioning its effectiveness in achieving both conservation and economic goals.

This shift towards deregulation and decentralisation, as well as the resulting lack of political leadership, were largely responsible for the thematic problems outlined here. Even centralisation, from a Māori perspective, which would appear to be the opposite of decentralisation, is a product of this change. The drive for decentralisation by central government manifested in the position that the Crown would only negotiate settlements with iwi rather than hapū. Thus, decentralisation for central government resulted in centralisation at iwi level for hapū and whānau. Fragmentation is also the product of this drive for deregulation and decentralisation. The division of what had been a common good right into individually held rights across different management areas fractured fish into different 'stocks', while at the same time the central government has pushed what used to be its responsibility onto an ever growing number of stakeholders, the self-regulating market of the QMS was supposed to not only be more efficient, but also more sustainable. Commodification is a fundamental outcome of the industry consolidation of the sector and the economic deregulation and subsequent entry into the global market, as well as the underpinning 'individuality' of ITQ and the market forces that are applied to it.

Put simply, the 'easiest' solution to the three

constraints, and thus the most significant barrier to a blue economy, would be to reform the institutional framework, specifically the QMS and treaty settlement legislation. The QMS is hugely problematic, and from a Māori perspective the fact that it is built on market logic—making it a manifestation of capitalism—makes it inherently oppositional to te ao Māori. There are some issues with this, of course. The first is that many Māori would be resistant to this because of the time and effort put in to get to this position. Māori have fought for the current settings and there is a degree of reticence to repeal or significantly change the legislation. The settlements, and the ways in which they are apportioned out, have taken many years and required a significant amount of effort from many to achieve. They are seen as substantial gains by many, and any reform could threaten these gains. A second issue is that, as indicated, any reforms may actually be worse. Even if the intentions of the reformers were good there are many unintended consequences when significantly changing legislation. A third, and again, interrelated reason for not reforming is that the constraints posed by the current institutional framework are well known and thus in some ways less problematic than unknown constraints caused by reforms.

Despite all these issues, it does seem that if Aotearoa New Zealand really is to transition to a blue economy, one that is not just a façade for continuing capitalist domination of the oceans, then significant legislative change is required. Perhaps EBM could be used to provide the basis for the institutional framework. The exact shape that a new institutional framework would take would need to be developed by Māori in conjunction with other key stakeholders. In other words, the first step would be ensuring Māori had significant political input. From this would lead the philosophical influence. Critically, the key presuppositions of te ao Māori are well aligned with the blue economy concept, meaning that if te ao Māori thinking was placed at the core of any institutional framework it would encourage the development of a blue economy.

Integrated solutions

Of course, Māori cannot wait for the replacement of the institutional framework, they need to work with what they have, and this means implementing the solutions outlined in this document.

Whakatautika:

- Ring-fence quota
- Financial and mentoring support to whānau fishers
- Community clusters
- Local experts

Pāhekoheko

- Joint ventures
- Quota optimisation
- Hybrid governance
- Streamlined institutional framework

Auahatanga

- Market research
- Branding
- Innovation

Implemented independently or in isolation, the solutions outlined will help the transition to a blue economy to a degree. However, they really need to be enacted in a concerted way to deliver the full benefits. Just as the three thematic constraints are interlinked, so too are the optimised solutions interconnected. There are two interrelated reasons for this, the first is metaphysical and the second is pragmatic. Metaphysically, as noted at the outset, te ao Māori is built on core presuppositions that reality is holistic, relational, balanced, and cyclical. What these mean in practice is that the development of any strategy or plan of action should consider the inputs and outcomes of all domains, from the human to the natural world, from the economic to social, to cultural, to environmental. It also means that these should not be considered in isolation but rather in a dynamic flow of cascading interactions. And that efforts should be made to ensure the outcomes of these interactions are balanced, or at least maintained in a dynamic equilibrium, as they branch out into growing webs of influence. And finally, that this holistic appreciation for relationships and impetus for balance takes into account past and future as well as present considerations. Indigenising the Blue Economy requires embedding te ao Māori into the decision-making process, and doing this means incorporating the holistic, relational, balanced, and cyclical approach. But this is not just a respectful or token incorporation, but rather one that will also be more impactful in bringing the blue economy concept to reality because there are a range of pragmatic reasons as well.

In terms of pragmatic reasons, interconnected solutions provide efficiencies through scale and scope, they deliver complementarity between social, cultural, economic, and environmental goals, and are able to link supply chains and turn them into value chains. Māori collaboration and cooperation can bring balance, integration, and value, just as a focus on empowering local communities can be leveraged to gain a premium in international markets, and emphasising the intrinsic worth of Tangaroa can add to the instrumental value of the blue economy. To use the military science concept, interconnected and collaborative solutions and strategies are force multipliers—that is, they can provide more than the sum of their parts. Ideally, all of the solutions would be deployed together.

Ring-fencing quota for whānau fishers provides the kernel around which the other solutions can be built—in other words, focusing on building and balancing relationships at a community level is a critical step in indigenising the blue economy. At the core of an indigenised blue economy needs to be Māori actively utilising their fishing rights, in amongst their communities and on the waters they strongly connect to, thus not only focusing on the relationships between different Māori social groupings, but the more holistic relationships between humans and natural systems, as well as restoring an intergenerational focus on these relationships. This is the heart of any future indigenised blue economy. These whānau-level fishing operators would benefit from capacity building and economic support from MIO and government to effectively utilise their quota. One aspect of this support could be directed at quota optimisation, examining ways in which the fish stocks can be harnessed for quadruple

bottom line outcomes. This concept of quota optimisation could also be expanded to change the way fishing quota is parcelled up, with Māori working together to manage their quota in ways that reprioritise the social, cultural, and environmental outcomes. These whānau fishing operators could also be connected into joint ventures between iwi, who are consolidating quota to make it commercially viable and then making some of this quota available to whānau fishers. Taking it a step further, embedding these whānau-level businesses into community clusters would also be optimal. Clusters of this sort provide a critical mass of connected businesses providing shared opportunities as well as increasing resilience. Mandated iwi organisations and government could focus on creating value chains based around these clusters, with an emphasis on not only improving economic outcomes, but environmental and social outcomes consistent with the evolving notion of a blue economy. Done with a focus on quadruple bottom line outcomes, these clusters could not only help build localised supply (and value) chains, but they also mirror the traditional economic networks of traditional Māori society. These joint ventures and clusters would also benefit from hybrid governance structures, incorporating local experts and a variety of different stakeholders from the community. The aim here would be for the development of networks of likeminded groups growing from the grass-roots upward, which would hopefully make the case for the streamlining of the institutional framework to better align with their operations and goals. These joint ventures and clusters could also be focused on innovations, which can be driven by local knowledge and fostered by hybrid structures, which in turn provide branding and marketing opportunities that emphasise cultural revitalisation among other favourable attributes of an indigenised blue economy. The branding and marketing are a critical hinge upon which the rest of the changes depend, it is essential that more value is gained from the marine estate without adding more volume, and one of the key ways of doing this is by communicating the positive attributes of the blue economy to international consumers as a means of adding value to product.

Harnessing the synergies across the solutions, starting with whānau fishers and working outwards to grow networks that are focused on the wellbeing of people, communities, and ecosystems and that harness this as a means of adding value to products internationally, is the optimal aim of a Māori blue economy. If this can be done with significant legislative change then this will help accelerate the process, but even without it, as long as all of the solutions are working together and there is buy in from MIO, communities, and government, then these solutions will help usher in a blue economy in Aotearoa.

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