

MAUMOANA

An indigenous design framework for regenerating Moananui living systems.

Tuputau Lelaulu | 2024

A thesis submitted to Auckland University of Technology in fulfilment of the requirements for the degree of Doctor of Philosophy (PhD).

Abstract

Maumoana is a practice-led study investigating the synergies between the regenerative paradigm and radical indigenism from a Moananui perspective. This study encapsulates two research aims: 1) the development of the Maumoana regenerative design framework derived from Moananui living systems and related concepts, and 2) the implementation of a design using Maumoana to devise a masterplan for regenerating Samoan living systems, offering alternative land-use strategies, and a regenerative development concept plans for Palauli Plantation.

The study begins with a regenerative analysis of Palauli Plantation, building on previous surveys by researchers Gregory Jackmond (1976) and Helene Martinsson-Wallin (2002), which shed light on prehistoric settlement patterns in Palauli and Samoa. Archaeological investigations and surveys by Gregory Jackmond in 1977-1978 unearthed over 3000 features. Amongst the findings was the Pulemelei Mound, which is considered one of the most significant freestanding stone structures across Moananui. The monument and surrounding archaeological findings are a testament to Moananui's intensive settlement patterns and socio-environmental organization, indicating complex and highly organised societies. Despite the evidence of intensive settlement, the complete living system at Palauli remains underexplored. This research fills that gap in our knowledge by comparing various Moananui living systems, such as ahupua'a, tapere, va'a mata'eina'a, and kāinga, identifying Palauli's historical settlement as a fua'iala system—a dynamic model of living that emphasizes the interconnectivity of community and environment.

Following this analysis, the dissertation develops a set of Moananui regenerative design frameworks informed by the shared concepts and principles observed in existing living systems. Moananui principles form the core of Maumoana, a regenerative design framework that enables communities and design practitioners to integrate cultural values and spatial concepts systematically in the regenerative development across Moananui. Maumoana design frameworks include Mauri Moana, Mana Moana, Vā Moana, Vanua Moana, Ara Moana, Wao Moana, and Mau Moana. This framework is contextualized by analysing Moananui living systems and Indigenous regenerative design frameworks such as the Mauri Ora Compass (Yates, 2019) and the Seven First Principles of Regeneration (Sanford, 2020). The final chapters of the study demonstrate the application of Maumoana in Palauli Plantation, proposing it as a conservation and regeneration model that aligns with the cultural and environmental priorities of local communities like Vailoa, Vaito'omuli, and

Fa'aala, and the current landowners, Olaf Nelson Properties Limited. Amidst the backdrop of land sale considerations by OF Nelson Properties Ltd, this research contributes to an ongoing Regenerative Feasibility Study led by MAU Studio and OFNPL, mapping out land-use strategies that protect and celebrate the region's cultural heritage.

Maumoana not only advances the field of Indigenous and regenerative design in Moananui but also responds to the urgent need to integrate Indigenous knowledge into urban development policies in the face of natural catastrophes and regional reliance on external assistance. It underscores the importance of preserving Moananui living systems, which are increasingly threatened by rapid development, climate change, and other global pressures. By advocating for a shift from mechanical to Indigenous and regenerative perspectives, this study calls for radical changes that prioritize place-based, culturally informed, and regenerative practices. Therefore, the study contributes significantly to the discourse on Indigenous knowledge and regenerative design in moving towards a self-sufficient and resilient Moananui.



Figure 1

The map is a detailed survey of Pulemelei, Palauli Plantation, modelled from Jackmond's surveys in 1977-79 (Martinsson-Wallin, 2007).

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly mentioned), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Tuputau Lelaulu
July 2024

Acknowledgements

"E lē sili le ta'ita'i nai lō le tapua'i".

Those who lead are no more important than their support.

The completion of this study could not have been achieved without my support-system - my village. Words can never explain my gratitude for your support, your guidance, and your sacrifices. Therefore I owe it to you all to continue to act, and in some cases lead, so that our people can thrive through generations to come.

Firstly, I would like to thank my family. To my late father, Lela'Ulu Nonu Tuisamoa, my mother Talalelei Belford-Misikopa, my eleven siblings, and many branches of our tree. Thank you for your unconditional love and guidance. This study is a product of your continual efforts to ensure that education was paramount in my life, and that I never took my opportunities for granted. You have created my reality, and the way I see the world - for that I will be forever grateful. Faafetai tele lava lo'u aiga pele.

Secondly, I express my sincere gratitude to my supervisors and mentors, Leali'ifano Albert Refiti, Fleur Palmer, and Janine Randerson. The many hours of talanoa, workshopping, and writing can not go unnoticed. You told me this will be the hardest thing I will ever do, and wasn't that the truth! Above all, your patience has made this study possible. It was a task and a half getting me to the start line, and it hasn't been a straight line to the end - but without your support, it would have been impossible task. It has been an absolute privilege being mentored by you both, and I hope this study makes you proud.

I would like to give special thanks to the incredible people who contributed to this research, both in the theoretical and practical development of the study. To the Nelson family, specifically Tuatagaloa Joe Annandale, James Atherton, and Nelson Annandale, and the Board of Directors of Olaf Frederick Nelson Properties Ltd - for your blessing and guidance to undertake this study on Palauli Plantation. To Karlo Mila, Rau Hoskins, Tofiga Etuate, Dionne Fonoti, Vehia Wheeler, Pamela Mang, and Joel Glanzberg for sharing your time and energy. Your talanoa and life work has been instrumental in framing this study. These talanoa were approved by the Auckland University of Technology Ethics Committee on 12 July 2023 under the AUTEK reference number 22/357.

To my MAU Studio family - Nelson Annandale, Shaun Goddard, Venus Mataia, Phillipp Muller, and Ethan Hansell-Hunt - thank you deeply for your patience, generosity, and unwavering support throughout the last three years of this study. Your willingness to step in and cover my responsibilities, assist with my presentations, and provide invaluable feedback and encouragement has been truly humbling. Each of you has made meaningful contributions to Maumoana, both individually and collectively, enriching this research in countless ways. It is difficult to fully express my gratitude for the constant guidance, encouragement, and support you provided, and I will always be honoured and grateful to have you all by my side.

Lastly, and most importantly, to my life partner, Pania Newton: thank you for your profound patience, unwavering support, and endless understanding. Your strength, care, sacrifice, and hard words (LOL) have created the necessary time and space to actualise this work. You have been my grounding force during moments of doubt and exhaustion, providing comfort, inspiration, and motivation when I needed it most. Your presence reminds me every day of our shared purpose—to create a meaningful and better future for our family/s. My sincere hope is that the next generation of our whaanau may one day understand that everything we strive for, every step we take, is made for them.

This study has become far more profound than I could have anticipated. What began simply as an exploration of alternative masterplans for Palauli Plantation (Letolo Plantation) evolved into a deeply transformative journey of understanding—unveiling the rich essence and resilient spirit embedded within Moananui ancestral living systems. Throughout this research, I have learned to observe our environments with a new mind, engaging deeply with the sophisticated and intricate ways our ancestors navigated, inhabited, and sustained Moananui for countless generations. Their profound relationship with the land and ocean, their ability to build thriving communities in harmony with their environments, and their capacity for resilience amidst constant change, now resonate with me in ways I could not have imagined at the outset.

My sincere hope is that, through engaging with this work, you, the reader, will also come to see—or perhaps re-see—our region and cultures with fresh eyes and a revitalised sense of wonder and purpose. May it inspire you to reimagine our landscapes as dynamic, interconnected spaces that offer not only physical sustenance, but cultural nourishment, spiritual strength, and ecological integrity.

Finally, I move forward from this journey with a renewed and deepened sense of responsibility. We bear a collective obligation—to share our stories courageously, to reclaim and regenerate our living systems in innovative, meaningful ways, and to equip future generations with the tools to build upon the immense legacy handed down by our ancestors. Our people, our lands, and our oceanic homes face increasing pressures from climate instability, political uncertainty, and rapid global transformations. Yet, through purposeful action and regeneration, we hold the capacity to ensure that our descendants inherit a thriving Moananui, enriched by resilience, creativity, and hope—indeed, a future beyond even our boldest dreams.

Dedication

This study is dedicated to the next generation of Moananui architects and spatial designers. May you find the courage to charter new waters, the persistence to stay on your path, and bravery to [follow your Mau](#).

01

Introduction

Moananui¹ (Pacific Ocean) is home to some of the world's most diverse Indigenous life systems. The region has one of the highest proportions of Indigenous populations globally, where Indigenous social governance systems are prevalent. Natural resources such as land and water remain under traditional management. With this way of life comes the development of local technologies, ecological knowledge, and ritual systems that characterise Moananui peoples' symbiotic relationship with their environment. This view has shaped how to build environments that conserve, maintain and evolve cultural landscapes throughout Moananui.²

Despite the diversity of these systems nested in the region, rapid development and new technologies have eroded the conservation of Moananui living systems over the last hundred and fifty years. Influenced by the ongoing effects of imperialism, colonisation, industrialisation, and climate change, Moananui socio-environmental systems are now under threat of declination and extinction (Watson, 2019). Some effects include poor food security, biodiversity loss, stark weather patterns, and erosion of customary village and urban settlement patterns (Elisara-La'ulu, 2007). Moananui thus requires radical changes to reverse the systemic challenges that threaten the region and there are radical moves to tackle these problems which include moving from a mechanical perspective to an ecological perspective in our approach to regenerative design principles. This goes beyond standardised and globalised techniques for place-based alternatives requiring us to think through a new mind³ that suggest we think more developmentally.⁴

1 Moananui as is known in most Eastern Oceania countries as the ancestral name for the great ocean, or Wonsalwara (One Salt Water) is Western Oceania countries. The term Moananui is used instead of Pacific or Oceania because of the Project site's locality, but also as a reclamation of the regional collective identity and language.

2 As expressed throughout her study (Smith, 2007, p 9, 18, 23), understanding Moana cultural landscapes is critical to understanding the relationship of built forms (fabric of villages) to their environment, as human settlements "reflect the social system or systems that have created the patterning of the cultural landscape in general" (Smith 2007, p45).

3 Mang and Reed argue that the inherent complexities in global challenges are systemic. In order to overturn them we require a different kind of mind where we can creatively navigate multiple overlapping systems – economic, social, ecological, and political (Mang, Reed, 2012).

4 Regensis (2018) define 'regenerative development' as works on potential in a way that creates greater vitality, a new source for life that brings in new energy and spirit and produces an energy field within

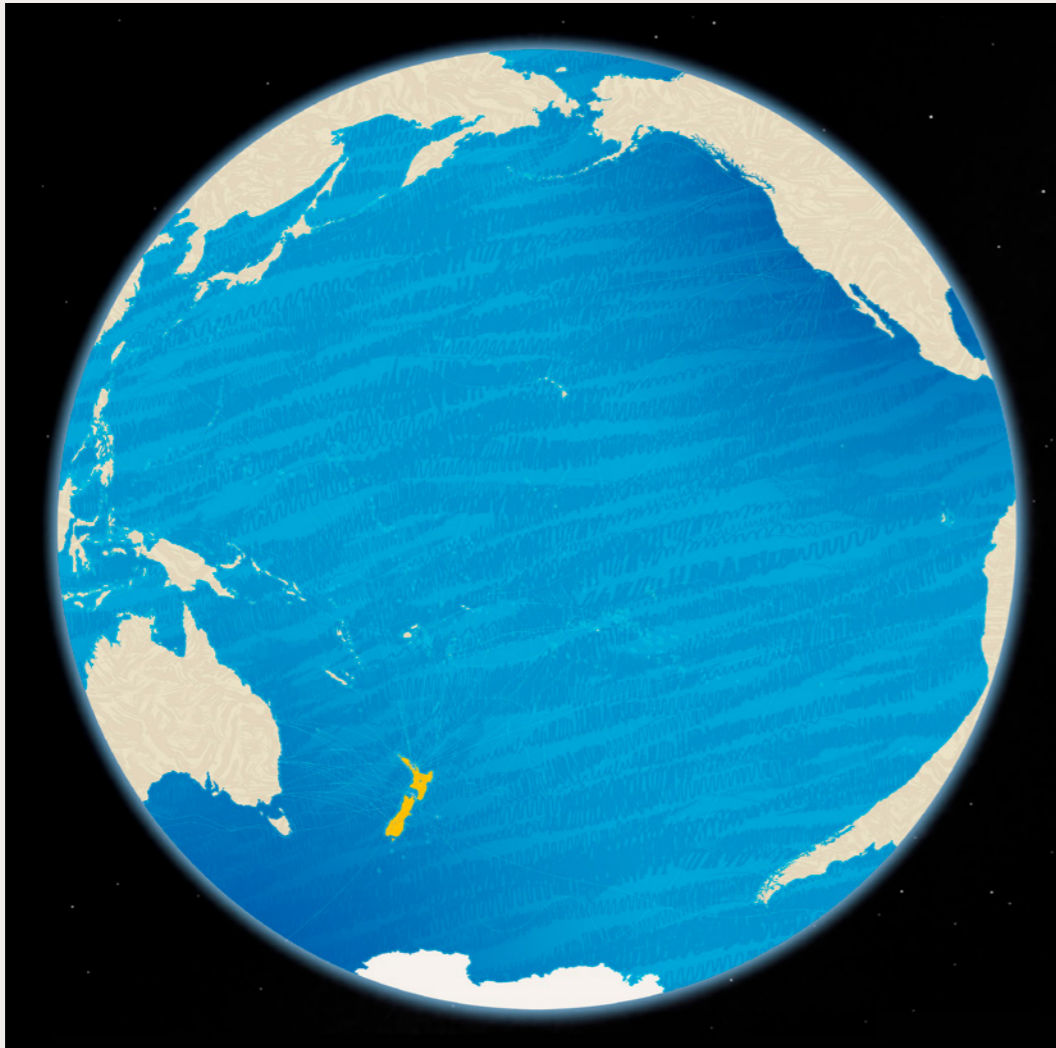


Figure 2

Map of Moananui presented in New Zealand's Pavilion 'Last Loveliest Loniest' at the 2014 Venice Architecture Biennale (Mitchell, 2016).

To achieve an ecological perspective, Maumoana, the aim of this study, therefore explores the transformative potential of regenerative design and development frameworks and methodologies to analyse and understand the vibrant living systems⁵ of the Moananui region. Regenerative design aims to develop conventional sustainability paradigms aiming to minimise harm to the environment and to actively enhance and revitalise the relationship between people and the environment. Regeneration, as defined by Regenesi, the institution for regeneration, uses a process that gives new life or energy to something that has been depleted of its physical vitality or meaning (Regenesi, 2019). The regeneration developmental process is a continual exploration and discovery of the essence of a place that allows humans to acknowledge their role and potential within an ecosystem. From this perspective, regeneration goes beyond the mechanical, extractive, and depletive norms, thus enabling designers, educators, and activists of the built environment to establish co-evolving roles within our living systems (Mang, Reed, 2012). As a result, regenerative design, development methodologies and frameworks, form the foundation of this study's practice-led component. Maumoana emphasises that regeneration is pivotal in addressing the unique challenges faced by Moananui, an area rich in biodiversity yet vulnerable to ecological degradation.

Maumoana is a practice-led study that will be employed as a design framework for the Palauli Plantation in Savai'i, Samoa, the selected site for the regenerative design proposal of the thesis. The Palauli Plantation has been the focus of numerous archaeological excavations from 1969 to 2005 (Scott, 1969; Jennings et al., 1982; Green, 2002; Asaua, 2005). Many, if not all, have concluded that the site plays a crucial role in understanding how prehistoric Samoan architecture and village settlements contributed to the development of the complex chiefdom systems and the evolution of settlement patterns of Moananui peoples dating as far back as 150 BC (Martinsson-Wallin, 2007). Among the 3000 features

which the improvement and evolution of living systems can take place.

- 5 A living system is made up of smaller systems, and nested within larger systems, all which are interconnected to create a dynamic and complex whole (Capra, 1996; Sanford, 2011). Living System is used in this study, rather than commonly used terms such as socioecosystems (Kirch, 2007) and social-environmental or social-ecological systems (Vitousek & Winter, 2022) to reflect the holarchical, multi-faceted, and evolving nature of Moananui living and relational environments within their natural environments.

excavated so far is the Pulemelei Mound, which is the largest and most prominent man-made structure in the region. Local lore suggests that Pulemelei was a site of cultural significance as it was a gathering place for chiefs, cultural ceremonies, rituals, and later ritual sport of pigeon-snaring (Martinsson-Wallin, Wallin, 2007).

Despite the clear evidence of intensive settlement on the Palauli Plantation and subsequent findings of neighbouring settlements hinting at a larger spread of smaller mounds beyond the boundaries of Palauli Plantation⁶, we still don't have a full understanding of the living systems that sustained this area. The various holarchies of Samoan settlements identified in the literature – such as the 'a'ai (family residence), pitonu'u (cluster of 'a'ai), and nu'u (Samoan village, or cluster of pitonu'u) (Jennings et al., 1982; Martinsson-Wallin et al., 2007; Jackmond et. al, 2018) — are nested within each other, and form a holistic connected system that underscores the Samoan values of balance, reciprocity, and respect for nature (Tamasese, 2007). From this research, the holarcical relationship of Samoan settlements illustrates a dynamic living system that can be seen in other parts of Moananui.

The study examines the following questions:

1. What were the characteristics of the prehistoric Samoan living system that can be found at Palauli Plantation?
2. How can we compare the living system found at Palauli Plantation with other systems across Moananui, which provides insight into historical settlement patterns in the region in developing Maumoana?
3. What common values, principles, and structural features that are shared among Moananui, and how can these inform the regenerative design proposal for Palauli Plantation?

To investigate these questions further, Maumoana undertakes an integrative process that applies regenerative methodologies to systematically analyze the interdependencies and interconnections within Moananui living systems. This analysis facilitates a deeper

⁶ Archaeological surveys in the neighbouring village of Fa'aala, Palauli, surfaced a settlement of dwellings and social spaces that are organized along a "path" (Jennings et. al, 1982).

understanding of the region's socio-ecological systems, highlighting the intrinsic relationship between Moananui peoples and the places they inhabited and cultivated for over 2000 years. Moananui living systems reflect a deep understanding of sustainable resource management, social organization, and environmental stewardship (Beamer et al, 2022). These living systems, including the ahupua'a in Hawaii, va'a mataeina'a in Tahiti, tapere in the Cook Islands, and kāinga in Aotearoa, showcase the diversity and complexity of Indigenous approaches to living systematically with nature (Beamer et al, 2022). A comparison of the settlement patterns reveals unique characteristics and shared principles among these systems, highlighting their significance in the broader context of Indigenous knowledge and sustainable practices. They offer invaluable insights into Indigenous regenerative living systems and principles, underscoring Indigenous knowledge's relevance in addressing contemporary challenges related to environmental stewardship and regenerative development.

A comparative analysis of Moananui living systems and associated literature on Samoan settlement patterns, suggests that the prehistoric Samoan living system evident in Palauli Plantation is the fua'iala system (Pratt, 1893; Jennings et. al, 1982; Kramer, 1994; Refiti, 2015). The fua'iala is articulated in the study as a socio-ecological way that Samoans incorporate dynamic and nature-based living systems in their designs, highlighting the reciprocal nature of the relationship between people and the environment. Unlike the more static concept of nu'u (UN, 2021), which connotes a fixed sense of place and ownership, fua'iala—translated as "unfolding pathways" — illustrates the Samoan view of space as a continuous, evolving entity, where community and environment are interlinked through literal and metaphorical pathways (Refiti, 2015). This system, which in past literature signified a village division or a network of interconnected family residences (Jennings et al., 1982; Martinsson-Wallin et al., 2007; Jackmond et. al, 2018), showcases the Indigenous Samoan philosophy where space is not merely inhabited but actively engaged with, creating a living system replicating the natural cycles and rhythms of the environment (Tamasese, 2007; Refiti, 2014). In this way, Samoans demonstrate a deep-rooted acknowledgement that the well-being of the community is intrinsically tied to the health and vitality of the land, thereby fostering a sustainable and interconnected living environment that is responsive to the evolving needs of both the people and their natural surroundings (Tamasese, 2005). This research contributes to the growing and ongoing research in the understanding of prehistoric living systems in Samoa and Moananui in general.

The study also develops a Moananui indigenism⁷, in methods used to explore Indigenous Moana knowledge. The study uses talanoa, su'ifefiloi, and regenerative frameworks to articulate Moananui spatial concepts, worldviews and realities into regenerative design frameworks that aid the rehabilitation, restoration and regeneration of Moananui socio-ecological living systems. By enhancing health and vitality of Moanui living systems, regenerative design offers a pathway to restore and augment the ecological integrity of the region, ensuring resilience and prosperity for future generations. The development of Moananui regenerative design frameworks have taken place in current practice within urban design in Aotearoa, Hawai'i, Tahiti, Samoa and Fiji. This arose from a need for governments and institutions across Moananui to acknowledge the role that traditional knowledge played in forming and generating wellbeing indicators for urban development. A role that includes conserving the natural environment reflects social and cultural worldviews and enhances the mauri (life force) of places (Henare, 2001; Refiti, 2008; Hoskins, 2008). An archival survey presents six case studies of Indigenous and regenerative design frameworks that have had a particular influence on the development of Maumoana. Most notably these frameworks are Te Aranga Principles, Aotearoa; the 9 Generative Principles in Samoan of Indigenous Samoan architecture formulated by Micah van der Ryn, the Mauri Ora Compass, Design and Development Principles, USA (Regenesis, 2019)

In the development of Indigenous Moananui regenerative design frameworks, the study investigates

1. How can the regeneration of mau and other Moananui spatial concepts and values build self-determination, resilience, and sovereignty for Moananui communities?
2. What role can Indigenous regenerative design principles play in the conservation, restoration and regeneration of Moananui living systems?

⁷ The concept "radical indigenism" was coined by Eva Marie Garoutte, arguing for a rebuilding of knowledge and exploring the potential of Indigenous worldviews in developing conversations on Indigenous identity (Garoutte, 2005). Design by radical indigenism is a movement developed by Julia Watson that rebuilds an understanding of Indigenous philosophies to generate sustainable and climate-resilient infrastructures (Watson, 2019)

3. How can Indigenous regenerative design frameworks encourage place-based development and foster interconnection and evolution alongside other Moananui living systems?

This exploration resulted in the development of the Indigenous regenerative design framework, Maumoana. Central to Maumoana are the concepts of 'Mau' and 'Moana,' symbolising resilience and identity in Moananui. 'Mau,' meaning to persevere or to hold steadfast to one's convictions, has evolved from its literal interpretation to embody a movement of cultural preservation and resistance against external influences. It represents the resilience and enduring spirit of Moananui communities, underscoring their commitment to preserve and evolve their cultural worldviews and practices. 'Moana,' meaning ocean or sea, is pivotal to the cultural identity of Pacific peoples, facilitating a departure from traditional Western notions of identity towards a more interconnected and fluid understanding of community and environment. This Moana identity highlights the importance of relationships between the Pacific cultures and the ocean, celebrating the collective contributions of diverse Moananui communities to a rich, shared cultural heritage. Through Maumoana, these concepts are preserved and dynamically engaged to regenerate and enrich the living systems and cultural landscapes of Moananui. The regenerative design framework reinterprets Indigenous Moananui spatial worldviews to rehabilitate, reconstruct, and regenerate the living systems of Moananui in culturally relevant and innovative ways. Maumoana draws upon seven key spatial concepts to develop frameworks that are critical in the sustenance of physical and spiritual environments in Moananui – they being Vā Moana, Mauri Moana, Mana Moana, Vanua Moana, Ara Moana, Wao Moana, and Mau Moana, this approach revitalizes and restores ecological and cultural integrity across the region. Each framework comprises three additional spatial concepts critical in the maintenance and transfer of the framework into projects. By integrating these frameworks into regenerative developments, Maumoana fosters a holistic engagement at the confluence of architecture, education, innovation, international development, and indigenism. This methodology enables communities, educational institutions, and governments to adopt a new perspective that nurtures resilience, self-determination, and hope within Moananui communities.

Maumoana will serve as a foundational framework and methodology to guide the Feasibility Study developed for Palauli Plantation by OF Nelson Properties Limited. As of July 2019, the OF Nelson Properties Ltd shareholders decree indicated that portions of the land would be sold (OFNPL, 2019). As expressed by local villages and institutions, the land sale will undo conservation efforts to safeguard Pulemelei and the surrounding cultural heritage landscape.⁸ However, in response to the public outcry that followed, the OFNPL directors issued a press statement stating that Pulemelei and surrounding sites of significance would not be part of the sale but "part of a separate management arrangement for the benefit of Samoa" (OFNPL, 2020). As part of the management arrangement, the OFNPL has approved implementing a Regenerative Feasibility Study to map out potential land-use opportunities that will conserve, restore, and regenerate the tangible and intangible heritage landscape of Palauli Plantation.

Moananui living systems are disproportionately affected by systemic and ecological catastrophes. The regeneration of mau underscores the profound capacity of Indigenous Moananui knowledge to forge communities that are not only resilient and connected but fundamentally regenerative. By embracing our ancestral wisdom and reinvigorating our mau, we have the potential to craft built environments that serve as bastions of healing, justice, and peace. This return to Indigenous methodologies does more than address immediate ecological challenges; it reclaims and revitalizes a heritage of environmental stewardship, ensuring that our interventions in the natural world promote sustainability and equity for future generations. In advocating for such transformation, we protect our ecosystems and empower Moananui communities to lead in the global dialogue on environmental resilience and justice.

⁸ Mayron, 2020. Two Samoa Observer articles were written in response to the Expression of Interest. Both were critical in mapping the contextual forces at play in Palauli Plantation.



Figure 3

Mau Piailug teaching his son and grandson the foundations of celestial navigation (Ryman, 1993).

02

Methodology

The study utilises a variety of techniques, processes, and methods to develop a series of Moananui regenerative design and development principles. With particular attention on integrating Moananui worldviews, the study draws upon a diverse spectrum of Moananui case studies and philosophies, employing epistemological and phenomenological methodologies (van Manen, 1997) to build grounded relationships with participants and collaborators. Finally, as a means of nesting the design and development principles within a Moananui living-system, the research is a creative practice-led study that demonstrates how the principles can be a solution in conserving Moananui cultural landscapes, develop educational resources for systemic transformation, and build resilient frameworks for Moananui communities to thrive in future environments.

Su'ifefiloi Research Methodology

Su'ifefiloi is an epistemological research method that illustrates and interweaves paradigms and systems of knowledge to create something new (Tielu, 2016, p. 30). The framework allows for the intentional blending, dissecting, and patching together of social realities, techniques, methodologies, and worldviews as a means to understand or produce new outcomes, values, or purposes. Su'ifefiloi is metaphorically likened to traditional Samoan art forms such as the process of making ula lei/ fa'asolo (Fiegel, 1998; Tielu), filiga'afa (sinnet rigging) and lalaga (fine mat weaving) (Silipa, 2008). The processes, ingredients, and forms of Moananui Indigenous making vary within the contexts, however their representation of aroha, mana, and meaningful connection remains largely the same. "Su"i means to sew or stitch, and "fefiloi" describes a mixture and interweaving. As with the Indigenous "traditions", Su'ifefiloi research methodology is an active search of practices, perspectives, and connections that represent newly formed tensions, energies, and outcomes in a research environment.

Silipa's process of creating alternative learning models for Samoan education was developed utilising Su'ifefiloi. Silipa's continual reflections on his personal experience of fa'asamoa was equated to an ie toga (fine mat):

My educational journey could be equated to weaving an ietoga (a seamless garment which transversely takes time, patience endurance

and perseverance) and began within my “āiga” my home (inclusive of its social and living histories and geographies, significant education of give and take), as my first school and classroom populated by my “mātua ma ‘āiga” my parents and members of my extended family as my first teachers, mentors and “community of both teachers and learners. (p. 5)

The value of this reflection allowed Silipa to understand the various strands of social structures, strengthening his concept of self and sense of belonging. Ultimately, this reflection led to the development of alternative mechanisms to improve learning environments for Samoans.

Albert Refiti’s use of Su’ifefiloi is particularly relevant to this study in his thesis *Mavae and Tofiga: Spatial Exposition of the Samoan Cosmogony and Architecture* (2015). The research methodology realised Refiti’s navigation of the complexities of Samoan concepts of space that enabled the “stitching-together of heterogeneous materials” from various industries and philosophies (Refiti, 2015, p. 39). Central to this approach was the interweaving of non-Samoan concepts such as bricolage, explored by philosophers Gilles Deleuze and Felix Guattari (1983), to give a non-linear, “psychedelic” perspective of Samoan notions of space such as noa, mana, and tapu. This is evident in his explanation of the Su’ifefiloi process in his study:

The movement between images and texts, their connection and separation, strategies of confinement and release, resembles the rolling motion of the ocean, which gathers and pushes up a stair-casing energy of water into a bulging restrained force that, once released, causes an almighty clamour. Ever present, it shapes key concepts ordering the Samoan world. (Refiti, 2015, p.41)

The Su’ifefiloi methodology, central to this study, intricately weaves together various frameworks to form the foundation of the thesis design. By integrating the Talanoa Research Methodology with Regenerative Design and Development Frameworks, Su’ifefiloi enables a comprehensive approach that facilitates the inclusion of regenerative design frameworks and Moananui spatial systems into Maumoana—a series of Moananui Design Frameworks

dedicated to revitalizing Moananui living systems. This methodology promotes a holistic and participatory process, allowing for the seamless integration of cultural, ecological, and spatial dimensions to foster sustainable and resilient communities. By leveraging the power of storytelling and systemic thinking, Su’ifefiloi ensures that design principles are not only contextually relevant but also capable of enhancing the social, economic, and ecological fabric of Moananui environments, thereby advocating for a regenerative future deeply rooted in place-based knowledge and practices.

Talanoa Methodology

Talanoa is a concept recognized by Moananui cultures as an active process of building empathy (Farrelly & Nabobo-Baba, 2011), resolving conflicts (Halapua, 2008), and developing Moananui cultural values (Nainoca, 2011; Vaioleti, 2006). The term “talanoa” linguistically derives from “tala,” meaning to inform, tell, relate, command, ask, or apply, and “noa,” meaning free and unrestrained, often characterizing entities outside known polities (Refiti, 2015). For many Moana cultures, talanoa represents an indigenous communication process involving multi-layered and multi-leveled critical discussions and free conversations (Vaioleti, 2006). Halapua (2003) and Farrelly and Nabobo-Baba (2011) describe talanoa as:

... a philosophy involving 'an open dialogue where people can speak from their hearts and where there are no preconceptions.' Talking straight from the heart opens up space for greater empathic understanding – this is the emic perspective sought by all good ethnographic researchers.

In a research context, Talanoa is a phenomenological research approach oriented towards the recognition of Moananui aspirations while concurrently developing and practicing Moananui theoretical and methodological preferences for research (Vaioleti, 2006). The methodology binds both researcher and participant in a deep, interpersonal relationship by providing a safe space for reciprocal emotional and cultural exchange (Morrison et al., 2002). For these reasons, Talanoa is regarded as one of the most prominently used research methodologies across the Moana (Farrelly & Nabobo-Baba, 2011).

Maumoana leverages Talanoa to guide meaningful engagement with research participants, ensuring their contributions are respected and integrated into the research outputs. By weaving together diverse frameworks, Talanoa fosters an environment where participants' voices are central to the research process, enhancing the depth and relevance of the findings. Talanoa facilitates empathetic and conflict-resolving dialogue, allowing participants to share their experiences and insights freely and unrestrained. This methodology not only respects but also elevates the cultural values and aspirations of Moananui communities, ensuring that research outcomes are rooted in indigenous knowledge systems and practices. By using Talanoa, Maumoana underscores the importance of co-creating knowledge with participants, ensuring that their lived experiences and cultural perspectives are integral to the research narrative and its subsequent applications.

Regenerative Design and Development Principle

Regenerative Development and Design is the convergence and evolution of a wide range of disciplines and methodologies including architecture, urban planning, permaculture, living systems theory, and indigenism. At the intersection of these worldviews, lies the acknowledgement that for humanity to thrive, we must retake our place as part of nature (Regenesis, 2019).

Carol Sanford describes regeneration as:

A process by which people, institutions, and materials evolve the capacity to fulfil their inherent potential in a world that is constantly changing around them. This can only be accomplished by going back to their roots, their origins, or their foundations to discover what is truly singular or essential about them. Bringing this essential core forward to express it as new capacity and relevance is another way to describe the process of regeneration. In other words, regeneration is the means by which enlightened, disruptive innovation happens. (Sanford, 2017)

To further understand the concept of Mau and Moananui notions of space and connectivity, I turn to regeneration frameworks developed by Regenesis Inc. as a means of seeing, understanding, and communicating the significant interdependent relationship within Moananui philosophies of space, and the living systems of Palauli Plantation. The frameworks developed from the Regenerative Practitioner course which I completed in 2019 are applied in the study to understand the essence patterns of Mau in Moananui living systems that have continued to influence our worldview and resilience in historic catastrophes and endeavours. As outlined in their Regenerative Practitioner course:

Frameworks enable us to understand how living systems are structuring themselves to accomplish their purposes. In particular, frameworks help us see, understand, and communicate the significance of interdependent relationships in intelligible and meaningful ways. This enables us to create designs that are consistent with the dynamism, evolutionary tendencies, and interdependence characteristic of living systems. (Regenesis, 2018)

One particular framework used as an underlying methodology in the study is the Regenerative Practice Methodology, a methodology developed through regenerative practitioners and collaborators during the evolution of regenerative development (Mang, Reed; 2012). The framework illustrates the fundamental components of the practice methodology, which includes three phases and three developmental processes that are crucial for establishing and maintaining an evolutionary spiral which has been translated and developed in this study as Maumoana (see Chapter 5) . By implementing the methodology, the living system's capacity can develop and evolve over time during the actualisation of a project (2012). The phases and processes are outlined in three key steps:

Step 01: Understand the Relationship to Place

To gain a deep understanding of how humans can support the health and ongoing evolution of a place and its living systems, an Integral Assessment is conducted. This assessment considers all aspects of the system, including cultural, economic, geographic, climatic, and

ecological factors. It provides a foundational understanding that is essential for enabling the place and its inhabitants to thrive.

To complement this assessment, a Story of Place is co-created with the client or community. This approach leverages the power of storytelling to express the essence of a place, its role in the world, and the potential for collaboration between its inhabitants and the environment. By combining the Integral Assessment and the Story of Place, a holistic understanding of the place and its potential is gained, setting the stage for regenerative development.

Step 02: Designing for Harmony with Place

This understanding is translated into design principles and integrated plans that aim to optimize the coexistence of humans and their environment. By harmonizing with the larger pattern of the place, buildings and infrastructure can be designed to improve the land and ecosystems, while also enhancing the well-being of those who inhabit them. This approach leverages the unique attributes of the land to improve the built environment, resulting in a mutually beneficial relationship.

To enact this, design principles and construction processes are developed that ensure synergy with the land and ecosystems. This approach maximizes the effectiveness of green design features and technologies, resulting in lower costs, improved ecosystem health, and increased productivity. By taking a regenerative approach to design and construction, the built environment can become an integral and harmonious part of the larger ecosystem, enhancing the well-being of both humans and the environment.

Step 3: Co-Evolution

The third phase is a natural continuation of the previous two phases. If the efforts to create a culture of co-evolution around the project have been successful, the impact can be observed even before the project's final build-out. In this phase, the designer's role shifts to that of a resource, providing processes and methods that sustain the connection

to the place as a context for enabling owners, managers, maintenance contractors, and community stakeholders to identify and integrate new social, economic, and ecological opportunities as the place evolves.

Through this approach, the project becomes more than just a physical product. It becomes an ongoing process of co-creation and evolution, with the designer serving as a facilitator and guide. By incorporating this culture of co-evolution, the project can adapt and thrive over time, reflecting the changing needs and opportunities of the place and its inhabitants.

Thesis Structure

The methodologies utilised in the thesis are woven throughout the study, providing a foundation to explore Moananui worldviews and realities and structuring the development of Moananui design principles. As an example, the overarching framework of the thesis draws inspiration from Regensis' "Practice Methodology" as a means to structure the three main components of the study, as follows:

1) Palauli Plantation

(Chapter 02 – 03)

In the first two chapters, I explore the significant contributions that have shaped the understanding of Moananui from Indigenous and diasporic contexts. The outcomes of the chapter is to understand the living systems that exist at Palauli Plantation, and its relationship to other living systems of Moananui in which it is nested within.

2) Moananui Regenerative Design and Development Principles

(Chapter 04 – 05)

The following two chapters entails the development of unique regenerative design and development principles for Moananui. Chapter 04 explores a diverse range of established Indigenous and regenerative design principles which have been catalysts for systems-change in their applied contexts. Then in chapter 05, the study presents a series of Regenerative Design frameworks that regenerate Moananui cultural worldviews associated with “space” and “place”, and their evolution is inextricably linked to the essence of Moananui.

3) Spatial application of Maumoana in Palauli Plantation

(Chapter 06)

Lastly, the regenerative design frameworks are spatially explored and applied in Palauli Plantation, Palauli, Savai'i, Samoa. The spatial exploration is a parallel design process with a Feasibility Study the landowners are currently developing for the site. In reflection, the application of Maumoana in contexts to test the principles' evolutionary capacity to adapt and regenerate in various contexts across Moananui.

The “Regenerative Practice Methodology” is again woven into the structuring of each chapter. To complement that process, within each chapter the study employs the su'ifefiloi methodology to stitch and integrate regenerative frameworks with Moananui worldviews to formulate Moananui regenerative systems, frameworks and principles. Each chapter includes three main sections:

1) Regenerative Framework

Each section starts off by introducing a regenerative framework. In effect, the framework is used to articulate the nested systems and energies each chapter is exploring. The section frames the purpose, research questions, and outcomes of each chapter, providing a lens for the reader to enter with.

2) Literature and Case Study analysis

Using the regenerative frameworks, I draw upon archival literature and excerpts from talanoa to surface to build the theory of Maumoana. Included in these chapters are surfacing living systems of Moananui identity and place and exploring established Indigenous and regenerative design principles.

3) Summary of findings

Concluding each chapter is a section dedicated to the summary of thematic findings. The purpose of the section is to formulate a series of themes that underpin the regenerative design and development principles. The themes are then integrated into the principles articulated in Chapter 05.

In essence, the structure of the thesis is a stitching and layering of regenerative frameworks that builds the capacity of the reader and target audience to understand the systems and energies that are being harnessed to develop Maumoana. Regenerative frameworks provide clarity and intentionality during this developmental process, and ensures that Maumoana focuses on the development of whole systems that regenerate the essence and spirit of Moananui. By structing the thesis purpose, outcomes and process in this manner, will offer communities, institutions, and governments alike to view the region with a new mind and create systemic offerings that build resilience, self-determination, and hope for Moananui communities.

03

Moananui Living Systems

In this chapter, the study delves into the multifaceted history of Palauli Plantation, a site of profound cultural, ecological, and social significance within Samoa's prehistoric context. The exploration is twofold: the first aims study to unravel the prehistoric context of Palauli Plantation, the cultural, ecological, and social dimensions that have shaped the landscape. This investigation is anchored in the extensive archaeological findings within the plantation, which reveal a complex and sophisticated ancient society, exemplified by the monumental Pulemelei Mound and other significant features.

Second, to enrich our understanding of Palauli's ancient settlement patterns and living systems, the study engages with the broader Moananui living systems. This comparative analysis places Palauli within the larger network of Moananui societies, examining how these interconnected systems reflect broader regional patterns in environmental management, social organisation, and cultural practices. By exploring these complementary systems, we aim to shed light on the underlying principles and practices that governed ancient Samoan life, offering insights into the region's unique adaptation to its natural surroundings.

Finally, the chapter culminates in synthesising these findings to construct a comprehensive picture of the Moananui mountain ridge-to-reef living system. This synthesis will not only enhance our understanding of Palauli's historical landscape but also serve as a foundational element for the study's practice-led component. By integrating this newfound understanding, the subsequent sections of the study will explore how these traditional knowledge systems and land management practices can inform contemporary strategies, addressing modern challenges while honoring the legacy of Samoa's ancestral heritage. This approach underscores the relevance of Palauli's past in shaping future pathways, bridging historical insights with practical applications in today's context.

Sphere of Influence framework

The Spheres of Influence framework, created by Regenesi (2018), offers a structured approach to mapping the nested systems of place, emphasizing their significant relationships to a regenerative initiative. This framework facilitates a comprehensive understanding of the interconnected living systems involved in any given project. By examining these holarchies, we gain insights into the nature of a place through their interconnectedness and shared interests.

1. Regenerative Project

At the core of the framework is the project itself, which can vary in scale from a single building or infrastructure component to an extensive regional planning endeavor.

2. Proximate Whole/ Place

Surrounding the project is the proximate whole, a living system closely tied to the project. This entity, often referred to as the project's "place," is defined by natural landscape features and cultural boundaries, representing a coherent and bounded system.

3. Dynamic Relationships

The framework illustrates the dynamic relationships between the project and its proximate whole through connecting arrows. These arrows symbolize the mutual influence between the project and its immediate sphere of influence, highlighting the current and future impacts of each on the other.

4. Greater Whole

The next level encompasses the greater whole, a larger system that includes the proximate whole. For instance, a neighborhood exists within a city, and a foodshed is part of a watershed or a broader geological system. Depending on the project, the greater whole could also represent a field of endeavor rather than a physical system.

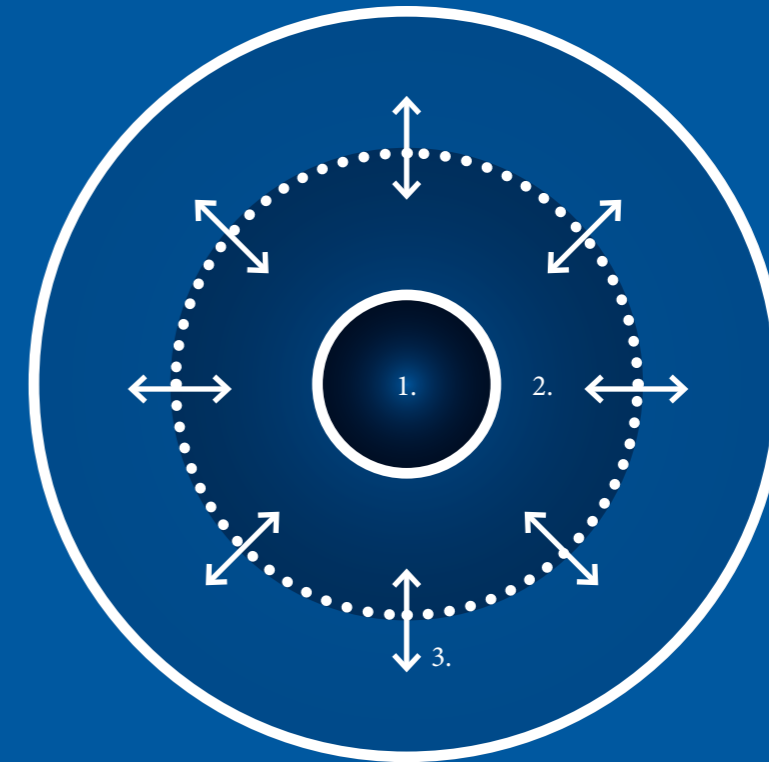


Figure 4

Regenesi's Spheres of Influence.

1: Project; 2: Proximate Whole; 3: Dynamic Relationships; 4: Greater Whole

A crucial insight from this framework is that effective project planning should not begin with the project itself but with an understanding of the proximate whole or place (Regenesi, 2018). The regenerative potential of a project is derived from its relationship with the larger systems in which it is embedded, not from the project in isolation. This shift in perspective ensures a holistic approach, fostering the development of regenerative projects that are deeply connected to and supportive of their surrounding environments. The Spheres of Influence framework is employed in this study to illustrate the nested relationships of Palauli Plantation and the various holarchies it both influences and is influenced by. These holarchies are delineated as follows:

1. Palauli Plantation (Regenerative Project)

Serving as the project site for the practice-led component of this study, Palauli Plantation spans 1100 acres and is currently owned by the Olaf Frederick Nelson Properties Limited Company. The plantation holds significant historical and cultural heritage, reflecting a rich pattern of settlement over 2000 years.

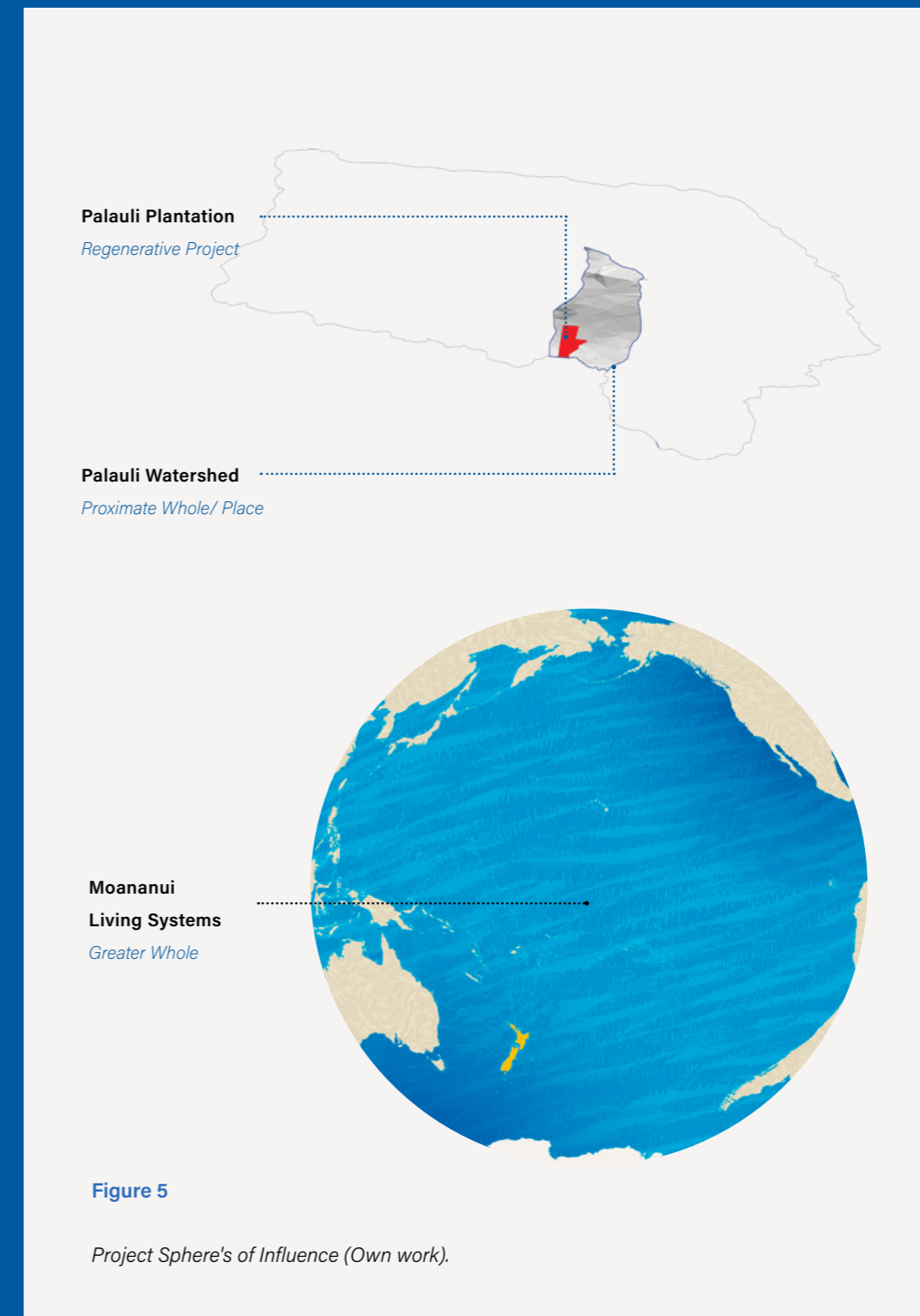
2. Palauli Watershed (Proximate Whole/Place)

Palauli Plantation is embedded within the Palauli Watershed, which encompasses the villages of Vailoa, Vaito'omuli, and Fa'aala. These villages share a profound and inextricable connection to the land. Defining the Watershed as the "Place" builds upon the established understanding of settlement patterns as surveyed by Gregory Jackmond, demonstrating why these communities have flourished for nearly 2000 years.

3. Moananui Living Systems (Greater Whole)

The study extends its analysis to the broader Moananui Living Systems to gain a deeper understanding of Samoan living systems, specifically those associated with Palauli Plantation. Due to the limited documentation of prehistoric Samoan living systems, examining Moananui Living Systems provides valuable insights into the enduring patterns and influences these holarchies exert on one another.

By using the Spheres of Influence framework, this study underscores the interconnectedness and mutual impact of these nested systems, advocating for a holistic approach to understanding and fostering regenerative development within Palauli Plantation and beyond.



Moananui Living Systems

Moananui (Pacific Ocean) has been the home to some of the most diverse Indigenous life systems in the world. The region has one of the highest proportions of Indigenous populations globally, and traditional political systems are still prevalent. Natural resources such as land and water remain under traditional management. With this way of life comes the development of local technologies, ecological knowledge, and ritual systems that characterise local peoples symbiotic relationship with the environment. This view has shaped how to build environments that conserve, maintain and evolve cultural heritage landscapes in Moananui.⁹

The settlement history in Moananui, particularly in Samoa, illustrates a dynamic evolution of human settlements, agricultural practices, and technological advancements, reflecting a broader narrative of cultural diffusion and environmental adaptation across the region. Patrick Kirch's concept of "transported landscapes" encapsulates the transformation of Polynesian islands by early settlers, who created familiar habitats by introducing trees and root crops, shaping the ecological and agricultural landscapes of the regions Kirch (1982; 2000) noted that it is particularly relevant for Samoa as it is located at the pivotal juncture between West and East Polynesia, serving as a conduit for the dissemination of cultural traits and agricultural practices across the expansive Polynesian triangle (Green, 1991; Whistler, 1991; Spriggs, 1998; Kirch, 2000).

Samoa's role is critical in understanding the phylogenetic relationships between Polynesian societies, with East Polynesian communities tracing their origins back to West Polynesian cultures, such as those found in Samoa (Burrows, 1939; Kirch and Green, 1987; Marck, 1999). It is argued that extensive and intricate agricultural systems, like the terraced pondfields and irrigated fields seen in other Polynesian islands, were less prevalent in Samoa (Hiroa, 1930; Kirch and Green, 2001; Carson, 2006).

⁹ As expressed throughout her study (Smith, 2007, p 9, 18, 23), understanding Moana cultural heritage landscapes is critical to understanding the relationship of built forms (fabric of villages) to their environment, as human settlements "reflect the social system or systems that have created the patterning of the cultural landscape in general" (Smith 2007, p45).

However, recent findings in the Aleipata region of Upolu (Jackmond et.al, 1982) suggest a complex landscape of agricultural and settlement organisation. LiDAR and ground surveys have uncovered extensive networks of channels, possibly used for drainage, demarcating land, or protecting community spaces, indicating a sophisticated understanding of land and water management akin to practices observed in other Moananui contexts (Jackmond et. al, 2018).

These findings in Aleipata, revealing a honeycomb pattern of channels extending across significant distances, suggest a nuanced adaptation to Samoa's environment, paralleling agricultural and settlement strategies seen in other places for instance the Stonefields of Ihumatao in Aotearoa New Zealand (Mackintosh, 2021). While not identical to the more elaborate systems found in other Polynesian islands, these Samoan adaptations reflect a distinct manifestation of Polynesian ingenuity in landscape modification and agricultural intensification, offering new insights into the complex tapestry of settlement and environmental interaction that characterizes the history of human habitation in Moananui (Mackintosh, 2021).

Dense settlement patterns identified in Palauli Plantation, coupled with domestic and communal function (umu ti, clustered residential units and communal wards) also suggest that intensive agricultural development, at the very least water harvesting and food cultivation, also existed and an part of social, cultural and economic development in Palauli. The following section develops on a hypothesis that Samoa did in fact have intensive agricultural development as evidenced by surveys in Aleipata, and that these agricultural systems evolved with human settlement and environmental adaption during the migration in the first millenia.

Palauli Plantation

Palauli Plantation, a significant archaeological and historical site located on the south coast of Savai'i in Samoa, represents a unique confluence of cultural, environmental, and historical narratives. This expansive area, stretching 2.5km inland from the coast and reaching elevations of 250m above sea level, is bordered by Faleata to the east and the Seugagogo River to the west. It is a testament to Samoa's rich past, offering insights into pre-colonial settlement patterns, colonial histories, and the evolution of land ownership in the region.

Archaeological investigations and surveys by Gregory Jackmond in 1977-1978 have unearthed over 3000 features within the Palauli plantation indicating that there was a complex and highly organised society that settled the area. These features include stone platforms, roads, stone fences and walkways, earth ovens, and refuse piles. They show the existence of a highly organised social and economic system that supported a large community requiring a sophisticated cultural system to maintain the construction of a ritual centre and numerous dwellings connected by raised stone pathways. The archaeological surveys carried out in the 1960's, 1980's and in late 2000 have been critical in giving us a picture of the culture and settlement patterns of Samoan of pre-historical (Scott, 1969; Jennings et al. 1982; Green, 2002; Asaua, 2005; Martinsson-Wallin et al., 2007). Among these, the Pulemelei Mound stands out as a monumental testament to pre-historical engineering and social organisation. Measuring 65m by 60m at its base and rising to a height of 12m, it is considered one of the largest freestanding stone structures across Moananui (Martinsson-Wallin, 2007).¹⁰ Positioned approximately 1.5km inland from the south coast and 100m above sea level, the mound's strategic location underscore its potential role as a central hub for cultural, environmental, ecological, social, and spiritual activities, highlighting the interconnectedness of these aspects in Samoan life (Wallin, Martinsson-Wallin, 2007).

¹⁰ Martinsson-Wallin, 2007. The other large mound in area but not height is the Laupule mound on Upolu, see Martinsson-Wallin, H. (2014). Archaeological Investigations in Independent Samoa-" Tala Eli" of Laupule Mound and Beyond.

Figure 6

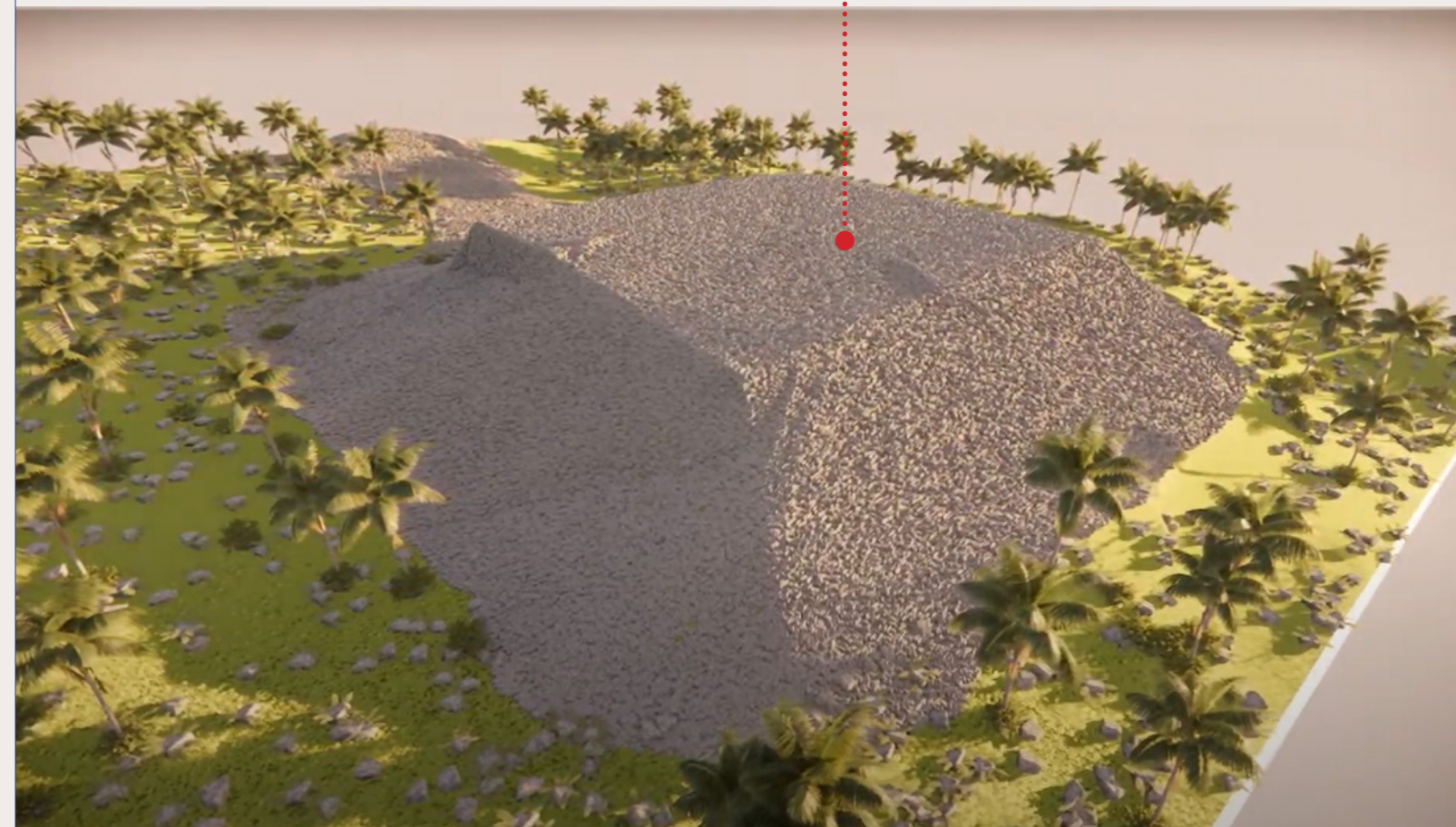
3D Model of Palauli Plantation
(Own work)

Figure 7

3D Model of Pulemelei Mound
(Own work).

Figure 8

2D Plan of Palauli Plantation with
archaeological data (next page)
(Own work).



Maumoana

Auckland University of Technology

An indigenous framework for regenerating Moananui living systems

School of Art and Design

PAWANU

SATUPATEA

PAUJUI

SOUTH COAST ROAD

SOUTH COAST ROAD

172° 21'W

172° 20'W

172° 19'W

172° 18'W

172° 17'W

13° 43'S

13° 43'S

13° 44'S

13° 44'S

13° 45'S

13° 45'S

13° 46'S

13° 46'S

172° 21'W

172° 20'W

172° 19'W

172° 18'W

172° 17'W

Cultural Capital

The cultural significance of Palauli Plantation, particularly through the lens of the Pulemelei Mound, provides a profound insight into the values, beliefs, and psychological systems that underpinned Samoan society in prehistoric times. The archaeological findings at the plantation, encompassing over 3000 features including the monumental Pulemelei Mound, serve as a testament to the sophisticated and nuanced cultural practices that characterized ancient Samoan settlement and civilization (Wallin, Martinsson-Wallin, 2007).

Functionally, large mounds in Samoan culture, as revealed through archaeological and traditional historical examination, illustrates a multifaceted approach to space utilisation that was imbued with significant cultural meaning. Pulemelei Mound, built in stages from 1100-1300AD (Wallin, Martinsson-Wallin & Etal, 2007), aligns with the broader Polynesian tradition of mound building, which may have been influenced by regional interactions, such as intermarriage and settlement by Tonga.¹¹ Stone and earth mounds on the site, including Pulemelei, were not merely physical structures but were imbued with a multitude of functions—residential, ceremonial, and possibly even spiritual (Scott, 1969). The suggestion that mounds could serve as pigeon snaring sites, house foundations, or ceremonial spaces indicates a complex interplay between daily life, societal organisation, and spiritual beliefs (Tui Atua, 2004). The possibility that Pulemelei mound was the residence of Lilomaiava Nailevaililili, ali'i sili (paramount ruler) of Vailoa¹², or a site for religious structures underscores its role as a focal point of social and spiritual life, reflecting a hierarchical society where chiefs held substantial power and spiritual significance (Davidson, 1974).

Local tradition posits the mound as a residence for atua (gods) and aitu (spirits), where shell trumpets were used to call back these entities each night, offers a fascinating glimpse into the Samoan cosmological worldview. On top of the mound were found what looked

11 (Kirch, 1984). On the site, there is a "Pā Tonga", a fortification said to have been defence against Tongan invasion.

12 Kramer (1994) suggested that Lilomaiava Nailevaililili had potentially resided on the Pulemelei Mound roughly 25 generations ago (ca. 1650-1680AD)

like four stone seats each with a conch shell that believed to emphasise the ceremonial and spiritual use of the mound. Conch shells are associated with communication and ritual in many Pacific cultures indicating that here were artifacts that integral to the ceremonial use of the mound to potentially summon or communicate with the divine or ancestral spirits (Pulenu'u Toluono Pene, Vailoa village, pers. comm. 2006). They highlight the deep-seated belief in the interconnectedness of the physical and spiritual worlds, where specific locations served as liminal spaces for interaction with the divine or supernatural.

The cultural significance of Palauli Plantation and the Pulemelei mound within the broader context of Samoan prehistory is a compelling narrative of how physical structures can embody and reflect the complex interweaving of social order, spiritual beliefs, and cultural practices. Pulemelei not only provides us with insights into the architectural ingenuity of ancient Samoans but also offer a window into the profound spiritual and societal values that guided their lives, where the land and its structures were central to the community's identity, beliefs, and continuity. Although the accounts aforementioned suggests cultural and spiritual significance, there is yet to be any definitive resolution on the systematic function of the archaeological findings and settlement patterns. One potential avenue, which has yet to be fully realized, is the understanding of the relationality between the cultural and ecological systems, and how this sustained people living here and would also explain the settlement patterns that occurred. So the study asks what is the ecological make-up of Palauli Plantation? How did ecology influence prehistoric settlement patterns in Palauli Plantation?

Ecological Capital

The ecological system of Palauli Plantation is a testament to the intricate interplay between natural environments and human habitation has evolved over millennia. The watershed's unique topographical and hydrological characteristics have not only shaped the natural landscape but have also influenced human settlement patterns, agricultural practices, and the construction of monumental structures such as the Pulemelei Mound.

The Palauli Plantation is nested within the Palauli Watershed. The Palauli Watershed encompasses an area of approximately 5920 hectares from ridge to reef, and is bordered by the Safua Watershed to the East, and the Sili Watershed to the West. The Palauli

Watershed, is one of 30 watersheds nestled within the island of Savai'i, encompasses a diverse range of ecological zones, from uplands and foothills to coastal areas, each offering distinct resources and constraints for human settlements (MNRE, 2013). The geological formations within the watershed, predominantly consisting of slight olive basalt, have given rise to a landscape characterised by steep slopes and deeply incised river valleys. This topography has played a critical role in developing the region's hydrology, with a network of rivers and streams shaping the watershed's ecological dynamics.

Studying watersheds within settlement areas provides a clear understanding of how vital ecological frameworks were developed by Indigenous communities to settle, distribute, use and cultivate natural water resources for their benefit. They represent integrated natural systems that are similar to other living systems across the region, characterised by unique landscape features with available resources and climatic conditions that are cultivated and settled by communities with unique sociocultural histories of land use that are distinctive to that location (Carr, 2021.).

A watershed defined the boundaries of a system of hydrologically connected people, places, and things; the activities at every point in a watershed impact all points downstream and are impacted by activities at all points in time.¹³

By defining the watershed as such, our understanding of Palauli Plantation goes beyond the tangible archaeological findings as merely physical settlement patterns. But by viewing the archaeological findings in this light, we can determine that the prehistoric settlement patterns on Palauli Plantation as part of an interconnected network of inter-and intra-connected socio-hydrological systems.

¹³ Meierdiercks et. al, (2024) define the term watersheds to reflect modern uses and functions as inter-and intra-connected socio-hydrological systems, 2024. Some of the outdated definitions of watershed include defining it solely as an area that drains to a single point reflecting the basic hydrologic functions of a watershed: collecting, storing and discharging water (Black, 1997). This definition emphasizes watersheds as lumped areas with a singular geographic function and does not capture the complexity and interconnectedness of socio-hydrologic systems within and across watersheds, crucial to watershed understanding and management (Meierdiercks et. Al, 2024).

Hydrological features of the watershed, with its distinct river streams predominantly located in the southern and mid-regions, suggested that it played a critical role in supporting both the agricultural practices and the settlement patterns of the area. The presence of rivers and well-drained soil areas (MNRE, 2013) could well have influenced the spatial organisation of Samoan communities. Hydrologic features such as springs, aquifers, and rivers are locations where water resources were readily accessible and where the land was most fertile – highlighting the potential for prehistoric Samoan community's ability for agricultural cultivation at scale (Jackson et. al, 2018 & 2019).¹⁴ The Palauli Watershed is a mosaic of fernlands and disturbed secondary forests, which together form the majority of the landscape. These ecosystems provide a range of services, from soil stabilisation and water filtration to habitat provision for diverse species. The dominance of fernlands and secondary forests suggests a landscape that has been shaped by both natural processes and human activities, reflecting a history of interaction with the environment that has influenced ecological patterns.

Palauli Watershed's ecological system is not just a backdrop for human activity but a dynamic participant in the life of the area. The network of rivers and streams, critical for both ecological processes and human use, underscores the interconnectedness of the watershed. These waterways are vital for agriculture, providing irrigation and supporting the rich biodiversity that, in turn, sustains human communities (see Figure 8 and 9). Understanding the socio-hydrologic connections within the watershed is crucial for managing its resources sustainably. The concept of the watershed as an interconnected system emphasises the need for holistic management approaches that consider the upstream-downstream linkages and the cumulative impacts of human activities (UN, 2021). This perspective aligns with local village understandings of land and water

¹⁴ It is worth noting that subsequent archaeological research suggest that agricultural systems were not intensive, and surely not at a scale similar to other systems across Moananui, for example the ahupua'a found in Hawai'i (Carson, 2006; Green, 2002). The works of Jackson, Fonoti, and Tautunu (2018 and 2019) have founded remnants of complex, extensive in-land settlements across Samoa (ie Palauli and Aleipata) which are of the contrary. As stated by Jackmond et. Al "There (settlements) are so extensive that they suggest that in the past there were larger populations, more intensive agriculture, larger-scale organisation of labour and resources than previously supposed to be the case in Samoa." (Jackmond et al, 2018: p226

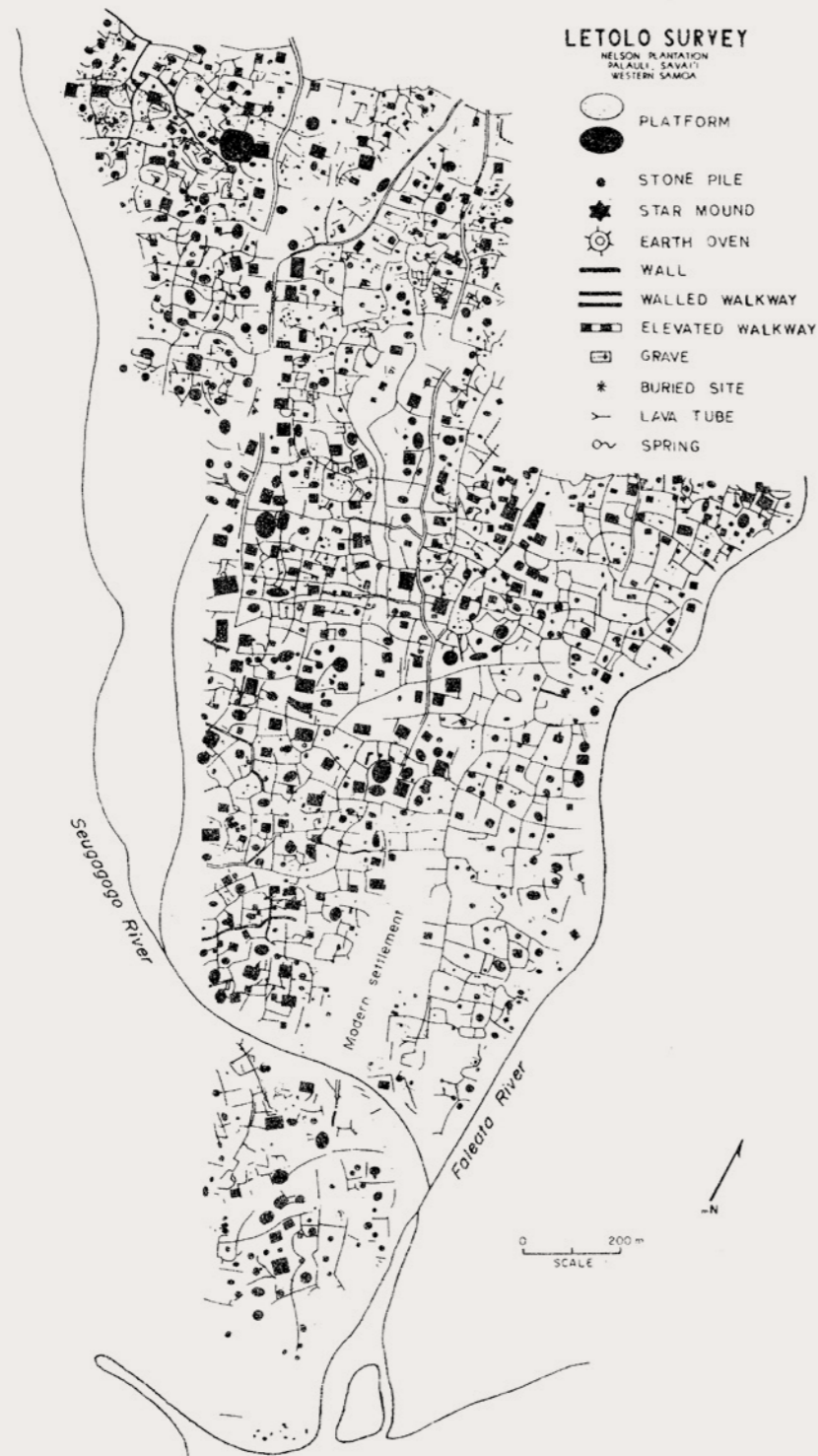


Figure 9

Archaeological survey mapped by Jennings, Holmer, and Jackmond (1977-1978).

stewardship that emphasise the interconnectedness of all elements of the environment and are governed by traditional polity in local fono a matai gatherings (Davidson, 1969).

The ecological systems of Palauli Plantation within the Palauli Watershed illustrate the complex interdependencies between human societies and their natural environments. The area's ecological characteristics, shaped by its topography, hydrology, and vegetation, have not only been supported but also shaped by human activity, reflecting a deep reciprocal relationship between the people of Palauli and their environment. Understanding and preserving this relationship is essential for ensuring the sustainability and resilience of both the ecological and human communities within the Palauli Watershed.

Social Capital

The ecological systems of the Palauli site and its watershed makes for a favorable environment for thriving inhabitation. Existing archaeological surveys highlighted the tangible built environments dating back to 150 BC (Martinsson-Wallin, 2007), conclusions can be drawn that the ecological systems supported the intensification of agricultural systems and human settlement for over 2000 years. There is yet to be definitive evidence to what the function of the Palauli Plantation, in its entirety, with local knowledge and researchers suggesting that it could have been the residence of paramount ruler Lilomaiava Nailevai'ilili, sites for seu lupe (pigeon snaring), significant site for cultural ceremonies, and also used as fortifications during the Tongan occupation of Samoa (dates). In the previous section, explored the site as being nested within a watershed surrounded by waterways and geological features suitable for agricultural cultivation, sustaining growing and migrating populations. But what of the social systems? What social systems existed in Palauli Plantation? How can these social systems deepen our understanding of prehistoric Indigenous Samoan living systems?

The chronological settlement patterns and functions identified at Palauli Plantation, when compared with the archaeological insights from the Aleipata region on Upolu, offer a comprehensive view of settlements of prehistoric land use in Palauli Plantation:

1. (150BC—200AD) Early Settlement and Usage

The initial settlement phase at Palauli Plantation, characterised by earth ovens, pottery, and stone tools, suggests a society engaged in subsistence activities, likely cultivating the land and utilising local resources.

1. (200—700AD) Dormant Phase

The absence of detectable activities during this period could indicate a temporary abandonment or a shift in settlement patterns, possibly due to environmental changes or social transformations.¹⁵

1. (700—1100AD) Re-activation and Expansion

The resurgence of settlement activities, marked by large platform construction, indicating a revival or intensification of land use, possibly driven by population growth or changes in social organisation.

1. (1100—1300AD) Pulemelei Mound Period

The construction of umu tī around the Pulemelei Mound during this era suggests a significant development in social structure and religious or ceremonial practices, possibly reflecting a more complex societal hierarchy and spiritual life.

1. (1400—1600AD) Further Human Activities

Continued significant activities indicate a thriving community, engaging in diverse social, economic, and possibly political endeavours.

1. (1700—1800AD) Decline or Transformation

The abandonment or decreased importance of the Pulemelei site might reflect broader social, environmental, or political changes affecting the region (Tui Atua, 2007; Martinsson-Wallin et. al, 2002-2004, 2007).

¹⁵ Important to note that there were no dated activities in areas surveyed during excavations (Martinsson-Wallin et. al, 2007). So this does not rule out settlement across Palauli Plantation or Palauli Watershed.

Analysis of settlement patterns at Palauli Plantation conducted by Jennings et al. (1982) and further elaborated in subsequent studies (Asaua, 2005; Martinsson-Wallin et. al, 2007; Jackmond et. al, 2018 & 2019.), offers a nuanced understanding of the spatial organisation and societal structure within this region. By identifying five central village “wards”¹⁶ characterised by large platforms and clusters of household units (HHUs), with one such ward encompassing the Pulemelei site, researchers have utilised the concepts of fua’iala (household unit), pitonu’u (village wards), and nu’u (village) to delve deeper into the communal spatial organization at Palauli Plantation (Holmer, 1980; Davidson, 1979:99; Jennings et. al, 1982; Martinsson-Wallin, 2007)¹⁷. This approach provides a framework for analysing the spatial relationship between structures, suggesting a deliberate organisation linked to social functions and hierarchies within the settlement.

The analysis further suggests a dichotomy between coastal/ lowland and inland settlement patterns, where the former is primarily residential and the latter is associated with high-status individuals and ceremonial-religious activities (Martinsson-Wallin, 2007). This spatial division hints at a possible dual leadership system, paralleling other Moananui societies such as Tonga, where ceremonial roles and practical governance were distinct (Martinsson-Wallin, 2007). The distinction between coastal and inland zones might also reflect a division of the landscape into areas associated with commoners and chiefly families, respectively. This interpretation aligns with broader Moananui cultural concepts, where the coastal area represents the 'ao' (the realm of the living and everyday life) and the inland area symbolises 'po' (the realm of the gods and ancestors), suggesting that inland structures may have held significant ceremonial and ritual importance (Sahlins, 1976; Shore, 1989; Kirch, 1996).

Recent attempts by Tui Atua have recovered important links with ancestral ceremonies and rituals associated with the site (Tui Atua, 2004). During major archaeological works carried out in the mid-2000, Tui Atua instigated traditional Samoan clearing and purification rites during the archaeological works, documented in articles (Tui Atua, 2003, 2007) and video

¹⁶ Wards were arbitrarily drawn with a 200m radius around principal structures to define ward catchments.

¹⁷ I build on these spatial concepts in later sections to define spatial organisation systems and further define Samoan living systems.

footage (Le Faleo'o) capturing the spiritual and cultural essence of the sites relational connections with Moananui communities.

As a segue into the next chapter, I turn to an account that Tui Atua reported about the significance of Palauli Plantation not only for Samoa but also the shared heritage across Moananui. In 2003 Tui Atua invited Māori anthropologist Pita Sharples and former Head of the Māori Dept at the University of Canterbury Reverend Morris Gray to visit Pulemelei where they;

[C]limbed the path to the Pulemelei complex and to the top of the large Pulemelei mound, where we seated ourselves on flat slabs of stones. Shortly after, Morris stood up, walked inwards, stopped when he reached the middle, threw his arm out and pointed to the ground: “Down in the bottom in the ground level is buried an ariki” he said. He seemed like someone who was, as we say in Samoan, ua ulu i ai le agaga, meaning ‘possessed’. “I know this place” he continued, “this is where our people came from. My family emblem is the wheke (octopus) and this mound is a legacy of the wheke. And there are in this environment definitive markings which underline the sacred figure of eight”.

Morris’s reference to the wheke and the figure of eight impacted on me because the river that flows through the plantation on which Pulemelei is sited has eight waterfalls. He did not know this at the time. “There are links between this mound and the skies, the sun, the moon and the stars”, he proclaimed. “There is a link between this mound and the pathway”. The astronomy of this, he suggested, was what enabled the Polynesia Diaspora. He then called to the plantation manager, “Where does the sun rise?” The plantation manager responded, “You are facing the direction of the sunrise”. Morris was standing directly in front of the principal pathway to the top of the mound, suggesting that the pathway pointed to the direction of the sunrise. He turned to me and said, “I ask for your leave to address our forbears in chant”. When given, he began to chant. At the bottom of the mound we saw

the Samoan people down there instinctively stand. I pondered on this, on why they stood for a Māori chant. When the chanting was over, he walked towards me and said, “If there’s going to be an archaeological excavation, in all likelihood they will come across human remains. In that case we require a purification ritual”. In searching for why and how we should conduct the purification ritual at Pulemelei I became fascinated by the suggested links between Pulemelei and Tagaloa. Thus began my search for Tagaloa (Tui Atua, 2007).

Moananui Living Systems (The Greater Whole)

Ahupua’a, Hawai’i

Ahupua'a is a customary Hawaiian land division system that exemplifies Indigenous Hawaiian resource management and socio-environmental organisation (Blane, 2000). The name ahupua'a is derived from two words: “ahu,” meaning a heap or cairn of stones, and “pua'a,” meaning pig. Ahu are markers signifying the boundaries of each division, and the pig symbolises the resources or taxes that were offered to the ali'i (chiefs) from these lands. This system was integral to Hawaiian society, providing a sustainable and self-sufficient framework for managing land and resources.

Within each ahupua'a is a division of various ecological zones, stretching from the mountains to the sea (Williams, 1997; Lincoln, Vaughan, Kurashima, 2022). This vertical integration allowed for the efficient use of diverse environmental resources across different ecosystems. Each ahupua'a included sections of the upland forests, the midland agricultural plots, and the lowland fishing grounds, ensuring that communities had access to all necessary resources for sustenance, including wood, fresh water, agricultural land, and fishing waters. Water, plays a pivotal role in the ahupua'a system, serving as the lifeblood that connects the land to its people. The management and distribution of water were meticulously regulated through a series of ditches and channels, which irrigated the lo'i kalo (taro fields) and other agricultural endeavors. This interconnection of water and land highlights the Hawaiian understanding of the environment's interdependence, where the health of aquatic ecosystems directly impacts the productivity of terrestrial resources (Minerbi, 1999; Blane, 2000).

The kapu system, a set of strict societal laws, was integral to the sustenance and maintenance of the ahupua'a. Kapu (sacredness) and kānāwai (protocols enforced to implement kapu) enabled ali'i¹⁸ the use of resources, ensuring their conservation and sustainability (Lincoln, Vaughan, Kurashima, 2022). Kapu included restrictions on fishing and harvesting during certain periods to allow for regeneration, underscoring the deep environmental knowledge and foresight of the Hawaiian people. The system facilitated a balanced relationship between humans and nature, ensuring that resources were not overexploited, and that the natural world was respected and preserved for future generations. As described by Luciano Minerbi, Indigenous Hawaiian conservation and management values are based on the search for balance and harmony with nature, and taking care of the land (Minerbi, 1999). Hawai'i government planner David Blane builds upon this understanding, stating that Hawaiian values guide how they interact with another and the environment, further demonstrating their spiritual connection between Kanaka Māoli and the land (Blane, 2000). Blane writes:

Hawaiians believe that without an understanding and acceptance of these eight principles, it would be difficult to achieve the unity of spirit required to practice the ahupua'a concept. The Hawaiians weave a cord called 'aha, that requires braiding eight strands of sennit. Alone, each strand is weak . . . but together they form a sturdy and strong rope. Each strand of this rope represents one of the eight principles above and were mutually applied throughout everyday Hawaiian life.

The values and principles described by Minerbi (1999) and Blane (2000) are outlined in the Table 1 and 2. The ahupua'a values and principles are woven into the nested system. Smaller than a kalana and moku, but larger than an 'ili, (Beamer, 2005; Blane, 2000) the ahupua'a was characterized by various ecological zones or "wao," each with its unique characteristics and resources:

18 Different ali'i managed certain parts of the wider Hawaiian settlement system. The ali'i nui (high chief) ruled the mokopuni, ali'i 'ai moku (lower chief) ruled the moku, and ali'i 'ai ahupua'a and konohiki were appointed to govern and manage the ahupua'a.

1. Wao Akua (Realm of the Gods)

This zone encompasses the highest forested areas, considered sacred and often restricted. It was believed to be the dwelling place of the gods and was crucial for watershed functions.

2. Wao Kele (Wet Forest Zone)

Rich in biodiversity, this zone provided important resources such as bird feathers for ceremonial purposes and dense vegetation for wood and medicinal plants.

3. Wao Nahele (Forest Zone)

This area was a source of timber for construction and tools, as well as other forest products.

4. Wao Wa Lau (Freshwater Zone):

Essential for the irrigation of crops, this zone supported the cultivation of taro and other staple foods.

5. Wao Kanaka (Realm of Humans)

The areas where people lived and farmed, including the villages, agricultural plots, and fishponds.

6. Wao Kai (Sea Zone)

The coastal areas and reefs provided fish and other marine resources, integral to the Hawaiian diet and culture. (Millison, 2023)

Principle	Description
Kai Moana	Preserve all life in the ocean extending from the shoreline to the horizon.
Makai	Respect for the land and resources Kapu and Noa Sacred and profane extending from the shoreline to the sands reach.
Mauka	Respect for all land and resources from the sand's edge to the highest mountain peak.
Kamolewai	Respect for all water resources including rivers, streams, and springs and the life within.
Kanakahonua	Preserve and respect the laws of the land and each other to insure the community's health, safety, and welfare.
Kalewalani	Respect for the elements that float in the sky including the sun, moon, clouds, stars, wind, and rain which guide the planting and fishing seasons, provide water, and that create the tides and directions for ocean navigation.
Kapahelolona	Preservation of the knowledge of practitioners.
Ke'ihl	Preservation and respect for the sacred elements including deities, ancestors, the forces of nature, and ceremonial activities.

Table 1

Values and concepts of an ahupua'a as described by John Ka'imikaua (2000) and David Blane (2020).



Figure 10

Visualisation of an Ahupua'a. (Bea Clare Alveza Aglibot).

Principle	Description
Mana'o'i'o	Faith, respect for nature
Kapu and Noa	Sacred and profane
'Ike	Knowledge
'āina	That which feeds
Lōkahi	Unity, balance, harmony
Mālama 'aina	Caring for the land.

Table 2

Values and concepts of an ahupua'a as described by Luciano Minerbi (1999).

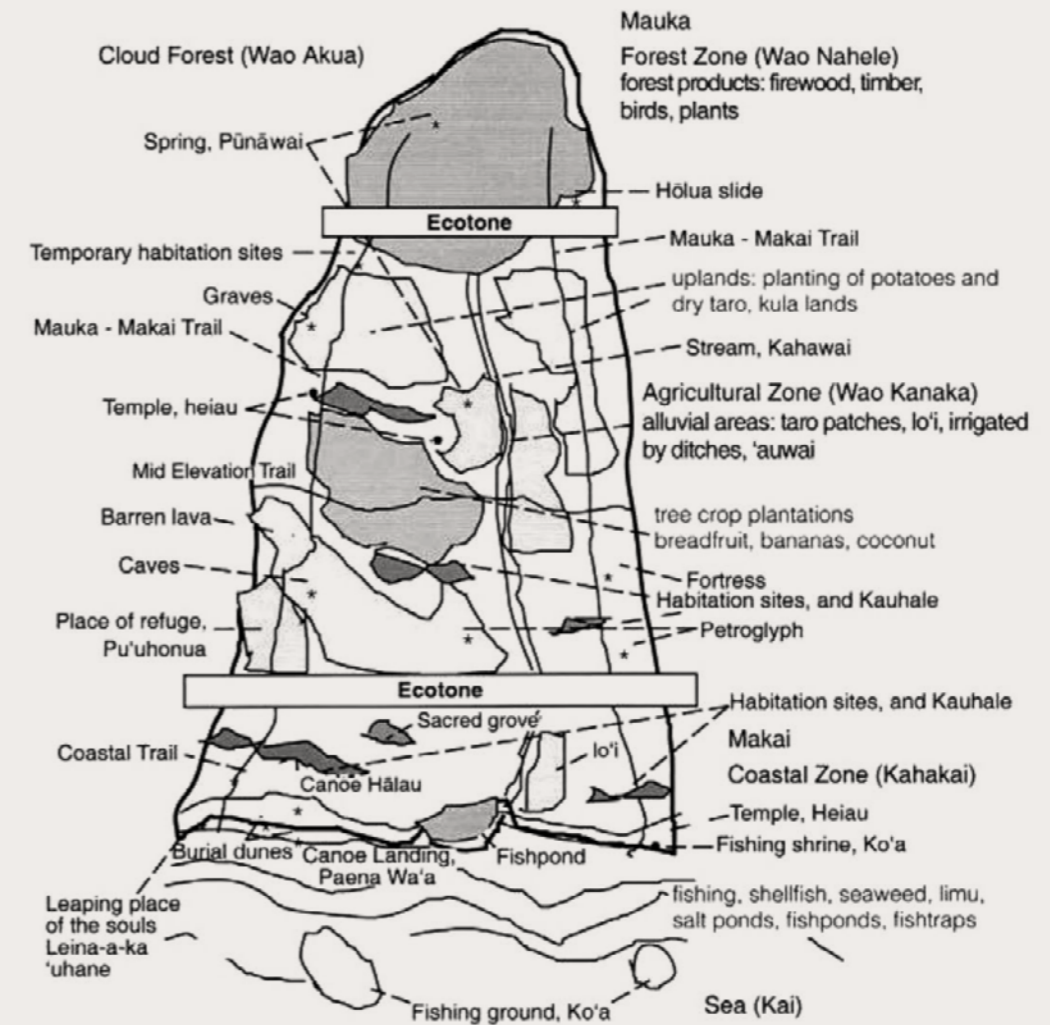


Figure 11

Ecological and human services within a watershed ahupua'a system (Minerbi, 1999).

The ahupua'a system represents a sophisticated form of environmental stewardship, where the natural and spiritual realms are interwoven into the fabric of daily life. It reflects a deep understanding of ecological principles and sustainable practices, emphasizing the need for balance and respect in human-environment interactions. The legacy of the ahupua'a system offers valuable insights into Indigenous Moananui sustainable living and resource management, and how principles are relevant in today's global context of built and natural environmental challenges. As surmised by Blane (2000):

Ahupua'a in practice is really about (1) instilling appropriate values that allow people to make the right choices for not only themselves but for society; (2) community-based efforts that involve ahupua'a tenants or people with localized knowledge in the decision making process and who have a personal stake in their ahupua'a; (3) creation of partnerships and the involvement of stakeholders that united can begin to examine existing western governmental and legal structures in order to weave the ahupua'a principles throughout; and (4) perpetuating this practice from generation to generation.

Va'a Mataeina'a, Tahiti

In the traditional Mā'ohi Nui¹⁹ society of Tahiti, the concept of "va'a mataeina'a" represents a sophisticated system of land and resource management, deeply intertwined with the social, cultural, and spiritual fabric of the community (Tetiarahi, , 1987). The term "mataeina'a" refers to districts (Finney, 1966) or divisions and/ or settlements within Tahitian society that extend from the interior of the island to the coast, encapsulating a diverse range of ecosystems from mountainous regions down to the sea (Newbury, 1980; Tetiarahi, 1987);.²⁰ In other cases, "mata'eina'a" refers to household clusters (Wilson, 1799; Fraser, 1994).

¹⁹ Mā'ohi Nui is the indigenous term for the French Polynesia archipelago (Wheeler, 2018, 2021)

²⁰ Newbury, 1980; Tetiarahi, 1987; in her thesis, Wheeler refers to the settlements as "mata'eina'a iti" (Wheeler, 2018)

The "va'a" in "va'a mataeina'a" metaphorically suggests a vessel or canoe (Newbury, 1980), or literally 'the crew of a canoe' (Henry, 1928). Va'a mataeina'a, in alternative records, refers to entire districts, whereas a mata'eina'a (iti) refers to a sub-division or sub-district (Finney, 1966). Both definitions indicate the encompassing nature of the nested-system as an integrated community-based system²¹ for managing land and sea, housing both the resources and the people within its boundaries. This holistic approach reflects a profound understanding of the interconnectedness of all life, where land tenure is not merely about the right to use land but encompasses a stewardship ethic that binds the community to their environment. The mention of mataeina'a in historical accounts, such as those by missionaries and explorers like Captain Wilson of the Duff (1797), highlights the significance of these divisions in understanding the social and territorial organization of Tahitian society. In the Marquesas Islands, for example, the term mataeina'a is associated with specific valleys and their populations, emphasizing the role of geography in defining social units and the relationship between chiefs and their followers. This geographic and social stratification, with chiefs typically residing near the shore (oire) and the populace in the upland mataeina'a, reflects a clear demarcation of social hierarchy and land use.

Each va'a mataeina'a, in ancient Tahitian society, was a self-sufficient entity with its social organization intricately linked to its marae. These sacred sites were the heart of the mataeina'a, serving not only as religious centers but also as hubs for social and political life. The organization of society around these marae underscores the profound spiritual connection between the land, its resources, and the people, with the marae facilitating a harmonious balance between these elements. As observed by Finney:

A simplified model of Tahitian typography illustrates the nature of resource distribution. Each volcanic cone can be divided, like a pie, into wedge-shaped slices, each containing a major valley system, including alluvial flats, lagoon, reef, and seashore extending from the valley. The major resource zones of the island are therefore found in each slice: (1) the upper reaches of the valley have well-drained slopes where

²¹ Mollo, Monetary income, public funds, and subsistence consumption: the three components of the food supply in French Polynesia – a comparative study of Tahiti and Rapa Iti islands, 2018.

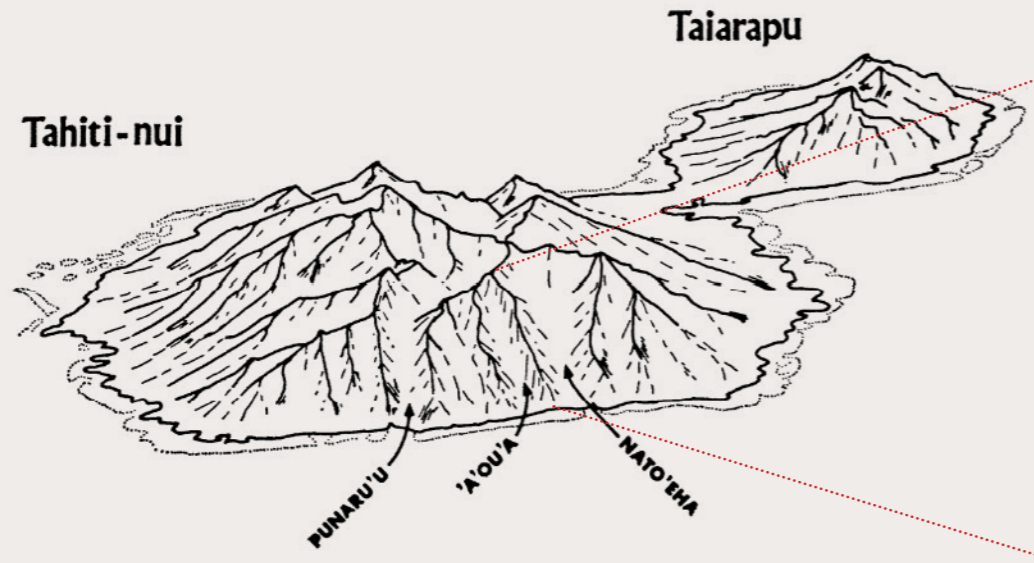


Figure 12

Illustration of Tahiti islands; Tahiti-nui and Tairapu (Finney, 1966).

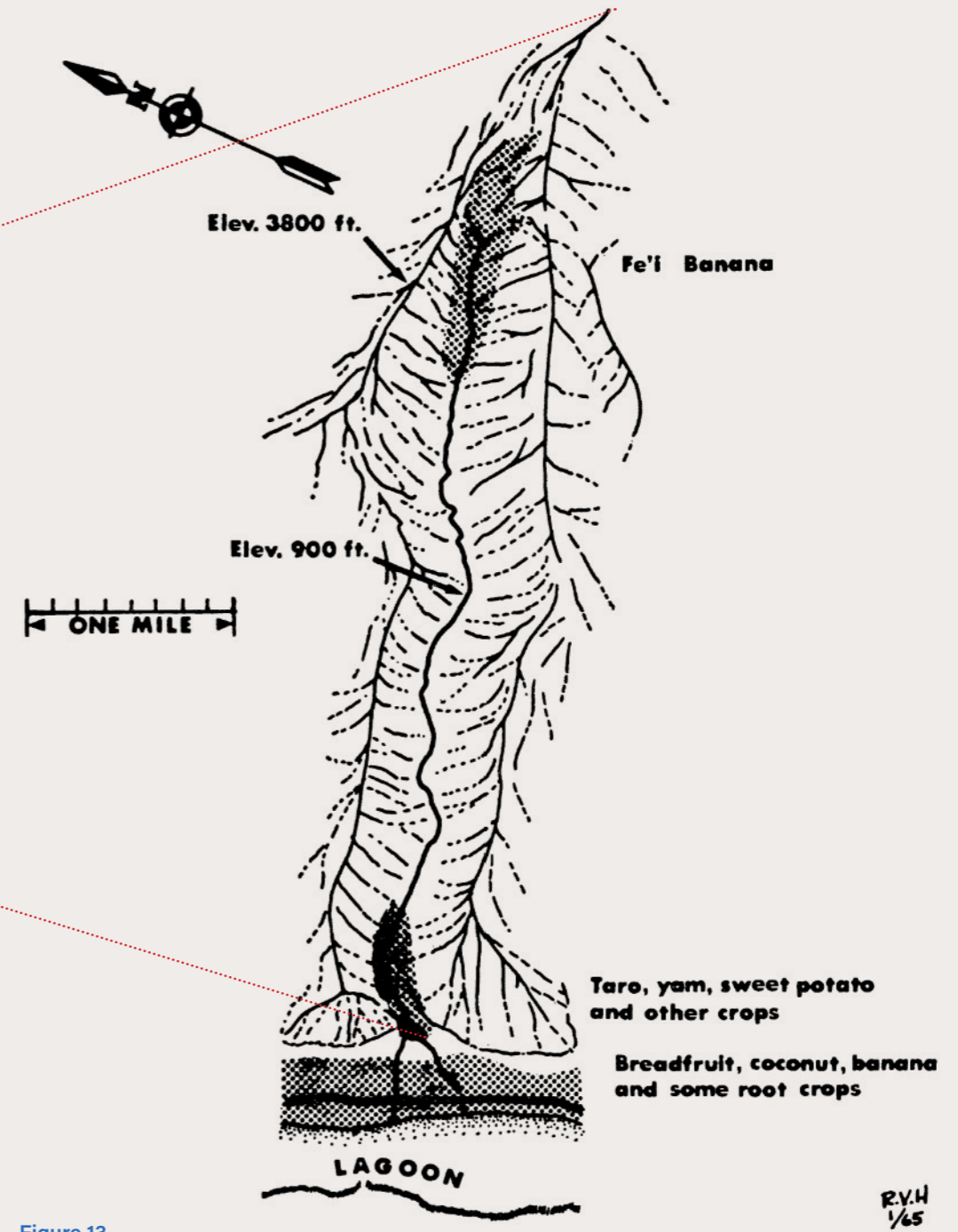


Figure 13

Illustration of a va'a mata'eina'a, 'A'ou'a (Finney, 1966).

the staple fei banana thrives; (2) the lower reaches of the valley have flatter land where other staples (taro, yam, sweet potato, and lowland banana) are cultivated; (3) the alluvial flats provide sufficient open space for the main tree crops?breadfruit and coconut?as well for some of the crops grown in the lower valley; (4) the off shore reef and the waters of the lagoon and sea provide ain protein foods - fish, shell-fish, and crustacea of many varieties (Finney, 1966).

Va'a mataeina'a system in Tahiti is indicative of a broader Polynesian tradition of land and resource management, akin to systems like the ahupua'a in Hawai'i, and mata'eina'a in Marquesas. In the Marquesas Islands, the term mata'eina'a is commonly used to denote specific valley communities or districts, each associated with a key figure or location. Examples include naming a community, such as Naiki, after the valley it occupies, like Hakahau. These social units are described as entities that consecrate their leaders or deities. It is believed that leaders resided closer to the coastline, whereas their communities were situated in higher, inland areas. This spatial organization is captured through the terminology used, distinguishing the coastal living spaces of chiefs, referred to as oire, from the upland living areas of the general populace, known as mata'eina'a (Kirkpatrick, 1981). Despite the similarities, va'a and mata'eina'a are uniquely adapted to the environmental and cultural realities of Tahiti, organizing land into sectors that ensure the sustainable use of agricultural, residential, and fishing zones. This nested system, which includes both the va'a mata'eina'a (larger divisions similar to tribes or clans) and the mata'eina'a (smaller units within the va'a mataeina'a), facilitates a decentralised yet cohesive approach to managing the island's resources. It highlights the importance of traditional knowledge in maintaining the balance between human needs and environmental preservation.

Tapere, Rarotonga

The tapere is a traditional land division system unique to the Cook Islands, embodying a deeply rooted structure of land tenure and socio-environmental organisation. The concept of tapere integrates a comprehensive understanding of community, land use, and stewardship, reflecting the Indigenous Rarotongan approach to managing their environment and resources. The term "tapere" itself denotes a segment or section of

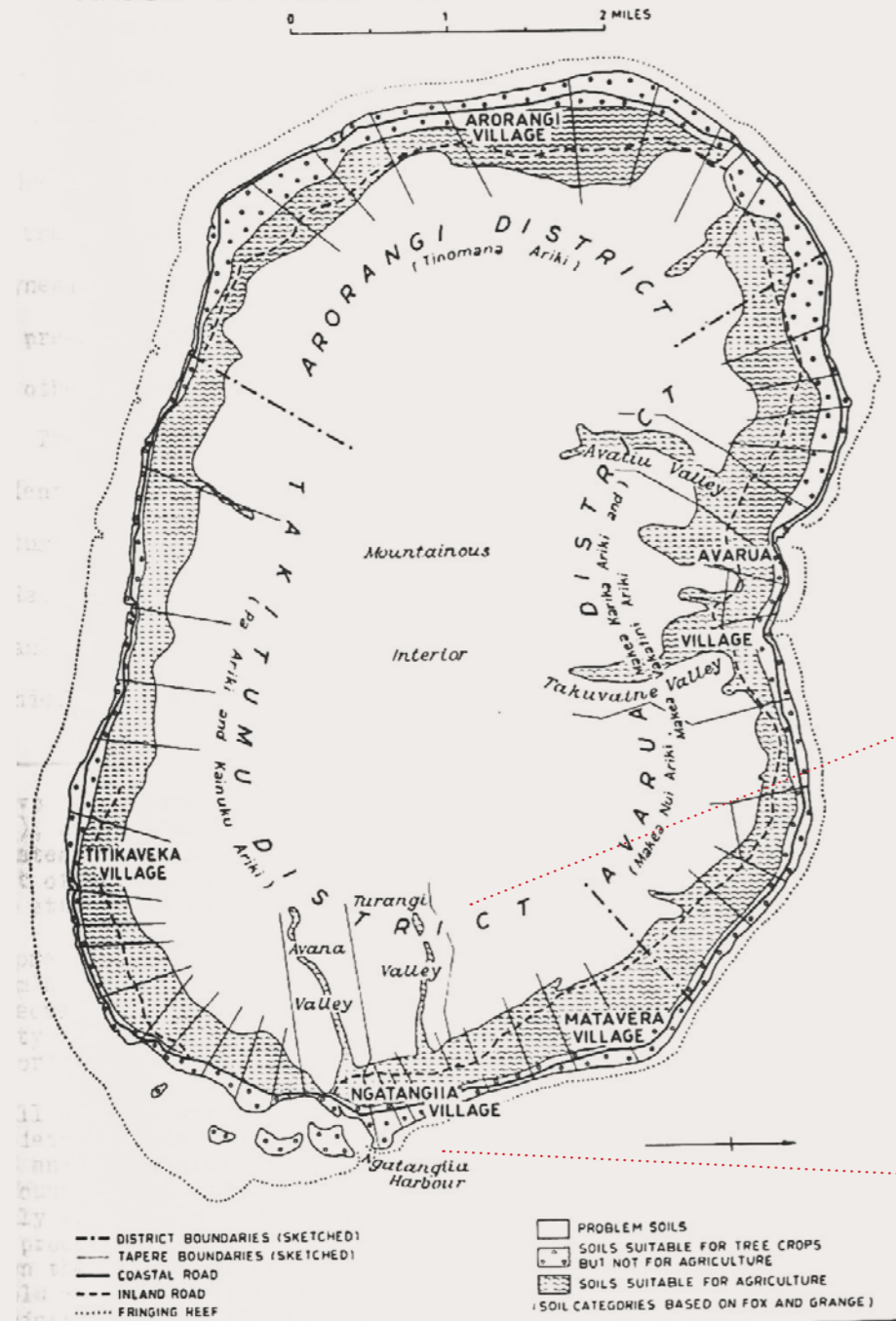
land within the larger context of a tribal area, governed by a mataiapo (minor lineage chief) (Crocombe, 1963). Each tapere comprises not only the agricultural and living spaces but also encompasses the adjacent marine areas, emphasizing the interconnectedness of land and sea in sustaining the community's livelihood. This system illustrates a holistic approach to resource management, ensuring that communities have access to diverse environments, from inland forests to coastal reefs, thereby enabling a self-sufficient lifestyle integrated with their surroundings (Bellwood, 1971; Smith, Anita, 2007).

Campbell highlights:

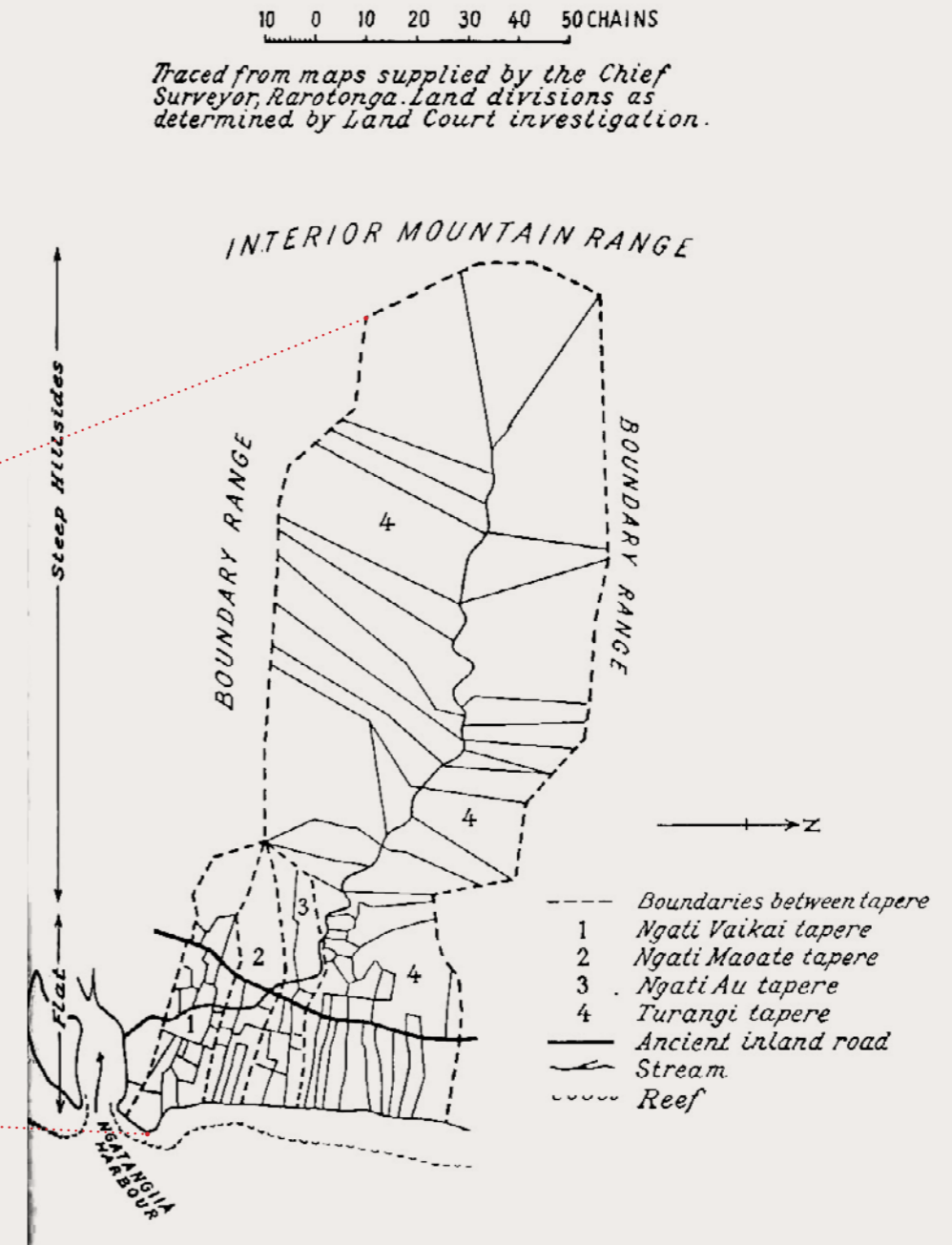
The tapere system of landholding develops out of this concentric resource pattern. Tapere are radial land units, centred on the inland valleys, each containing mountain, coastal plain, lagoon and reef resources. But the tapere system is as much culturally constructed as it is environmentally conditioned. The tapere was the home of the matakeinanga, the corporate landholding community group. At the core of the matakeinanga was the ngāti, or local descent group, the central political unit. The (usually) senior (usually) male member of the ngāti, the man genealogically closest to the founding ancestor, was the mata'ipapo, the chief (Campbell, Michael, 2006).

Land tenure in Rarotonga, and by extension within the tapere system, is characterized by a complex layering of rights and responsibilities. Land is not owned in the conventional contemporary notion of land ownership but is held in trust by families and governed by chiefs, reflecting a communal approach to land use and stewardship (Crocombe, 1964; Pascht, 2011, 2014). This communal ownership underscores the collective responsibility towards the land, ensuring its sustainable use and the equitable distribution of its resources among the community members. The tapere system is part of a broader organisational structure that includes the following:

RAROTONGA
MAJOR CULTURAL AND PHYSICAL FEATURES



TURANGI & ADJACENT TAPERE
RAROTONGA



An indigenous framework for regenerating Moananui living systems

School of Art and Design

Figure 14

Illustration of Rarotonga island; divisions of Vaka (tribe) and tapere (tribe land divisions) (Croccombe, 1964).

Figure 15

Illustration of Turangi tapere and adjacent tapere (Croccombe, 1964).

1. Vaka

Refers to the traditional Polynesian canoe but, in this context, denotes larger tribal divisions on the island, or generally referred to as “districts” (Crocombe, 1963). The districts were governed by the ariki (high chief) and occupied by the wider vaka (tribe). Rarotonga is divided into three vaka, each composed of multiple tapere.

2. Tapere

Denotes a segment or section of land within the larger context of a vaka (tribal area), governed by a mataiapo chief of major lineage) and occupied by the matakeinanga (local landholding group).

3. Marae

A place that served as a ritual site and house of the gods. Complex marae systems were heavily integrated into the tapere, usually built from stone and had a variety of cultural and spiritual functions.

This nested system of vaka, tapere and marae facilitates a decentralised but cohesive local approach to governance and resource management. It allows for localised control within each tapere, while still integrating these segments into the broader socio-political structure of the island. Under the guidance of its chief, tapere resources are managed according to localised needs and conditions, fostering a sense of autonomy and responsibility. At the same time, the overarching structure of the vaka provides a framework for cooperation and coordination among different tapere, ensuring that broader community interests and island-wide issues are addressed collectively (Crocombe, 1963).

The tapere system, with its emphasis on communal stewardship, localised governance, and the integration of land and marine resources, reflects the Rarotongan people's deep understanding of their environment. It embodies principles of sustainability, resilience, and communal welfare, which are crucial for the preservation of their cultural heritage and the sustainable development of their island. This Indigenous model of land tenure and environmental stewardship offers valuable insights into alternative forms of community organization and resource management, emphasizing the importance of maintaining a balanced sustainable relationship with the environment.

Pā and Kāinga, Aotearoa

In the Māori context, the concepts of "pā," "kāinga," and "papakāinga" are integral to understanding traditional Māori settlement patterns, social structures, and the profound connection between Māori communities and their environment. These terms not only denote physical spaces but also embody the cultural, social, and spiritual dimensions of Māori life, reflecting a deep-rooted philosophy of communal living and environmental stewardship.

Pā refers to fortified settlements strategically designed for defense, literally meaning a ‘fortified place’ or ‘enclosure’ (Best, 1927). Derived from the verb "pa," meaning "to obstruct" or "block up," (Best, 1927, 1941) a pā served as a bastion against potential incursions, symbolising the ingenuity of Māori architectural and strategic planning. These fortified villages were often situated in locations that offered natural advantages for defense, such as hilltops or ridges, and were constructed with defensive works like palisades and trenches (Best, 1927, 1941). The pā was not only a military fortification but also a centre of communal life, where social, political, and religious activities occurred. Archaeologists have argued that pā were a visible markers of communal status, mana, and wealth (Leach, 2003; Anderson, 2009; Smith, 2017). Furthermore, Tupaia, a tōhunga from Tahiti who accompanied James Cook on his expeditions, identified Pā as places of worship rather than solely a defensive function (Beaglehole, 1968).

Kāinga, or papakāinga,²² on the other hand, refers to unfortified villages or settlements that functioned as the primary living spaces for the community. Kāinga were often located near pā and served as the habitual residence for the community, with the pā providing a refuge during times of conflict (Best, 1927, 1941). The term kāinga connotes a "place of residence" or "home," emphasising the everyday aspects of communal living, including dwelling, farming, and social interaction (Best, 1941). As described by Lee-Morgan et al (2018):

22 Kāinga and Papakāinga are used interchangeably throughout archival documentation – both meaning “Māori communal living on ancestral land” (Kake, 2017, 2019; Lee-Morgan et al, 2018; Pihama, 2022). For the purposes of this study, I use kāinga in resonance with vernacular settlements and understanding.

A kāinga would consist of multiple clusters of whare of varying sizes, normally oriented to an elongated marae ātea with the chief's house as the primary focus. In this arrangement all activities within this kāinga, including the care of Tamariki, gardening, fishing and wild food harvesting, along with the construction of both whānau and collective whare, was a communal endeavour (Lee-Morgan, Hoskins, Te Nana, Rua and Know, 2018).

Kāinga represents communal settlements on ancestral lands, fostering collective well-being among its inhabitants. These settlements are deeply tied to Māori concepts of whānau (family), hapū (sub-tribe), and iwi (tribe), reinforcing the connection between people and their ancestral lands, waters, and other natural features. Papakāinga are not just physical locales but are imbued with cultural and spiritual significance, serving as living embodiments of whakapapa (genealogy) and tikanga (customs and traditions). This concept underscores the importance of collective well-being, achieved through living in

close connection with one's environment and community, guided by principles of mutual support and respect. In the broader context of Māori social structures, pā and kāinga are fundamental to understanding how Māori communities have historically organised themselves and interacted with their environment. These settlements were not isolated; they were part of a nested system of social organisation where interdependency and communal well-being were paramount (Kake, 2017, 2019). Tikanga within these communities facilitated conflict resolution and maintained social harmony, allowing for effective communal living and resource management (Mead, 2003; Pihama, 2022). Pihama (2022) emphasised that kāinga (papakāinga) re-embed tikanga practices that support wider aspirations for Māori wellbeing (Pihama, 2022). Such practices include the regeneration of tikanga concepts and values that are central to kāinga. Tikanga concepts and values are presented in Table 3.

The adaptation of Māori to their environment, particularly in the Tāmaki Makaurau Auckland region, showcases the ingenuity and a deep understanding of the land. The use of volcanic cones for settlements and the development of lava-field gardens are a testament to an ability to adapt and thrive in a varied geographic environment (Mackintosh, Shifting Grounds, 2021). Archaeological insights, such as those from Ian Lawlor's studies at Te Ihu o Mataoho (Ihumaatao), highlight the sophisticated nature of early Māori settlements and agricultural practices:

The subdivision of stonefields erecting radial walls with wooden fences and cone occupation using earthworks (terraces and pits) and stoneworks (wall, retaining walls, rows, alignments, platforms and mounds), augmented with wooden palisade fences), from the middle 14th century to the 18th century (traditions, history and archaeology); systematic and extensive stonefield occupation and gardening use from the middle 14th and 15th centuries with the coast-to-cone settlement and gardening complex most intensively used (traditions, history and archaeology). (Lawlor, 2009)

The strategic use of volcanic cones for fortification and the terracing for agriculture indicate a deep-seated knowledge of environmental management and defensive architecture²³, with pā and kāinga settlement patterns evident across many volcanic cones in Tāmaki Makaurau (Sullivan, 1985). These practices transferred from their homelands in Moananui have direct relationships to land settlement systems such as ahupua'a (Hawai'i) and tapere (Rarotonga) that evolved over centuries, reflecting the development of a long relationship that Moananui people had with the land. They highlight the interdependence of Māori communities with their environment, underpinned by a deep cultural and spiritual connection to the land, which continues to influence Māori social structures and practices to this day.

23 Sullivan argues that pā were not developed fully into defensive forts until later in the 15th and 16th century due to intensification of population, and subsequently inter iwi conflicts in Tāmaki Makaurau.

Principle	Description
Whanaungatanga	Communal value, collective participation and membership
Kotahitanga	Unity and collaboration
Wairuatanga	innate spiritual nature of a person and their extended relationships to natural, physical, and supernatural characteristics of their environment
Wairuatanga	Health and well-being; the term orangatanga originates from the root word ora, meaning life, well, and health
Manaakitanga	Hospitality and kindness extended toward neighbours and all visitors
Kaitiakitanga	sustainable use of natural resources and the inter-connection between the natural environment and people is a key tenet of kaitiakitanga
Rangatiratanga	Māori as the native and Indigenous people of the land of Aotearoa New Zealand
Mātauranga	History, genealogy, mythology, and cultural traditions shaping Māori attitudes, beliefs, values and behaviours towards the management of the environment

Table 3

Māori principles that underpin papakāinga in Aotearoa (Rolleston and Awatere, 2009)



Figure 16

Paintings of pā and kāinga at Te Pane o Mataoho, Māngere, Tāmaki Makaurau (Auckland) (Gaskins, 1995).

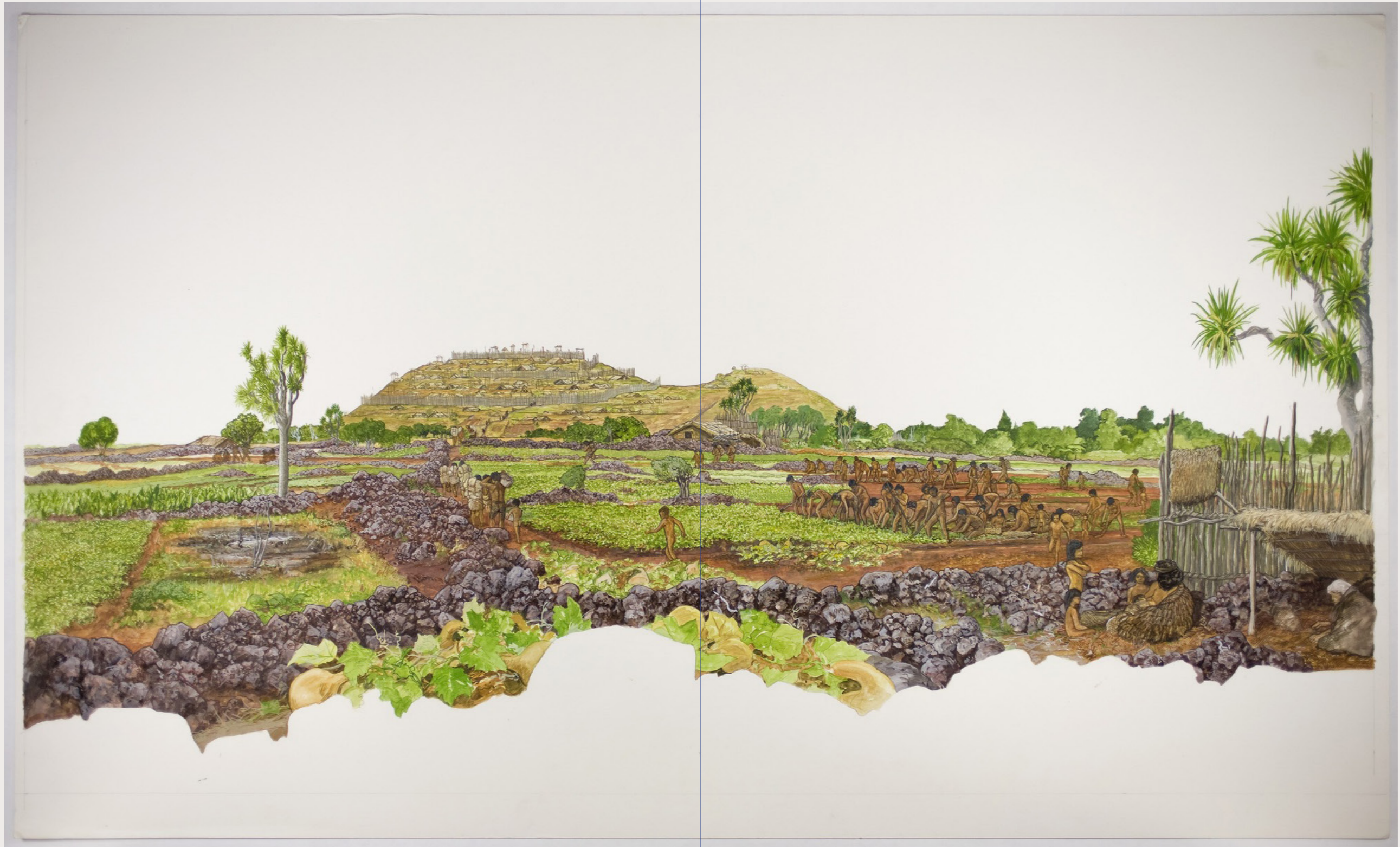


Figure 17

Paintings of pā and kāinga at Te Pane o Mataoho, Māngere, Tāmaki Makaurau (Auckland) (Gaskins, 1995).

Summary of Comparative Analysis

The comparative analysis of Moananui living systems, specifically focusing on the ahupua'a, tapere, mata'eina'a, and kāinga, reveals the development of a sophisticated understanding and implementation of nested systems within Moananui societies. These systems, characterised as relational holarchies, demonstrate an intricate interplay between spatial, ecological, social, and value-based structures, facilitating sustainable living and resource management across diverse Moananui environments. This analysis of existing living systems in Moananui will help us understand Palauli Plantations prehistoric regenerative systems that enabled communities in this part of Moananui to thrive for over 2000 years. As a source of traditional Samoan knowledge in understanding the cultural logic that underpinned prehistoric Samoa, I turned to Tui Atua Tupua Tamasese who has written on the settlement of Samoa and the development of its cultural systems:

Current readings of the Lapita evidence point to settlement of Fiji, Tonga and Samoa c. 3000 years ago. Similarly, settlements in the Marquesas are scientifically dated 300-600AD; Hawaii as 650-850AD; and New Zealand (Aotearoa) as 1000-1200AD. Clearly the origin of the Polynesian diaspora would have to be placed in Fiji, Tonga or Samoa and nomenclature suggests that Savai'i is the mythological Hawai'i, Havai'i or Hawaiki. I believe that the findings from Pulemelei will provide useful information that will help address many questions about the connections between traditional mythology and contemporary society. Already the carbon-dating has opened avenues to new insights and perspectives. It also opens visions of soo (connection or connecting) between the Hawaii to Tahiti to Rapanui. All, I hope, can gather one day at a connection festival at Pulemelei to celebrate common heritage (Tui Atua, 2007).

In an attempt to su'i (sew/weave) the patterns across Moananui and build upon the understanding of settlement systems on Palauli Plantation, I have highlighted 4 themes, or patterns, evident in Moananui living systems. These are:

Nested Systems: Moananui living systems exemplify nested systems, where smaller units are embedded within larger ones (such as the holarchy relationship between 'ili, ahupua'a, moku, and mokupuni), forming a series of interconnected holarchies. Each level within these nested systems is integral to the whole, contributing to the overall functionality and resilience of the community. This hierarchical structuring ensures that each unit, while distinct, is interdependent, reflecting a holistic approach to community organisation and environmental stewardship.

Ecologically Integrated: These living systems are strategically situated within ecologically rich locations, spanning from watersheds to flat volcanic landscapes or coral reef systems. These environments encapsulated a range of ecological zones, each providing specific resources and infrastructure essential for the community's sustainability. The spatial arrangement of these zones allows for the optimal use of environmental assets, ensuring that communities can access diverse resources, from terrestrial to marine, within their designated areas.

Socio-Environmental Systems: The governance and management of these nested holarchies are inherently socio-environmental, with social groups living in harmony with their surroundings. These systems are managed by social units that understand the intrinsic value of their environment, utilising traditional knowledge and practices to maintain the balance between resource extraction and conservation. This symbiotic relationship between people and place (as demonstrated in the ariki system that constitutes land management in Rarotonga) ensures the continuity and resilience of both the community and the natural systems they rely upon.

Values-based Systems: Core to the effectiveness of these living systems is the adherence to specific values, protocols, and processes. These value-based systems (such as tikanga and kawa within a kāinga setting in Aotearoa) underpin the governance and management strategies employed within each holarchy, ensuring that resource use is equitable, sustainable, and respectful of the environment. Such values are often codified in traditional laws and customs, which dictate the interaction with the environment, the allocation of resources, and the resolution of disputes, thereby fostering a communal ethos of responsibility and stewardship.

The comparative analysis underscores the sophistication of Moananui living systems, which are deeply rooted in an understanding of ecological and social interdependencies. These systems showcase the Indigenous Moananui communities' adeptness at creating resilient and regenerative living environments guided by deeply held values and an intrinsic connection to their natural surroundings.

In the following section, the study uses these patterns to “see” Palauli Plantation in a new light and offers suggestions for Indigenous Samoan living systems that existed and thrived precontact. This analysis will lay the foundation for the practice-led component of Maumoana.

Fua'iala, Samoa

Fua'iala is a multifaceted but deeply rooted notion that extends beyond a mere synonym for "nu'u" or village. Fua'iala translates to "unfolding pathways," with "fua" meaning to measure or unfold and "ala" referring to pathways or the act of arising (Pratt, 1893). This translation reveals the inherent dynamism and vitality in the Samoan perception of space and community. Historically, fua'iala referred to one division of a village and carried a more dynamic connotation, emphasising connections and pathways (Pratt, 1893). Fua'iala embodies a concept of space as a continuum, an evolving and persistent movement along pathways, signifying the process of creation and becoming (Refiti, 2015).

The fua'iala, as described in historical accounts, refers to a subdivision of a Samoan village, often interpreted as a single village segment or a section of a larger village community. Notably, scholars such as Krämer have interpreted fua'iala to mean either the village itself or a significant section of it (Krämer, 1994). This interpretation was further expanded by Freeman's account of the large village Saleupolu, which was composed of approximately one hundred fua'iala segments before European contact (Freeman, 1944). This historical perspective underlines the concept of the fua'iala as a unit for gauging the size of a settlement, primarily based on the number of families residing within it. Moreover, the term fua'iala uniquely incorporates the notion of pathways (ala), highlighting the interconnectedness of different segments within a village and between various villages. The pathways, both literal and metaphorical, crisscross the land, fostering community ties

and facilitating movement and communication (Refiti, 2015). The existence of numerous stone pathways intersecting archaeological sites, such as those surrounding the Pulemelei mound on Savai'i, as noted by Wallin and Martinson-Wallin, underscores the physical manifestation of these connections (Wallin & Martinsson-Wallin, 2007).

In contrast, the modern usage of nu'u, which indicates a more static and fixed location, marks a shift in the understanding of Samoan dwelling spaces. Nu'u, derived from "na u'u" (meaning to hold or grasp firmly), emphasises a sense of possession and identity with a place. This shift from the fluidity and vitality of fua'iala to the more fixed and identity-bound nu'u reflects a broader change in the cultural understanding of space and community. Fua'iala, represents more than a mere segment of a village. It is indicative of an Indigenous regenerative living system, where space and community are not static but continuously evolving and interconnected. Refiti describes fua'iala as an “unfolding of space of space in a movement that continues and persists along a pathway in the sense that cause and becoming are aspects of creation that are produced as we move along the way (Refiti, 2015).” Fua'iala, is integral to understanding Samoan spatial organisation and community dynamics. It offers valuable insights into the Indigenous worldview, where the land is not merely a resource to be exploited, but a living entity that sustains and is sustained by the community. In this sense, fua'iala represents a dynamic, living system that continually adapts and evolves, reflecting the deep-seated Indigenous values of balance, reciprocity, and respect for the environment. As a nested system, the fua'iala encompasses multiple layers of social organisation, each integral to understanding the broader context of Samoan community life. This structure can be comprehensively understood by examining its constituent elements: the 'a'ai (family residence), the pitonu'u (cluster of 'a'ai), and the fua'iala itself (collection of 'a'ai and pitonu'u).

1. 'A'ai (Family residence; residential core)

The 'a'ai represents the most fundamental unit within the Samoan social structure, the residential core and village centre (Refiti, 2015).²⁴ It is essentially the family residence, a physical spaces such as individual house platforms, cooking areas and separated/ connected by other 'a'ai with walls, walkways with possible gardens (Martinsson-Wallin, 2007; p21), demarcated where the nuclear or extended family lives. This unit is central to the Samoan way of life, where family values, traditions, and communal responsibilities are nurtured and perpetuated. The 'a'ai is not just a physical space but a symbol of familial identity, heritage, and continuity. It serves as the primary setting for the socialization of individuals, instilling in them the values and customs inherent to Samoan village culture.²⁵

2. Pitonu'u (Cluster of 'a'ai or familial residential units)

Expanding from the 'a'ai is the pitonu'u, which is essentially a cluster of these family residences. The pitonu'u represents a larger familial network, often encompassing extended families or closely linked kinship groups (Jennings, Holmer and Jackmond, 1982; p92) (Martinsson-Wallin, 2007; p21). Large platforms are a core characteristic of pitonu'u, indicating a community core, or residence of an ali'i (high chief) (Martinsson-Wallin, 2007; p21). Another account of physical context characterized pitonu'u as including large platforms, earth ovens, primary walkways that connected household units ('a'ai), with some pitonu'u having up to 50-75 'a'ai. This level of organisation strengthens familial bonds and facilitates communal activities. The pitonu'u is significant in fostering a sense of community and collective responsibility among its members. It serves as a platform for cooperative endeavors in agriculture, fishing, and other communal tasks, reflecting the communal ethos deeply rooted in Samoan society.

²⁴ Also described by Kramer as "village community" (Kramer, 1994, p. 657), Shore as "village centre; residential core" (Leauepepe, 1995, p 137). Refiti goes on to describe 'a'ai as an Refiti goes on to describe 'a'ai as an "internalising" term, whereas fua'iala has describes the connections between neighbourhoods (2015; p114)

²⁵ Cultural activities include 'ava ceremony, evening prayers, and familial meals (Refiti, 2015; p113)

3. Fua'iala (Collection of 'a'ai and pitonu'u)

At a broader level, the fua'iala encompasses a collection of 'a'ai and pitonu'u, connected by pathways. To build on Jackmond's definition, where he defines family Household Units (HHU) as "fua i ala" (Jackmond, 1989, p82), this study proposes fua'iala as a system or collection of 'a'ai and pitonu'u.²⁶ This definition represents a more extensive community network, comprising multiple familial groups that share common ancestry or social ties. The fua'iala is marked by a network of pathways, both literal and metaphorical, that facilitate communication, cooperation, and social interaction among its constituent units. These pathways are not just physical routes but symbolise the interconnectedness of families and the communal sharing of resources and responsibilities. The fua'iala, thus, fosters a stronger sense of collective identity and belonging, integral to the Samoan communal way of life.

In this nested system, each level plays a critical role in maintaining the social fabric of Samoan society. The progression from 'a'ai to pitonu'u, and ultimately to fua'iala, illustrates an expanding circle of kinship, cooperation, and communal identity. This structure underscores the importance of collective and individual identity, a key aspect of aganu'u (village identity) and Fa'aSamoa. This understanding is crucial in the contemporary discourse on environmental conservation, sustainable development, and the revitalisation of Indigenous knowledge and practices. Fua'iala in essence, is a reminder of the profound wisdom inherent in Indigenous cultures and their regenerative approaches to living in harmony with the environment.

²⁶ Martinsson-Wallin describes that a collection of pitonu'u make up a nu'u (2007; p21) (Holmer, 1980; Davideon, 1979). However, I use fua'iala in this context, as it aligns stronger with the definitions and comparison of fua'iala and nu'u by Refiti (2015).

Summary

The fua'iala system resonates with other Indigenous Oceanic watershed and nature-based systems, such as the ahupua'a in Hawai'i, tapere in the Cook Islands, and kaainga in Aotearoa. Each of these systems emphasises the integration of community, land, and resources within a holistic framework, reflecting an Indigenous approach to living in harmony with the environment.

Fua'iala symbolises a profound connection with the land, rooted in traditional knowledge and practices. It stands as a testament to the resilience and adaptability of Indigenous communities, who have developed sustainable ways of living that are intricately tied to their cultural identity and environmental stewardship. The fua'iala, therefore, is not just a physical manifestation of a village division but a metaphor for the interconnectedness of life, land, and community. This Indigenous regenerative living system, as exemplified by fua'iala, challenges modern notions of space, property, and community organisation. It presents an alternative model of watershed management and communal living, emphasising the importance of pathways and connections over static boundaries and individual ownership.

This understanding is crucial in the contemporary discourse on environmental conservation, sustainable development, and the revitalisation of Indigenous knowledge and practices. Fua'iala, in its essence, is a reminder of the profound wisdom inherent in Indigenous cultures and their regenerative approaches to living in harmony with the earth.

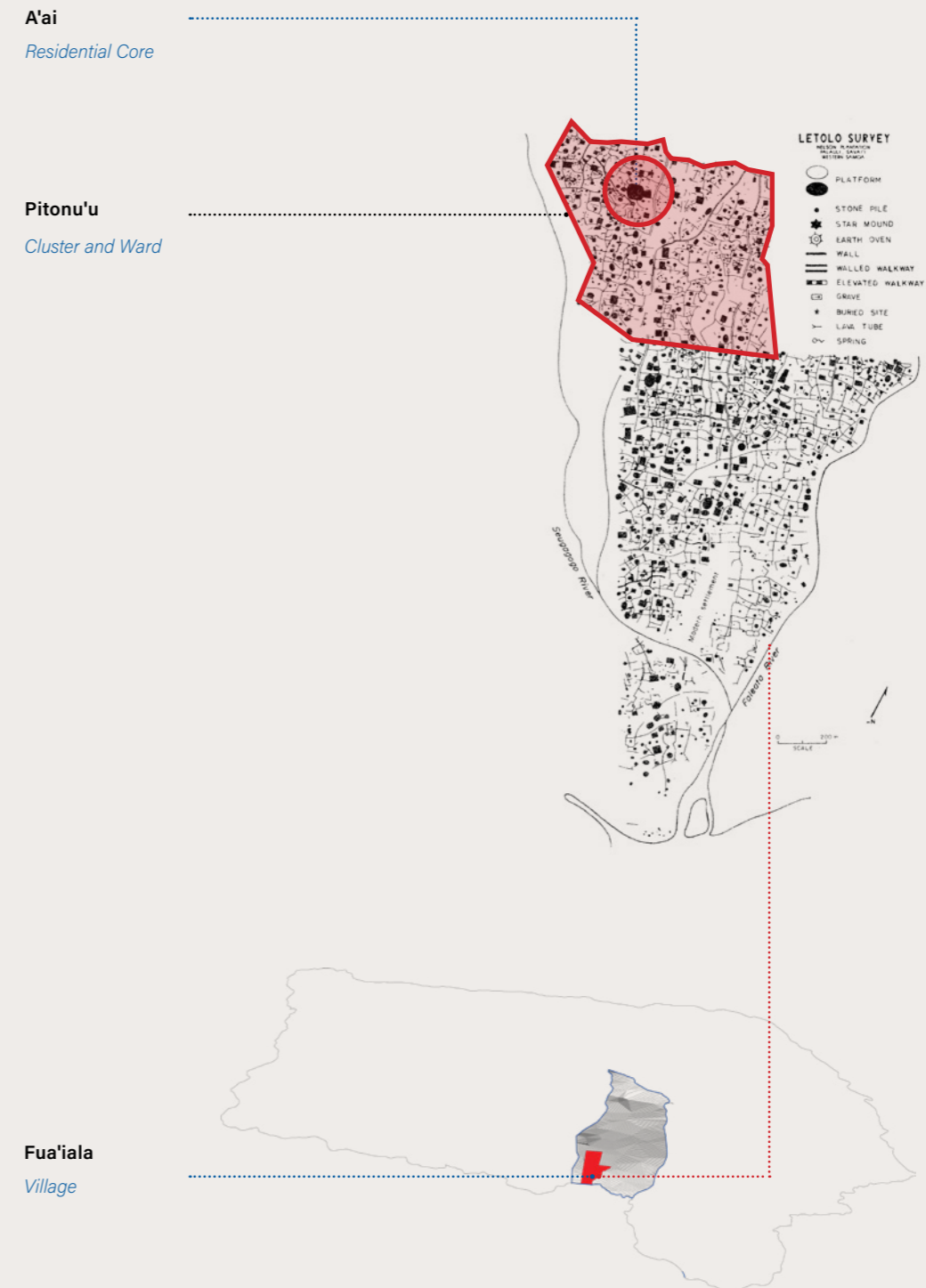


Figure 18

Mapping of the Samoan Fua'iala System (Own work).

04

Indigenous & Regenerative Design Principles

The following chapter analyses Moananui and regenerative design principles, demonstrating how existing frameworks enhance both human and environmental well-being in Moananui. Through a comprehensive review of Indigenous and Moananui design methodologies, the analysis reveals that regenerative design frameworks are not merely theoretical constructs but practical tools that substantially add value to socio-environmental systems within Moananui. By embracing these frameworks, Moananui communities are able to restore and enhance their natural environments while simultaneously regenerating cultural and social systems, thereby contributing to a resilient future.

Through an archival survey, six influential case studies are presented, each illustrating the transformative power of integrating Indigenous wisdom with regenerative design. They are Te Aranga Principles from Aotearoa, the 9 Generative Principles of Indigenous Samoan architecture formulated by Micah van der Ryn, the Mauri Ora Compass from Aotearoa, The Seven First Principles of Regeneration from Canada, the Regenerative Design and Development Principles from the USA, and the Moku System Framework for Ahupua'a Recovery from Hawai'i. Each case study provides a unique perspective on how cultural knowledge and modern regenerative strategies can coalesce to foster environmental stewardship and community well-being.

Ultimately, the investigation identifies common threads among these diverse frameworks and elucidates how they collectively inform the development of Maumoana. By synthesising these approaches, Maumoana emerges as a holistic regenerative framework that encapsulates the essence of Moananui's rich cultural heritage and ecological wisdom. This innovative framework promises not only to enhance the resilience and sustainability of Moananui communities but also to serve as a model for global sustainability practices. The chapter advocates for a regional adoption of Maumoana, suggesting that its principles could lead to place-based advancements in how Moananui communities, and global Indigenous communities around the world, can lead environmental and cultural regeneration.

The Law of Three Framework

The Law of Three by Regenesi is a powerful conceptual framework that facilitates the generation of innovative solutions to complex problems and challenging situations. It significantly enhances the likelihood of actualizing creative ideas, rather than merely aspiring for them. This framework is particularly valuable in contexts requiring:

- Conflict resolution
- Enhanced understanding
- Alignment among groups or individuals
- Effective planning

By applying the Law of Three, we improve our ability to collaborate and devise highly creative solutions that benefit all levels of a living system. This approach leads to more effective and meaningful interactions, better planning, and the alignment of diverse actions toward a common goal. The Law of Three is grounded in a deceptively simple yet profound concept: genuine creativity arises from the interplay of three distinct but interacting forces:

1. Activating Force

This force stems from the drive to initiate thoughts, actions, or material creations, aiming to foster viability and develop new capabilities.

2. Restraining Force

Originating from the desire to shape and refine, the restraining force emphasizes uniqueness, completeness, and the act of forming and utilizing resources.

3. Reconciling Force

This force arises from the intent to generate value and benefit across all levels of the systems involved. It embodies qualities of harmonization, alignment, and attunement.

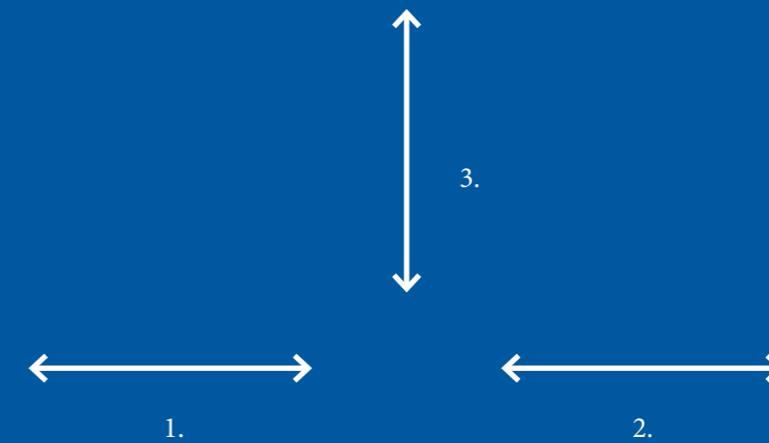


Figure 19 Regenesi's Law of Three

1: Activating Force; 2: Restraining Force; 3: Reconciling Force

Incorporating the Law of Three into our thinking and practices enhances our capacity to navigate complexity, fostering collaboration and generating solutions that are not only innovative but also deeply attuned to the needs of all stakeholders involved. This framework empowers diverse parties to coalesce around a shared vision, driving collective progress toward a greater, unified purpose.

The use of The Law of Three Framework in this study was invaluable in navigating the complex holarchies relevant and influential in the regeneration of Moananui living systems, and contextualizing the role and value of Maumoana in that process. The summary of framework outcome is below:

1. Fua'iala System (Activating Force)

The activating force is the regeneration of the fua'iala system within the Palauli Plantation and Palauli Watershed living systems. This motivation also seeks to influence the regeneration of living systems across Moananui.

2. Lack of understanding of Moananui living systems (Restraining Force)

Findings to date has surfaced that an understanding of prehistoric Samoan settlement patterns at the plantation and watershed scale is largely unknown in a Samoan cultural and theoretical context. This lack of knowing and understanding of the fua'iala system, or a similar spatial concept, proves to be the restraint in proposing it as a driving concept within the project. Similarly, Indigenous Moananui living systems across the region are also under-developed, making way for contemporary urban development that is largely misaligned with the patterns of natural and cultural living systems. Attempts to regenerate these living systems are also met with knowledge gaps due to colonisation, imperialism, and industrial development.

3. Moananui Regenerative Design Framework (Reconciling Force)

The proposed reconciling force is a value-adding framework, Maumoana - a Moananui Regenerative Design Framework anchored in Moananui values, principles and spatial concepts. Maumoana is a value-adding process for Moananui communities, design professionals, and stakeholder guilds to meaningfully regenerate Moananui living systems.

The Framework exercise concluded that a value-adding framework serves as a critical catalyst for Moananui communities to regenerate their local living systems effectively. The subsequent section presents a case study of various culturally specific design frameworks, illustrating how these established models enhance both human and environmental well-being within Moananui. The insights gained from these case studies were instrumental in shaping the development of Maumoana, highlighting the common threads that contribute to sustainable and regenerative practices in these communities.

Te Aranga Design Principles

Between 2004 and 2008, a series of wānanga among hapū, iwi, governmental departments, and consultants, focused on the transformative potential of the built environment to address intergenerational challenges within Māori communities. These discussions culminated in the creation of the Te Aranga Māori Cultural Landscapes Strategy in 2008 (Ngā Aho, 2008), later refined and widely recognized as the Te Aranga Māori Design Principles in 2012 (Auckland Design Manual, 2012). The design strategy and principles was the first time there was a collective effort by Māori to articulate Māori interests in to the Aotearoa's contemporary built environment (Auckland Design Manual, 2012). These principles, deeply rooted in Māori values, offer a robust outcomes-based methodology that not only involves ahi kā²⁷ in shaping the built environment, but also situates Aotearoa within the broader context of Te Moana Nui a Kiwa. This engagement model reflects a significant shift towards recognising and incorporating Indigenous perspectives in urban development and planning processes (Paul, Hatton, 2018).

The Auckland Design Manual outlines the key objectives of the Te Aranga Design Principles, emphasising their role in enhancing the protection, reinstatement, development, and articulation of Mana Whenua Cultural Landscapes. These principles establish a strategic foundation and framework for design processes, aiming to elevate our collective experience and appreciation of both natural and social environments. By articulating specific design outcomes and processes, the principles seek to foster a deeper connection to these landscapes, promoting an enriched interaction between people and their surroundings (Paul, Hatton, 2018). This approach not only acknowledges but actively incorporates the historical and cultural narratives of the land, thereby enriching the fabric of urban and rural developments.

27 Māori with longstanding connection to a certain place.

Furthermore, the Te Aranga Design Principles advocate for the development of systematic and long-term relationships between all stakeholders, including mana whenua, ahi kā, design professionals, and governmental agencies. This culturally grounded approach is pivotal in regenerating environments that resonate with and reinforce a sense of place. By establishing ongoing collaborations, these principles encourage a dynamic and evolving dialogue that continuously feeds back into the design process, ensuring that development is both responsive and respectful to Māori cultural values. This methodological framework thus acts as a catalyst for creating environments that not only meet functional needs but also foster a profound connection to the cultural and spiritual heritage of Aotearoa, contributing to the resilience and vitality of Māori communities.

Figure 20

Te Aranga Principles was used as a design tool for the regeneration of He Whakakitenga o te Whenua, a design proposal which opposed a 400-Unit housing development in Ihumaatao (MAU Studio, 2019-2024).



Value	Description
Rangatiratanga	The right to exercise authority and self-determination within one's own iwi / hapuu realm.
Kaitiakitanga	Managing and conserving the environment as part of a reciprocal relationship, based on the Maaori world view that humans are part of the natural world.
Manaakitanga	The ethic of holistic hospitality whereby Mana Whenua have inherited obligations to be the best hosts they can be.
Wairuatanga	The immutable spiritual connection between people and their environments.
Kotahitanga	Unity, cohesion and collaboration.
Whanaungatanga	A relationship through shared experiences and working together provides people with a sense of belonging.
Mātauranga	Maaori / Mana Whenua knowledge and understanding.

Table 4

Māori values that form the foundations of Te Aranga Design Principles. (Ngā Aho, 2012)

Principle	Description
Principle 01: Mana	The mana of iwi and hapū as Mana Whenua is recognised and respected.
Principle 02: Whakapapa	Māori names are celebrated, both traditional and new.
Principle 03: Taiao	The natural environment is protected, restored and enhanced.
Principle 04: Mauri Tū	Environmental health is protected, maintained and / or enhanced.
Principle 05: Mahi Toi	Iwi/ hapuu narratives are captured and expressed creatively and appropriately.
Principle 06: Tohu	Mana Whenua significant sites and cultural landmarks are acknowledged.
Principle 07: Ahi Kaa	Iwi/ hapuu have a living and enduring presence and are secure and valued within their rohe.

Table 5

Te Aranga Design Principles and their descriptions. (Ngā Aho, 2012)

Mauri Ora Compass

Created by Yates, Dombroski and Dionisio, (Yates, A., Dombroski, K., & Dionisio, R. (2023) the Mauri Ora Compass is a decision-making tool that has been co-developed as part of the research discussed in the document. It is designed to build on Māori understandings of the world, particularly the concept of mauri ora, which refers to socio-cultural-ecological vitality (Yates, 2021). The compass consists of a data-display visualization of holistic well-being indices and a future-focused "navigator" that provides strategies for enhancing socio-cultural-ecological well-being. It is intended to be co-created with place-based users, taking into account local and cultural particularities.

Mauri is described as a foundational concept in Māori ontologies that signifies the inherent connectivity and vitality of all living entities in the world (Yates, 2021). It is a life-force or life-field that encompasses not only biotic or "alive" beings but also environmental entities such as rocks, atmosphere, and climate. Mauri is understood as a relational and interconnected concept, emphasizing the holistic well-being and interdependence of all entities within the living-world.²⁸ The concept "ora" in Māori culture refers to a holistic understanding of wellbeing, health, and life. It encompasses physical, mental, and spiritual health and emphasizes the interconnectedness of all aspects of life. "Ora" also extends beyond human wellbeing and includes the vitality and wellbeing of all living beings and the environment (Yates, 2019). Mauri Ora therefore, is a Māori concept that refers to all-of-life wellbeing. It is a holistic approach to wellbeing that encompasses the vitality and interconnectedness of all living things, including humans, rivers, rocks, trees, and more (Yates, 2016, 2019, 2021).

²⁸ These concepts build off other definitions from Māori philosophers and knowledge holders such as Māori Marsden who defines mauri as "imminent in all things, knitting and bonding them together" (Royal, 2003); Huhana Smith states that mauri is the "ultimate vitality of ecosystems and resources" (Smith, 2012); while Mason Durie describes mauri as an indissoluble "network of interacting relationships" (Durie, 2001). See Yates (2019)

Of particular relevance to Maumoana, the document identifies "Whakaora: Holistic Well-Being Actions", crucial for fostering holistic community and environmental well-being. These actions are designed to address various aspects of urban and rural development, from housing and infrastructure to ecological preservation and community engagement. Each action targets specific areas of need, contributing to a comprehensive strategy for achieving mauri ora.

Integrating these well-being actions into spatial planning is crucial for creating sustainable, resilient communities that respect and uphold Indigenous values and ecological well-being. These actions guide planners and decision-makers in adopting a holistic view of development, one that balances social, cultural, ecological, and economic considerations. The Mauri Ora Compass serves as a vital tool in this process, offering a framework for evaluating and enhancing socio-cultural-ecological vitality in various contexts.

By embracing these principles, spatial planning can contribute to the regeneration and preservation of natural environments, the promotion of sustainable living practices, and the fostering of strong, cohesive communities. This approach not only aligns with Indigenous ontologies but also addresses global challenges related to sustainability and well-being, offering a pathway toward more equitable, resilient futures.

9 Generative Principles in Samoan Indigenous House Forms

The concept of "Generative Principles" in Samoan architecture represents a sophisticated evolution of analysis, interpretation, and development, tracing its origins to Roger Neich's seminal work, *Material Culture of Western Samoa: Persistence and Change* (1985). In this foundational study, Neich delineates three enduring principles characteristic of Samoan architecture: 1) round ends, 2) open sides, and 3) a single room under each roof. These elements, as Neich argues, have withstood the test of time, persisting through technological advancements and cultural integrations that have introduced new materials such as nails, mill-sawn timber, concrete slabs, and iron roofing. This blend of traditional and contemporary elements in Samoan architecture reflects a dynamic interplay between preservation and innovation, highlighting how built environments serve as a canvas for cultural expression and adaptation.

Building on Neich's insights, Micah Van der Ryn further explores these dynamics in his 2014 analysis of the Fale Samoa, the traditional Samoan house, considering its physical forms within the broader context of village life and socio-cultural relationships. Van der Ryn's work, particularly his research paper, *The Measina of Architecture in Samoa - An Examination of the Va in Samoan Architecture and Socio Implications of Architectural Changes*, delves deep into the "9 Features of Samoan Architecture and Space", articulating how these architectural elements configure the Samoan cultural experience and identity. Van der Ryn observes that the features and principles of Samoan built environments provide the "habitus and gestalt for Samoan cultural experience and being" (Van der Ryn, 2014, p645). His analysis extends into how these features evolve into the "9 Generative Principles" in his chapter *Contemporary Change in Samoan Indigenous Village Architecture: Sociocultural Dynamics and Implications*. Here, Van der Ryn emphasizes the interconnectedness of these principles and their collective contribution to the Samoan worldview, particularly through the spatial concept of Va, which embodies the relational and spatial order central to Samoan society (Van der Ryn, 2018).

The study of these Generative Principles by both Neich and Van der Ryn underscores the profound impact that architectural forms have on shaping and reflecting the socio-cultural fabric of Samoa. This investigation is crucial not only for understanding the resilience and adaptability of Samoan architectural typologies but also for its implications in broader Moananui living systems. Such an in-depth exploration is vital for the development of Maumoana, as it aims to articulate and enhance the symbiosis between Indigenous Samoan built forms and intangible cultural worldviews, ensuring that these principles inform and guide sustainable and culturally resonant development across the region.

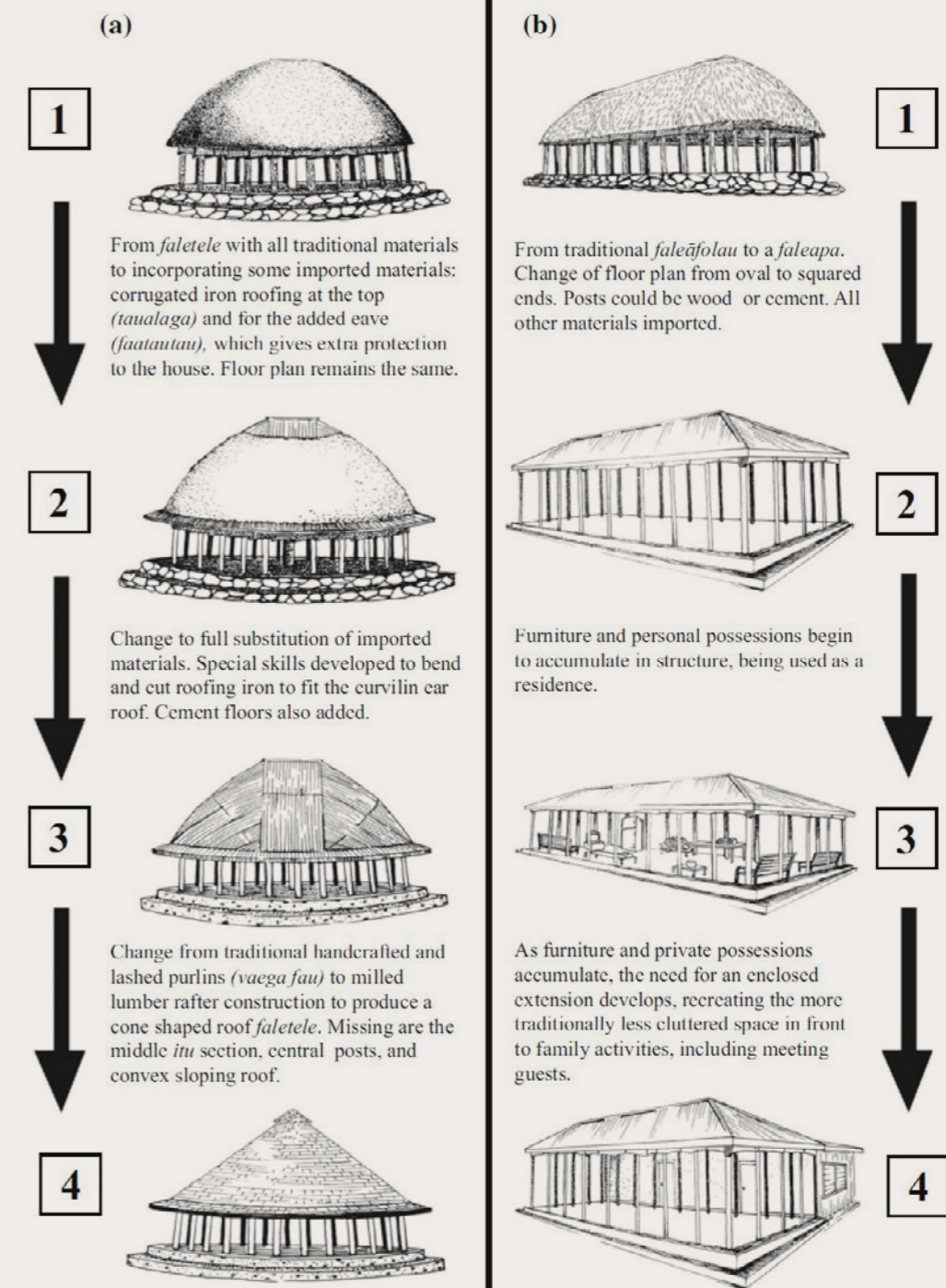


Figure 22

Transformation of the vernacular Fale Samoa with the importing of new materials and technologies (Utoaluga and Van der Ryn, 2018).

Table 6

Generative Principles of Samoan architecture developed by Neich (1985), and Van der Ryn (2008, 2014)

Roger Neich Generative Principles (Neich, 1985)	
Principle 01: Rounded Ends	A key characteristic of Samoan architecture is the rounded ends. Rounded ends emphasise the social ranks of chiefs and provide engineering aerodynamic benefits.
Principle 02: Open Sides	The openness of the Samoan fale epitomises transparency, blurs the boundary of interior and exterior spaces, and acts as a symbol for Samoan hospitality.
Principle 03: Single room under each roof	Open sides of the fale complement no internal partition walls, experiencing space as an open continuum.

Micah Van der Ryn Generative Principles (Van der Ryn, 2008; 2014)	
Principle 04: Multiple and ranked structures within household	A family residence is often spatially structured. The hierarchy of space is characterised as a linear or radial connectivity from formal to less formal. Spatial relationships occur from the malae to fale o'o, the umu kuka, then to the fale ese. Important to note that they are still visually connected, without the physical barriers as separators.

Principle 05: A flexible temporally bracketed use of space	Flexibility and versatility characterise Samoan use of domestic space (in either a Western or Samoan style building). Various activities such as formalities, eating, and sleeping can happen within the same space (although separately). Space is not functionally bound but instead adapted to the needs of occupants.
Principle 06: Samoan spatial ranking of space along a front/back (centre/periphery) axis	A linear ranking of internal spaces also characterises Samoan architecture. Luma (front) is demarcated for people of significance, and tua (back) is reserved for serving and people of host family/ village.
Principle 07: The social symbolism of house posts	Posts signify and activate political and cultural relationships. Posts are activated through formal settings, whereby visiting and host chiefs and untitled men and women position themselves according to social ranking.
Principle 08: The social structural significance of the faletalimalo	The faletalimalo, or fale tele, is the most significant building in the village. They signify the genealogical connections of village titles and are often the fale in which host villages welcome and greet visiting parties.
Principle 09: The spatial significance of the malae	The malae and the legends attached to it feature significantly in a Samoan village's identity and ceremonial life. The malae provide orientation for a village/ household layout and often acknowledged in formal settings for the dignity and sense of identity it brings to the village.

Seven First Principles of Regeneration

The Seven First Principles of Regeneration, as articulated by Carol Sanford, are deeply embedded in ancient and Indigenous modes of thought, yet enriched by contemporary insights from ecology, psychology, and other modern disciplines (Sanford, 2020). This synthesis of traditional wisdom and scientific understanding forms a robust framework for examining and interacting with living systems. Sanford, a member of the Turtle Clan of the Mohawk tribe, draws upon her rich Indigenous heritage and personal experiences to craft these principles, providing a comprehensive blueprint for observing and understanding the dynamic interplay within ecosystems. As defined in her publication *The Regenerative Life* (2020), Carol Sanford defines First Principles as:

The result of a disciplined process to dig down to the original or fundamental understanding from which all of our other principles derive. They are axiomatic: they can't be proven but our entire way of understanding the world flows from them.

Sanford's framework is structured around seven core principles, categorized into three internal aspects, a transitional aspect, and three external aspects, each vital for the holistic functioning of living systems (Van Perbough, 2024). Internally, the principles of Wholeness, Essence, and Potential encourage an introspective focus on the core values and inherent possibilities within a system. The bridging principle, Developmental, serves as a crucial link, enhancing the growth and evolution of individuals and communities by connecting internal qualities with external actions. Externally, the principles of Nestedness, Nodal, and Reciprocity—termed as the Generation of a Field of Energy—emphasize the importance of systemic integration, strategic interactions, and mutually beneficial relationships within the environment (Sanford, 2020; van Perboigh, 2024).

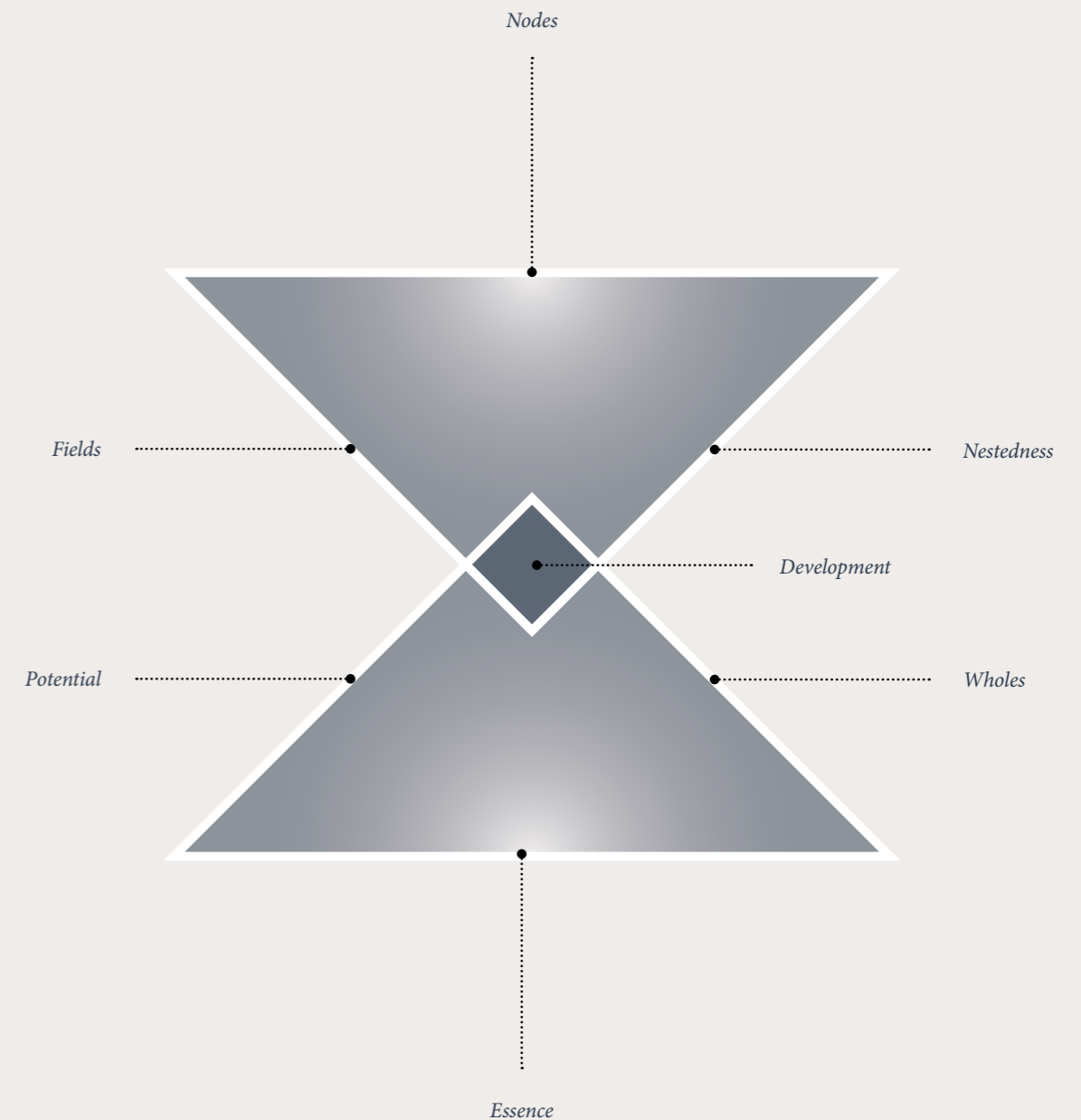


Figure 23

Framework of the Seven First Principles of Regeneration as illustrated by Carol Sanford (2020).

Seven First Principles of Regeneration	
Wholes	The capability to autonomously operate interactively within systems and with other systems.
Potential	Initiate with potential, and not problems and issues. Allowing qualities of wholes to be expressed within any given context.
Essence	The irreducible core of something, what makes it singularly itself. Working through essence-thinking is foundational to understanding wholes and potential.
Development	Seek to grow and develop potential by increasing capacity of wholes to be vital, viable, and able to evolve.
Nestedness	To play a core role in lesser or greater systems, contributing to the success of nested wholes.
Nodes	Seek the highest or most effective points for systemic return and impact in interventions.
Fields	To operate within living dynamic systems and to make contributions that benefit systems health for all.

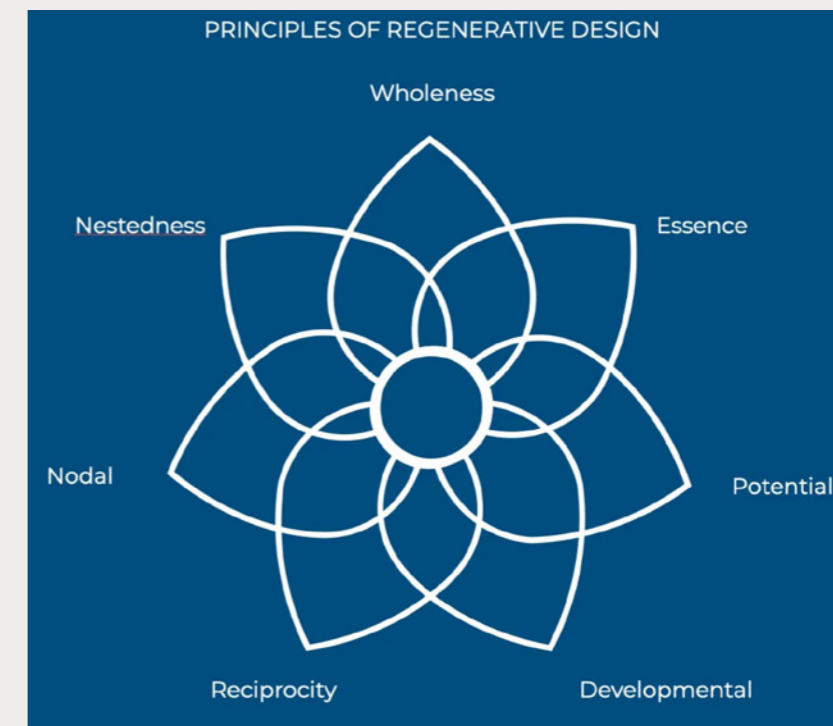
Table 7

Carol Sanford's Seven First Principles of Regeneration (2020).

Understanding the Seven First Principles alongside other Indigenous frameworks, such as the Te Aranga Principles and the Nine Generative Principles of Samoan Indigenous House Forms, provides a comprehensive toolkit for integrating Indigenous spatial constructs and worldviews into contemporary design practices. Through her teachings, Sanford not only conveys the wisdom imparted by her ancestors but also demonstrates how these principles can be dynamically applied to modern challenges. Her detailed exploration of these principles offers invaluable guidance for the development of Maumoana, facilitating a design process that is both deeply rooted in cultural heritage and responsive to the needs of today's diverse communities. This approach ensures that Maumoana is not merely a theoretical model but a living, evolving framework capable of driving significant ecological and social regeneration.

Figure 24

Adaptation of Sanford's principles by Ernesto van Peborgh (2024).



Regenerative Design & Development Principles

Regenerative development and design represent an integrated framework that melds modern and traditional technologies to guide the design, management, and ongoing evolution of sustainable built environments. This approach leverages a synergy of ancient wisdom and contemporary innovation to foster sustainable living spaces that grow and adapt over time (Mang, Reed, 2012). This framework not only pursues sustainability but also enhances the capacity of living systems—both social and natural—to showcase their potential for diversity, complexity, and creativity, thereby achieving transformative ecological and social outcomes (Regenesis et al., 2016). As outlined by Pamela Mang and Bill Reed in their article Regenerative Development and Design, the framework accomplishes:

1. Improving the health and vitality of human and natural communities—physical, psychological, economic and ecological;
2. Producing and reinvesting surplus resources and energy to build the capacity of the underlying relationships and support systems of a place needed for resilience and continuing evolution of those communities;
3. Creating a field of caring, commitment and deep connection to place that enables the changes required for the above to take place and to endure and evolve through time (Mang, 2009; Jenkin and Pederson, 2009)

Table 8

Regenerative Design & Development parts, premises and principles developed by Regenesis (2016).

Part One Creating Regenerative Projects	Introduces ways to think about the creation of a regenerative design product
Premise 01	Every living system has inherent within it the possibility to move to new levels of order, differentiation, and organization.
Principle 01: Design for Evolution	Every living system has inherent within it the possibility to move to new levels of order, differentiation, and organisation.
Premise 02	Co-evolution among humans and natural systems can only be undertaken in specific places, using approaches that are precisely fitted to them.
Principle 02: Partner with Place	Co-evolution among humans and natural systems can only be undertaken in specific places, using precisely fitted approaches to them.
Premise 03	The sustainability of a living system is tied directly to its beneficial integration into a larger system.
Principle 03: Call forth a collective vocation.	The sustainability of a living system is tied directly to its beneficial integration into a larger system.
Premise 04	The sustainability of a living system is tied directly to its beneficial integration into a larger system.
Principle 04: Actualise stakeholder systems toward co-evolving mutualism.	Projects should be vehicles for catalysing the cooperative enterprises required to enable evolution.

Part Two Creating Regenerative Processes	Addresses the regenerative design process
Premise 05	Potential comes from evolving the value-generating capacity of a system to make unique contributions to the evolution of larger systems.
Principle 05: Work from potential, not problems.	Potential comes from evolving the value-generating capacity of a system to make unique contributions to the evolution of larger systems.
Premise 06	Potential comes from evolving the value-generating capacity of a system to make unique contributions to the evolution of larger systems.
Principle 06: Find your distinctive, value-adding roles.	The continuing health of living systems depends on each member living out its distinctive role.
Premise 07	Potential comes from evolving the value-generating capacity of a system to make unique contributions to the evolution of larger systems.
Principle 07: Leverage systemic regeneration by making nodal interventions.	Small conscious and conscientious interventions in the right place can create beneficial, system-wide effects.
Premise 08	A project can only create systemic benefit within a field of caring, co-creativity, and co-responsibility.
Principle 08: Design the design process to be developmental.	A project can only create systemic benefit within a field of caring, co-creativity, and co-responsibility.

Part 03 Becoming a Regenerative Change Agent	A brief discussion of the work that designers must undertake in order to practice regeneratively
Premise 09	The actualization of a self requires the simultaneous development of the systems of which it is a part.
Principle 09: Become a systems actualizer	The actualisation of a self requires the simultaneous development of the systems of which it is a part.

Figure 25

Loreto Bay, an exemplary regenerative development facilitated by RegenesiS. Saw the regeneration of the estuary as a critical component to the regeneration of businesses, people, and place (RegenesiS, 2018).



The principles of regenerative development and design as articulated by Regenesi in their seminal work, *Regenerative Development and Design: A Framework for Evolving Sustainability*, encapsulate essential elements for applying regenerative concepts effectively. These principles function collectively to align motivations and methods, thus facilitating the integration of various ecological design methodologies into a cohesive regenerative practice (Mang, Reed, 2012). Through a global array of examples and case studies, these core principles are illustrated in action, providing a blueprint for engaging in regenerative development practices that are yet to fully realize their creative potential (Regenesi et al., 2016).

In the context of developing Maumoana, this regenerative framework offers invaluable guidance. By adopting these regenerative principles, Maumoana can effectively integrate Indigenous knowledge systems with innovative ecological practices to create sustainable and resilient communities. The framework supports Maumoana in fostering environments that not only return resources and energy back into their systems but also deepen the communal and ecological connections necessary for long-term sustainability and adaptation. This strategic approach ensures that Maumoana is not merely a design concept but a dynamic and evolving entity capable of transforming and enhancing Moananui communities in profound and enduring ways.

Figure 26

The images are of the Regenerative Practitioner Course in 2019-2020 which Tuputau Lelaulu was part of in preparation for the PhD programme. The images are at the Waiheke Library, and Piritahi Marae where the Noho Wānanga was set up to deep-dive into the use of Living Systems Framework into real world projects (Own work).



05

Maumoana

Moananui Design Framework

Maumoana, in the study, aims to create a regenerative design and development methodology that reframes Indigenous Moananui spatial worldviews to rehabilitate, reconstruct and revitalise Indigenous regenerative design principles for Moananui environments. Maumoana consists of six essential sub-frameworks vital for preserving the physical and spiritual environments of Moananui. These sub-frameworks are Vā Moana, Mauri Moana, Mana Moana, Vanua Moana, Ara Moana, and Wao Moana. Each of these frameworks includes three additional spatial concepts that are crucial for applying and transferring the frameworks into various projects. Actualising the potential of the Maumoana frameworks offers communities, institutions, and governments alike to view the region with a new mind and create systemic offerings that build resilience, self-determination, and hope for Moananui communities.

The methodology combines two fundamental concepts related to resilience and identity in Moananui. Firstly, the concept of Mau holds immense significance in Moananui, with its impact evident throughout the region. Literally, Mau can be understood as a Moananui word that means “to persevere”, “to be steadfast”, or “to hold fast to one’s convictions”. Over time, the term came to represent more than literal translations, but also a broader movement of cultural preservation and resistance against outside forces. At present, Mau represents the strength and resilience of Moananui communities in the face of adversity, as well as their commitment to preserving and evolving cultural worldviews and practices. The second concept, Moana, means “ocean” or “sea” in several Moananui languages and holds significant importance in the cultural identity of Pacific peoples. Moana identity represents a shift in how Moananui cultures view themselves, away from traditional Western conceptions of “Pacific” and “Oceania” identity, shifting towards a more interconnected concept that acknowledges the fluid and changeable character of the Moananui environment. The Moana identity emphasises the importance of relationships and connections between Pacific cultures and the ocean and recognises the contributions of diverse Moananui communities to a shared cultural heritage.

Reorientating the two concepts of “Mau” and “Moana” into a regenerative design and development methodology recognises the significance the spatial concepts play in the evolution of Moananui living systems. Both concepts have been influential in constitutional transformation, cultural preservation, and creative sovereignty. The methodology challenges traditional Western-centric perspectives of design and development by focusing on key cultural values systems that act as a framework for regenerating living systems in Moananui. By converging the concepts, Maumoana reframes Moananui worldviews into a design and development framework to assist Moananui communities in designing, managing, and building living environments that enable our people, culture, and natural environment to thrive.

The Regenerative Tetrad Framework

The Regenerative Tetrad outlines four interconnected dimensions essential to the regenerative development process. This framework serves as a tool for comprehending, designing, and enhancing capability in regenerative development, focusing on how such development functions as a value-adding activity. The primary objective of a regenerative project is to cultivate new regenerative capabilities within a system. Therefore, evaluating our actions necessitates a profound understanding of the direction these new capabilities aim to guide the entity.

1. **Place-Sourced Potential** pertains to the unique characteristics of a place and the distinct value these qualities can offer to the world. Every project or initiative begins by questioning, “What is the inherent potential of this place where we choose to work?” Addressing this question enables the creation of projects with significant, beneficial systemic impacts. By leveraging the unique potential of a place, it is positioned to become a regenerative and life-affirming force.
2. **Regenerative Capability** involves embedding new value-generating abilities within any system we engage with. Once these new capabilities are established, the system—be it a watershed, community, or organization—advances to a new level, enabling it to pursue entirely new goals and directions.
3. **Vocation of Place** encourages a deep reflection on the unique contributions required by the place where we work. This concept places the idea of place-sourced potential within a broader regional or systemic context, providing communities with a sense of purpose and identity, and ensuring their economic sustainability.
4. **Co-Evolving Mutualism** focuses on the diverse and mutually beneficial strategies that can integrate a project, community, and place as co-creators. This concept aims to elevate their potential both individually and collectively. We consider, “What is the optimal approach for engaging this specific group of stakeholders?”

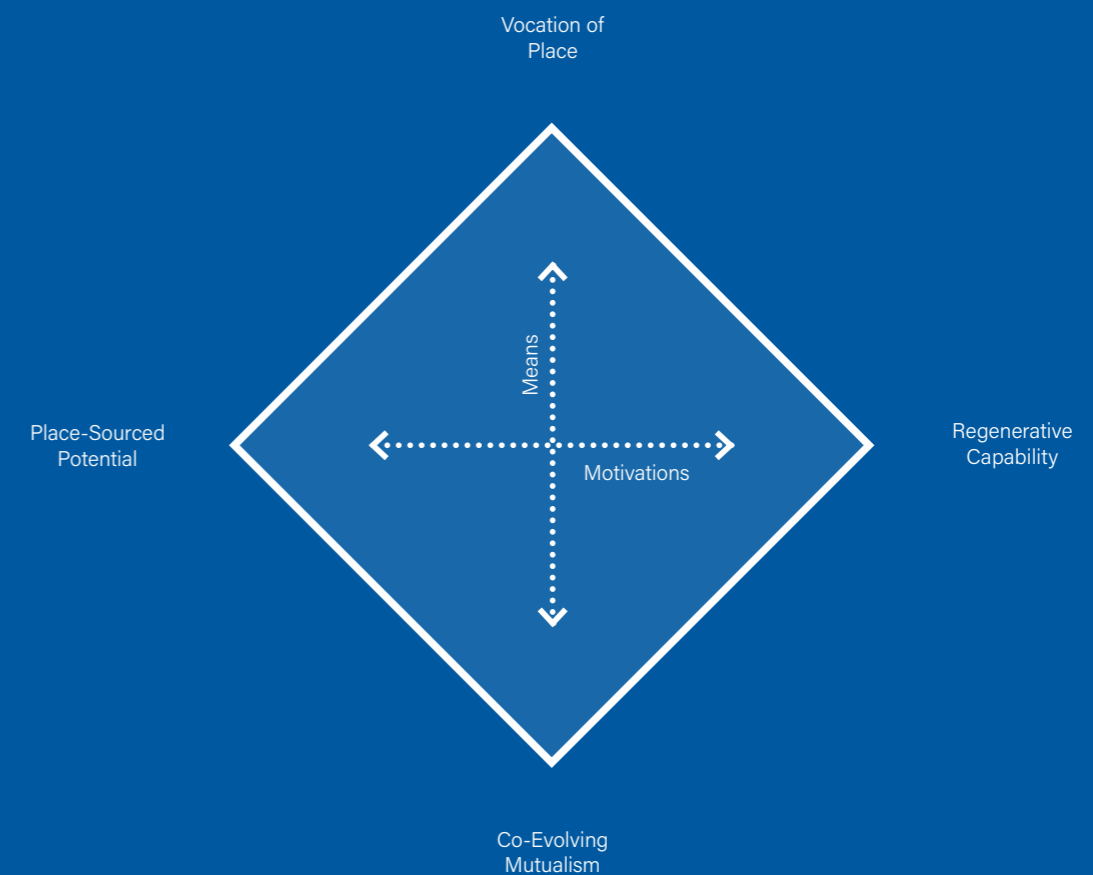


Figure 27

Regenesis' Regenerative Tetrad Framework (Regenesis, 2018).

When effectively designed, the outcomes can leverage a project to foster regenerative capabilities within a place.

By employing the Regenerative Tetrad, we can ensure that development projects are not only contextually relevant but also foster long-term systemic benefits, deeply rooted in the unique characteristics and potential of the place. Using the Regenerative Tetrad contextualises the significance of Maumoana, and how it enables the regeneration of Moananui living systems, and in this specific case, the regenerative development of the Palauli Plantation and Palauli Watershed. Therefore, to contextualise the development of Maumoana, the following baseline has been created:

1. Place-Sourced Potential

- Potential to regenerate the fua'iala system within the Palauli Watershed context. This in turn will contribute to the understanding of prehistoric Samoan settlement patterns and ways of life.
- In a time where Moananui bares the impacts of climatic changes and external colonization, the regeneration of our living systems have, and can be a way to improve local and regional economic and cultural resilience and evolution.
- Therefore, the regeneration of the fua'iala within Palauli Plantation and Watershed will contribute to the ongoing regeneration and evolution of Moananui's living systems and resilience.

2. Regenerative Capability

- Moananui villages, and in this case Vailoa, Vaito'omuli and Fa'aala, have developed their capability to manage and develop their living systems
- As a result of their self-sufficiency, Moananui villages significantly improve their economic bases and reduce their reliance on national and international economic support.
- Regional exchange on living system development and regeneration is fostered to build regional resilience, interdependence and innovation.

3. Vocation of Place

- Remembering our Stories. Reconnecting our People. Regenerating our Places.
- The statement highlights the processes and outcomes of a developmental process in regenerating Moananui living systems. It identifies that within the developmental process is a need to remember the stories, reconnection of our shared values and principles, and regeneration of place-based environments is critical to revitalizing our people and places.

4. Co-Evolving Mutualism

- In effect, Maumoana as a design framework assists Moananui communities, design professionals, and regenerative practitioners in the regeneration of Moananui living systems within their indigenous landscapes or contemporary environments. It offers a strategy and practice methodology grounded in the cultural, ecological, and spiritual concepts – but also offers a lens to develop place-based strategies and principles anchored within the knowledge systems of those communities.

Moananui definitions of Mau

Maori-Polynesian comparative dictionary (Treagear, 1891)

Māori - to carry; Maunga, the act of carrying: Ka mauria ki te ahi, ka kohua—Wohl., Trans., vii. 35. 2. To bring (followed by mai): Ka mauria mai te kumara, me te mapou, me te kowhai—G.-8, 26. 3. To take up; to lay hold of; seized: Ka whiua atu ki runga ki te upoko o Popohorokewa, e hara! kua mau—P. M., 45. Cf. mautarakini, held by the point. 4. Fixed; continuing, lasting; to be steadfast: Kia mau koe ki te kupu a tou matua—Prov. 5. Confined, restrained: Ka tokoa ki runga e Tane, mau ai—Wohl., Trans., vii. 33. Cf. tamau, to fasten. 6. Overtaken. 7. Ka mau te wehi!, How dreadful! 8. Kia mau te rongo, to make peace: Kei whai koe kia mau te rongo ki a ratou—Tiu., xxiii. 6. [See Marquesan.] 9. To know, to recognise; Katahi ka mauria te tane e te wahine ra—A. H. M., ii. 7. Cf. matau, to know.

Samoan - mau, to be firm, fast: O i latou uma na avea i latou o tagata o taua na latou taofi mau ia te i latou; All those who took them captives held them fast. (b.) To have abundance of food; (c.) to dwell; (d.) to be decided; to be unwavering; maua, to get, to obtain, to acquire; (b.) to reach, to get to; (c.) to overtake; (d.) to catch; mamau, to be fast, to be firm; (b.) to be costive; fa'a-mau, to make fast; a fastening; (b.) to make a stand in war; (c.) a hinge.

Tahitian - mau, to retain or hold anything; to seize; to take hold of a thing: A mau papa i tei noaa ia oe na; That which you have, hold fast. (b.) An interjection, Hold! ia mau, take hold, mamau, to take hold, to detain; (b.) to have abundance in possession; haa-mau, to establish or fix a thing; haa-maumau, to hold, to continue to hold; (b.) to impress repeatedly and by degrees any subject on the mind. Cf. tamau, to take hold of; to persevere; haa-maumau-orero, to repeat old grievances, or prevent them from being forgotten; to fix or give a temporary permanence to a report; mamau-niho, to hold each other by the beak, as cocks sometimes do in fighting; mauhaa, the handle of a tool; the stalk of fruit; mautori, to withhold; to keep steadfastly; tumau, constipation.

Hawaiian - mau, to repeat often and frequently, as in counting; (b.) to continue, to endure, to persevere; to remain perpetually. Aole e mau ana au me oukou; I shall not always be with you. (c.) To persevere; to flow on continually, as a stream of water: Aia i ka Aaia, haha

mau ia a Kane; There at Aaia, constantly breathed on by Tane. Hoo-mau, to persevere; to remain in force, as a law; maumau, to be firm; to be fixed. Cf. mauvale, constant; kamau, endurance; faithful; mao, to carry, to bear off, to carry away; a moving along; a change of position, as of a body of persons.

Tongan - mau, to obtain; to possess; to accept; (b.) fast, firm; constant, unwavering; constancy, firmness: Ikai, ka te mau ha'i koe ke ma'u; No, but we will bind you fast. (.) Always, perpetually; mamau, fast, fastened; (b.) costive; faka-mau, to make firm; to establish; to fasten; to cause to stand; (b.) to marry; (c.) to judge; a judge; faka-mau-mau, to restrain; to repress. Cf. tuumau, steadfast; faka-mauaihe, to keep on at the old things; mauaki, to keep at this; to be so; mauta, to have acquired; to have learnt; mau-mautuga, to stick fast; agamau, fixed, settled; matamau, fixed, tearless (applied to the eyes).

Marquesan - mau, to be firm, strong, solid; haa-mau, to make fast: Mea nati a haamau i tahuna; To tie and make fast in couples. Cf. mou, peace; to appease; tamau, to fasten; to make soild; to attack; maohi, to touch; to seize, to take.

Mangarevan - mau, fixed, firm, to be solid; (b.) to be at anchor; (c.) to hold; to seize; (d.) to practise, to exercise; (e.) true; mamau, to be at anchor; maumau, to hold fast, to be firm; aka-mau, to fix, set, consolidate, fasten. Cf. maukikia, to hold fast, to be firm; tamau, to hold fast.

Mangaian - mau, fixed, fast; to fasten; firm; E tuku te taura i Enuakura; Mauria! Let down the ropes to Spirit-land; Hold fast! Tongarevan—mau, to possess.

Paumotan - faa-mau, to sustain; haka-mau, to join. Cf. tamau, fixed desire.

Fiji - cf. mau, to sit still when ordered to do something.

Mau - cf. mau, to will; to design.

The concept of Mau holds immense significance in Moananui, with its impact evident throughout the region. Literally, Mau can be understood as a Moananui word that means “to persevere”, “to be steadfast”, or “to hold fast to one’s convictions”. Over time, the term came to represent more than literal translations, but also a broader movement of cultural preservation and resistance against outside forces. At present, Mau represents the strength and resilience of Moananui communities in the face of adversity, as well as their commitment to preserving and evolving cultural worldviews and practices.

The following sub-chapter investigates the concept of Mau and its impact on social, cultural, and political movements in Moananui over the past three centuries.

Mau a Pule

The Mau²⁹ was a significant anti-colonial resistance movement in Samoa during the early 20th century. It was led by a group of Samoan leaders who were committed to reestablishing Indigenous agency and challenging colonial governmental structures by resisting the attempts of German and New Zealand colonial powers to exert control over their cultural and governance systems (Alofaituli, 2017).

The Mau was reestablished in 1927³⁰ by a group of Samoan and non-Samoan leaders in opposition to the New Zealand administration. Led by Taisi Olaf Frederick Nelson, the

29 The Mau was originally known as the Mau a Pule, translating to the “Opposition Movement of Savai’i (Davidson, 1997; p86). Lauaki Namulau’ulu Mamoe, tūlāfale (orator chief) of Safotulafai, the capital of Fa’asaleleaga district in Savai’i, was instrumental in the establishment of the Mau. His first efforts in 1908-1909 to oppose German colonial rule received limited support from Tumua (political districts from Upolu), but more support from Pule (political districts of Savai’i). Hence, the name “Mau a Pule” demonstrates the opposition was largely from Savai’i in its earlier stages. Although Lauaki’s efforts were not widely supported, it continues to impact Sāmoan modern identity and became influential in latter efforts of the Mau that challenged colonial regimes (Alofaituli, 2017).

30 The regeneration of Mau came through the establishment of the Citizens Committee in 1926, which was made up of Europeans and Samoan matai who addressed issues such as “medical tax, appointment of Faipule, prohibition of alcohol, native affairs, finance, agriculture and imported labor” (Nelson, 1928; p14). The Committee formed the objectives of “The Samoa League”, which later on became commonly known as the Mau (Davidson, 1997; p118-119; Field, 2008; p84-85).

Mau was formed in response to the New Zealand administration's attempts to control and regulate the Samoan economy and to impose new taxes on the Samoan people. The Mau leaders saw these policies as a direct threat to Samoan independence and sovereignty, and they were determined to resist them. In his letter to the New Zealand government, which was petitioned and supported by Samoans, Nelson defined the Mau movement against the New Zealand administration, which was being administered by George Spaffors Richardson (commonly referred to as “Richard the Administrator”):

The word ‘Mau’ means an opinion and represents anything that is firm or solid. In this case, the Mau represents that very large majority of the people of these islands who are the firm opinion that drastic changes are necessary for the Administration and the method of Government in Sāmoa.³¹

The Mau leaders organized a series of protests and demonstrations, including a boycott of European goods and a refusal to pay taxes (Rowe, 236).³² These protests were met with harsh repression by the New Zealand authorities, who arrested and imprisoned many of the Mau leaders³³. Despite this repression, the Mau movement continued to grow and gain support from the Samoan people. The movement was driven by a deep sense of national pride and a commitment to preserving Samoan culture and traditions in the face of colonial encroachment (Meleiseā, 1987).

The turning point for the Mau came on Saturday 28 December 1929, when New Zealand authorities opened fire on a peaceful Mau demonstration in Apia, killing several Samoans. Among those who were shot to death was Tupua Tamasese Lealofi III, a paramount chief of Samoa and leader of the Mau. On the eve of his passing, Tupua Tamasese understood the consequences of his death would amongst the Mau and Samoa. So with his last moment, his dying appeal was made aware to those closest to him and noted as one of the finest moments of the history of the Mau (Field, 2008; p157):

31 Citizens’ Committee to Nosworthy, 1927 June 11, IT1 (1/23/8), N.Z. National Archives, Wellington.

32 Rowe, Sāmoa Under the Sailing Gods, 236.

33 Nelson, The Truth About Sāmoa, 20



Figure 28

An image for Tupua Tamasese Lealofi III funeral procession, with members of the Mau leading the march (Tattersall, 1929).

“My blood has been spilt for Samoa
I am proud to give it.
Do not dream of avenging it, as it was spilt in maintaining peace.
If I die, peace must be maintained at any price.”

This event, known as "Black Saturday," galvanized the Samoan people and intensified their commitment to the Mau cause. Over the next several years, the Mau continued to organize protests and demonstrations, and the New Zealand authorities responded with increasingly brutal repression. However, the Samoan people remained committed to the cause, and the movement continued to gain support both at home and abroad (Field, 2008).

In 1948, after nearly 20 years of resistance, the New Zealand administration finally agreed to grant Samoa independence. This was a major victory for the Mau movement and for Samoan sovereignty, and it remains an important moment in Samoan history, becoming the first Moananui nation to become independent of European colonial rule (Alofaituli, 2017). The Mau movement was driven by a deep sense of national pride and a commitment to resisting colonial encroachment. Its leaders were inspired by the example of other anti-colonial movements around the world, and they were determined to fight for their country's independence and sovereignty.

Today, the legacy of the Mau movement remains an important part of Samoan national identity and pride. It is celebrated in song and story, and it serves as a reminder of the strength and resilience of the Samoan people in the face of adversity.

Mau Piailug

Mau Piailug³⁴ was a traditional navigator from the island of Satawal in Micronesia. He was born in 1932 and grew up in a Satawalese community where traditional navigation was practiced. As a young boy, Mau began learning the art of navigation from his grandfather, Raangipi³⁵, and father, Orranipul, who were both respected and skilled navigators. In one of Steve Thomas' accounts of Mau's childhood memories, Mau explains:

Those old navigators talked about navigation everyday.... It was a custom. I listened, listened to their stories of sailing to West Fayu and Lamotrek, Pikelot and Puluwat. Then, when it was time to sleep, I would lie beside my grandfather. He would always tell me that if I learned navigation I would have a name and people would respect me. I would eat the navigator's food and when I voyaged I would be higher than a chief. I listened and I thought 'Maybe to be a palu is good. Maybe I will learn navigation.'³⁶

According to Thomas, Mau received his nickname mau – which in Satawalese is the word for hawksbill turtle, which fisherman commonly used the shell to create fish hooks for bottom-fishing (Thomas, 1987, p117). Furthermore, Bill Jaynes interview with Mau's close relative and nephew, Tom Raffipiy, states that he received this nickname as the ripples of his muscles on his back were likened to the rough shells of hawksbill turtles³⁷ (Jaynes, 2010). In the same interview, Raffipiy goes deeper into the gifting of his nickname:

34 Birth name is Pius Piailug, but later became popularly named Mau Piailug, or Mau.

35 Name comes from the word "turmeric", which was the symbol for "light" in Satawalese cultures.

36 Thomas, The Last Navigator, p117.

37 Tom Raffipiy explains "The name was supposedly given to him to describe his uncanny physique which was then thought of as a physical defect. The ripples of muscles on his back were likened to the rough shells of hawksbill turtles. However he got the nickname "Mau" one can be certain that it was given out of love and affection as was the normal practice. Probably no one realized how the name would shape the character of the man who defied cultural belief to safeguard a dying art of Oceania – non-instrumental navigation." Jaynes, Bill and Raffipiy, Tom, *Legendary Master Navigator Pius "Mau" Piailug Sails on*. The Kaselehe Press. 2010

In his native Satawalese vernacular “mau” (Thomas, 1987)³⁸ means strong, strength, hard, hardened, and mature, among other definitions. Truly, Pius “Mau” Pailug lived up to the nickname given to him in his early adulthood.....

Mau was naturally strong and courageous. Mau would have been the first to admit that he might have not known as much “talk of the sea” as most navigators of his time did, but I knew him to have more courage and to be more fearless than any of them. Mau would never allow himself to doubt his decisions and navigational tactics and that served him well throughout his life. He thrived on challenges and rarely stayed on the land. He dedicated his whole life to voyaging and to teaching. That was his passion (Thomas, 1987).³⁹

Mau's knowledge of traditional navigation techniques was passed down through oral tradition and had been kept alive in his community for generations. He learned to navigate using only the stars, the ocean currents, and the behavior of birds a Mau's knowledge of traditional navigation techniques was passed down through oral tradition and had been kept alive in his community for generations. He learned to navigate using only the stars, the ocean currents, and the behavior of birds and sea life. He did not use maps or modern navigation equipment, relying instead on his own knowledge and instincts. He continued to hone his skills over the years, eventually becoming one of the most renowned navigators in the Pacific (Howe, 2007). In the 1970s, Mau became involved in efforts to preserve traditional navigation techniques and share them with the wider world. He was invited to teach navigation to a group of Hawaiians who were interested in learning traditional techniques. Mau spent several months in Hawaii teaching the Hawaiians, who would go on to form the Polynesian Voyaging Society and embark on a historic voyage across the Pacific on a traditional sailing canoe.

38 Mau is abbreviated from the vernacular word “maumau”, which means strong in common speech. An essential quality of a palu (Thomas, 1987; p294)

39 Thomas, 1987; p294





Figure 29

Mau Piailug using a star compass to teach his son navigation (Thomas, 1983).

Figure 30

Mau Piailug and Nainoa Thompson (Costa, 1998).

In the 1970s, Mau became involved in efforts to preserve traditional navigation techniques and share them with the wider world. He was invited to teach navigation to a group of Hawaiians who were interested in learning traditional techniques. Mau spent several months in Hawaii teaching the Hawaiians, who would go on to form the Polynesian Voyaging Society and embark on a historic voyage across the Pacific on a traditional sailing canoe.

Mau's teachings and his participation in the Polynesian Voyaging Society helped to revive interest in traditional navigation techniques and led to a renewed appreciation for Pacific cultural practices. He continued to teach navigation and share his knowledge with others throughout his life, becoming a revered figure in Pacific communities and an inspiration to others who sought to preserve and celebrate Pacific cultural traditions. Mau's legacy is significant not only because of his contributions to the preservation of traditional navigation techniques but also because of the larger cultural and political implications of his work. By sharing his knowledge with others, Mau helped to assert the importance of Pacific knowledge systems and challenge Western dominance in the field of navigation. His efforts to preserve and celebrate traditional practices were part of a larger movement towards decolonization and cultural revitalization in the Pacific. Mau is remembered as a pioneer in the revival of traditional navigation techniques and a symbol of Pacific cultural identity and resilience. His legacy continues to inspire and inform efforts to preserve and celebrate Pacific cultural traditions.

Kia Mau

Tina Ngata's "Kia Mau: Resisting Colonial Fictions" is a powerful call to action for Pacific Islanders to resist the ongoing impact of colonialism on their communities and to reclaim their cultural heritage. The essay was published in 2018 in the anthology "The Non-plastic Māori" and has since become widely read and celebrated as a testament to the resilience and strength of Māori and Moananui communities.

Ngata begins her essay by reflecting on the ways in which Moananui cultures have been appropriated and misrepresented by colonial powers, resulting in the erasure of Indigenous voices and the perpetuation of harmful stereotypes. Ngata goes on to argue that the ongoing impact of colonialism can be seen in the many challenges facing Pacific Islander communities today, including environmental degradation, economic exploitation, and the loss of cultural heritage.

However, Ngata is quick to emphasize that Pacific Islanders are not simply victims of colonialism, but rather active agents of resistance and resilience. She writes, "We are not helpless, we are not passive, we are not powerless. We have a history of resistance, of standing up against colonialism and fighting for our rights and our dignity" (Ngata, 2018).

Ngata's essay is a powerful example of the ways in which Pacific Islander communities are resisting the ongoing impact of colonialism and reclaiming their cultural heritage. Through her evocative language and passionate call to action, Ngata inspires readers to join in this important work and to fight for a more just and equitable future for Indigenous peoples affected by British racism, imperialism, colonization and militarism. In the final chapter, *Wetewetehia 250* (Ngata, 2018, p91), Ngata addresses the importance of "Ethical Remembering", calling upon audiences to contextualise commemorations from the perspective of Indigenous communities affected by the events to fully understand the complete historical and social context. To assist parents and teachers in this process of "Ethical Remembering", Ngata developed guidelines which were developed with rangatahi (youth) leading up to the Tuia 250 event. A summary of the guidelines are as follows:

1. Know the Story

The guideline highlights the need for decolonizing the understanding of New Zealand history and James Cook's voyages, which were not bloodless, but rather an exercise of imperial expansion that involved multiple murders, abductions, and brutal tortures. The story of the Doctrine of Discovery is imperative to understand, as it legally endorsed invasion, land theft, and slavery, fostering a societal psyche of imperial entitlement.

2. Understand and analyse languaging

Understanding the role of media in perpetuating racist stereotypes and colonial fictions around heroes is essential for decolonisation education. Using euphemistic language like "Encounters" and "Arrival" to describe colonialism masks and minimizes its crimes while demonizing Indigenous resistance. The arrival of armed military vessels to claim lands, killing people while doing so, fulfills all criteria of an invasion.

3. Focus on imperialism

Equipping future generations to identify and address imperialism is vital. The commemoration of James Cook's arrival should not erase the impact of imperialism and that it is an opportunity to address colonialism, imperialism, and their harmful impacts. Hitching cultural celebrations to colonialism can place the culture on the periphery and recentre the coloniser, which can be problematic for future generations facing ongoing white supremacy and settler colonial oppression.

4. Contextualise our story in the greater story of imperialism

The guideline suggests acknowledging the connections to other nations that have experienced imperial expansion besides New Zealand. It emphasizes the importance of understanding how the Doctrine of Discovery initiated the Trans-Atlantic slave trade and the expansion of empires across the African continent, North, and South America. However, it is important to undertake this discussion in an age-appropriate way and observe how the information is received as it can be a distressing history.

5. Address the colonial fictions inherent in discovery myths

Ngata identifies that imperialism and colonization rely on fictions in order to uphold power structures. Presented in this guideline are three mechanisms to dismantle their structure; Contemporise imperialism: Contextualising how imperialism has endured over time and continues to exist today; Connect imperialism: Highlight the “colonial template”, interconnected strategies employed through imperial forces throughout the Pacific and globally; and Criminalise imperialism: address physical and biological warfare as criminal acts that resulted in genocide and land theft.

6. Offer Hope

Discussing actions to resist imperialism and dismantle the Doctrine of Discovery focusses on promoting the Indigenous perspective and teaching about existing leadership. It highlights the importance of discussing the benefits of a post-Doctrine of Discovery future and exploring potential actions at various levels.

7. Prepare them for different points of view (even racist ones)

Emphasising the need to consider all perspectives, including those of Māori, white supremacists, and Hobson's Pledge, in the TUIA250 celebrations. It is crucial to analyze their arguments, find correlations, contrasts, and compare them to the opposition.

8. Discuss responsible accountability

It is important not to blame non-Indigenous people or Christianity for the harms of imperialism, but rather holding everyone accountable for speaking out against it. It also highlights the distinction between Christianity as a faith and Christendom as an alliance between church and state, which allowed monarchs to use divine right to justify their actions.

9. Promote ethical remembering

Lastly, Ngata argues that colonialism is upheld by fictions that justify its importance and beneficence. It is important to deconstruct these fictions and understand how they are systematically transmitted through statues, education, media, and events like TUIA250. The text encourages envisioning a more ethical

remembering of history to set a pathway for who we want to be in the future, and asks questions about what counts as "important" history and how painful histories should be remembered.

Ngata's call to action is grounded in the idea of "kia mau," a phrase from the Māori language that means "to hold fast." Kia mau is a call to action, a reminder that we must hold fast to our identities and our cultures, even in the face of tremendous adversity.

Mau – Creative Sovereignty

Lemi Ponifasio's Talanoa Mau, held at the Auckland Arts Festival in 2020, was a multidisciplinary space for dialogue and exploration of the most pressing issues of the modern day. The exhibition included visual art, performance, and written works, and sought to engage with the ongoing impact of colonialism and imperialism in Moananui communities.

Talanoa MAU, a series of public discussions and workshops that aimed to facilitate dialogue and exchange between artists, scholars, and community members around the themes of the exhibition. Through Talanoa MAU, Ponifasio created a space for Moananui voices to be heard and for diverse perspectives on pressing challenges to be shared and explored. The discussions and workshops covered a wide range of topics, from the history of the Mau movement to the contemporary challenges facing Pacific communities in the fight against colonialism and imperialism. One key theme that emerged from the discussions was the importance of understanding the ongoing impact of colonialism on Pacific cultures and communities, and the need for continued resistance and activism to address these issues. Another important aspect of Talanoa MAU was the focus on the role of art and culture in the struggle for justice and freedom. Through their exploration of traditional Samoan dance, music, and visual art, Ponifasio emphasized the power of art and cultural engagements to “transform and illuminate who we are and how we move through the world – both alone and together, as individuals, as collectivities, and as peoples” (Ponifasio, 2020; p4). Ponifasio's translates Mau as “a state of clarity and conscious engagement with existence, a truth instantiated, a reality experienced” (Ponifasio, 2020). This translation of Mau has been further developed by Lana Lopesi through a Moana arts perspective.

Lopesi's describes Ponifasio's translation of mau as tino rangatiratanga, or sovereignty (Lopesi, 2021, p148). Sovereignty in the context of Talanoa Mau, and Moana arts, is about the sovereignty over one's ideas, thinking, and positionality (Lopesi, 2021). Mau in this context, is defined as creative sovereignty.⁴⁰ In her account of Mau, Lopesi highlights the concept of creative sovereignty, which refers to the ability of Pacific artists and cultural practitioners to assert their own creative agency and challenge the dominant narratives that have historically erased their voices and experiences.

Through their commitment to creating spaces for Moana voices to be heard, Lopesi and Ponifasio promotes the concept of Mau as an ongoing struggle for Moana peoples to assert their sovereignty and maintain their cultural identity in the face of colonialism and globalization. They emphasise the importance of decolonization and the regeneration of Indigenous knowledge systems in Moananui communities. By foregrounding the voices of Pacific artists and cultural practitioners, Lopesi and Ponifasio show how they are reclaiming their own stories and using their creative practices to resist dominant narratives and assert their own agency.

The legacy of the Mau has inspired other movements for self-determination and independence across Moananui, highlighting the enduring power of Moananui communities to resist outside forces and protect their way of life. Beyond its historical significance, the concept of Mau remains an important aspect of Moananui cultures today. It represents the ongoing struggle of Moananui communities to assert their identities and resist cultural assimilation, as well as their commitment to building a more just and equitable future for all.

The concept of Mau continues to be a symbol of strength, perseverance, sovereignty, and cultural pride in Moananui. It represents the power of Moananui communities to shape their own destinies and resist outside forces, making it a truly inspiring and meaningful concept for all who call the Moananui home.

⁴⁰ Lopesi likens Mau to the concept of creative sovereignty, a term used by Metis art critic and educator David Garneau on how Indigenous art, practice and forms relate to each other outside of the colonial imaginary to "attempt new knowledge, new feelings, new sensations, thoughts and intuitions and new identities." (Garneau, 2018)



Figure 31

Poster of the Talanoa Mau, the NZ Festival of the Arts, 2020. A festival that opened the conversation to creative sovereignty and critical discussions of arts and identity.

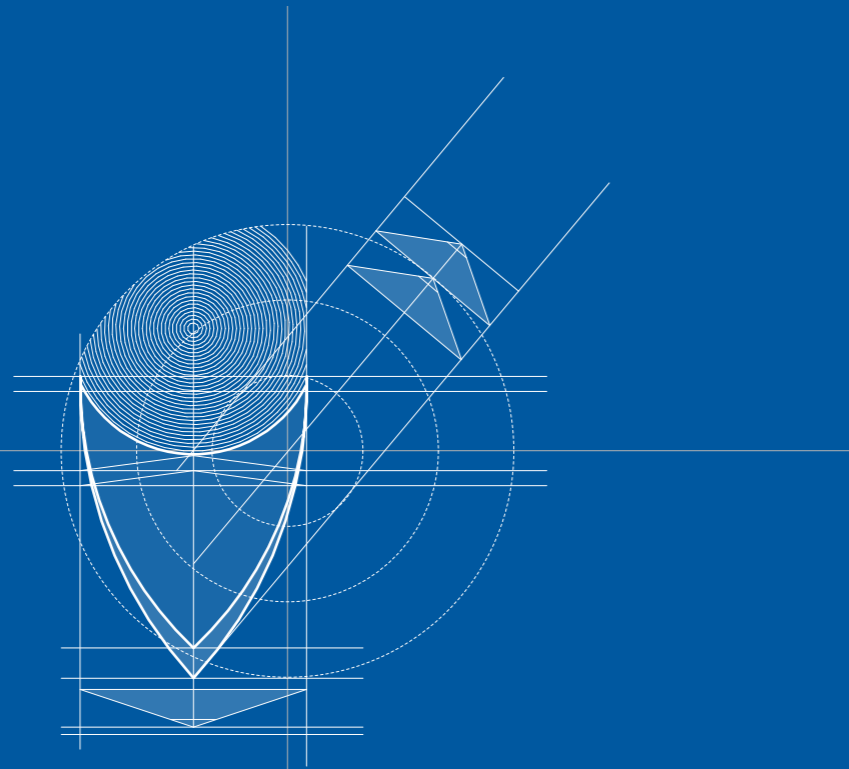
VĀ MOANA

Framework

The Vā Moana framework embodies the interconnectedness Moananui people's and place, emphasizing the nurturing and sustaining of relationships (vā) between individuals, communities, and their environment. Drawing on the foundational concepts of teu le vā (caring for the relational space), tauhi vā (maintaining and preserving relational space), and tā-vā (the interplay of time and space), Vā Moana offers a holistic approach to understanding and enhancing the bonds within Moananui cultures.

At its core, Vā Moana is not merely a theoretical construct but a practical framework that empowers users to actively engage with and foster the vā that defines their existence. By integrating teu le vā, the framework encourages a continuous, mindful effort to care for and enhance the relationships that are crucial to communal and environmental well-being. Tauhi vā reinforces this by advocating for the maintenance and respect of these connections, ensuring that they are preserved and strengthened over time. Tā-vā introduces a dynamic element, acknowledging that relationships evolve in a temporal and spatial context, and that understanding this evolution is key to sustaining the vā. This aspect of the framework enables users to appreciate the changing nature of relationships and adapt their approaches to nurture these bonds effectively.

Vā Moana is particularly significant in guiding users to honour and sustain the vā within Moananui regenerative systems, ensuring that their actions are aligned with the values and needs of their community and natural surroundings. By adopting Vā Moana, individuals and groups are equipped with a culturally resonant, ecologically sensitive approach to nurturing the vital connections that underpin their identity, culture, and well-being, ensuring these relationships flourish for generations to come.



VĀ MOANA

Purpose

To nurture and care for relationships that fosters the interconnectedness of people and place. It draws on concepts such as *teu* (to care for), *tauhi* (to maintain), and *ta* (time, action) to foster a deep respect and responsibility for these relationships.

Outcomes

- Place-based and Indigenous relational values are respected and integrated as foundational to development projects.
- Indigenous and local communities feel a greater sense of collective ownership and sense of belonging to the project location and place.
- Indigenous practices are sustained that honour and encourage the relationship between people and the natural environment.

Potential Design Deliverables

- Stakeholder Guilds, or community stakeholders and community mapping exercises are developed and illustrated to demonstrate relationships.
- Stakeholder and community aspirations are uplifted and integral to the design outcomes.
- Indigenous and local community relational values-systems are identified integrated into the project.

Moananui definitions of Vā

Maori-Polynesian comparative dictionary (Treagear, 1891)

Māori - local extension; distance; definite space; interval; a region. Cf. takiwa, an interval of space; tawà, a ridge; tiriwà, to plant at wide intervals; wawae, to part, to separate; wahi, a part, a portion; to divide; waha, a region; the mouth; awa, a river; a channel. 2. An indefinite interval; unenclosed, open country. Cf. waho, outside. 3. The time, season, or space in time: Ka tata te wa e puta ai aia ki waho—A. H. M., i. 149. Cf. takiwa, an interval of time. 4. To be far advanced.

Samoa - va, a space between; to have a space between: A ia fai se va a'í outou ma le atolaau; There shall be a space between you and the sacred thing. (b.) A noise; (c.) to rival; vavaga, to quarrel; fa'a-va, to cause a rivalry; fa'a-vava, to cause a space between. Cf. vāiaso, a part of a day; vasa, the ocean, especially the space between two points of a journey; vanu, a valley; a ravine; a chasm; vateatea, wide; clear; vātele, wide; vāvāloa, the wide ocean; vāvāmamao, far apart; māvava, to yawn; tavava, to be open, as a door; ava, an opening in the coral reef; to be wide apart, as the planks of a canoe not fitting; vāgana, to resound; vāvāò, a confused noise; vāuliuli, to be wide, to be spacious; vae, to divide.

Tahitian - va, (obs.,) space in time: E pau va arere; Let the period of messengers cease: E te va orero reo; It is the time of the speaker. (b.) The space between the edges of the layers of thatch in Tahitian houses; (c.) the rushing down of the rain that comes suddenly and is soon over; vava, the sound or noise of wind or rain, or the agitation of water at la distance; (b.) dumb; unable to speak plainly; a mute person; (c.) an ominous hog; when put on the altar, the ears appear as if listening; this is a bad omen; haa-va (haavà), a judge; (b.) to examine the ground of a charge; to pass a judicial sentence. Cf. tavava, a crack or splitting by the sun; to split in the sun; vaha, the mouth; vahi, to open, to split; vata, an opening, a rent; vae, to share out or divide food, &c.; vanaa, an orator; one fluent in words; vaoo, to interpose; varavara, thin, scattered; not close together.

Hawaiian - wa, space between two objects, as between two rafters or posts of a house; (b.) a space between two points of time: O kela mai ka mea e uuku ai na kanaka o ia

wa; That sickness was what reduced the people at that period. (c.) A definite portion of time, as the lifetime of a person. (d.) A situation without friends or connexions, as ku i ka wa, independent; (e.) private talk or gossip concerning the characters of others; (f.) to reflect, to think, to reason: He aha ka oukou e wa iho nei ia oukou iho? Why do you reason among yourselves? (g.) To seek to know; to wish; (h.) to say to oneself; to ponder; to resolve in one's mind; to consider; (i.) to hit, as a stone hits a mark; hoo-wa, to sicken; to make sick; wawa, a tumult; vain, babbling, foolish talking; noisy on account of great multitudes; confused noise: Aole wawa loa kai a ke ana oku; Never very noisy is the sea of the sacred caves. Cf. waha, a mouth; an opening generally; manawa (M.L. = manga, wa), a time, a season; a space between two events; a space between two localities; kowa, a vacant space between two things, as the space between the fingers or toes;

Tongan - va, a laughing noise; to laugh and make a noise; (b.) the space or distance between two given objects; vava, the space or distance between two objects; faka-va, play, sport; to play, to sport; vagavaga, open; spaced. Cf. vatau, a quarrelling; a noise of wrangling; vavalu, a note of alarm from old fowls; vake, an uproarious noise; valau, noise, uproar; valo, to talk or shout at random; vago, to talk, to chatter on whilst none care about it; vaa, a branch, a bough; vaavaa, open; large in the meshes; vae, to divide a fish longways; vahe, a division; to separate; vaha, space at sea; vamamao, distant, vaata, open; a, a wall; ava, a hole; mavava, a general shout; acclamation.

Rarotonga - aka-va, judgment; to adjudicate.

Vā, across Moananui cultures, embodies a complex interplay of spatial, temporal, and relational dimensions, manifesting in varied but interconnected ways across different societies. In Māori, Wā connotes local extension, distance, and intervals, both in physical spaces and in time, highlighting a nuanced understanding of space as both a physical and temporal entity. Similarly, in Samoan culture, "Vā" encompasses the space between objects or people, as well as the concept of rivalry and division, suggesting an awareness of the importance of maintaining balance and harmony within social relations. The Tahitian interpretation adds to this definition by associating "Vā" with specific periods or moments in time, spaces within architectural structures, and even the suddenness of natural phenomena, such as rain. This multifaceted understanding is echoed in Hawaiian, where "Vā" ranges from physical spaces between objects to metaphorical spaces between individuals or events, encompassing a broad spectrum of meanings from personal reflection to social gossip. Tongan and Rarotongan interpretations further expand on this concept by incorporating aspects of noise and judgment, respectively, indicating the role of "Vā" in mediating both communication and social order.

Across these cultures, "Vā" emerges as a foundational element in shaping both the physical and social fabric of Moananui societies. Despite the diversity of meanings and applications, a common thread lies in the recognition of "Vā" as a space that is both physical and symbolic, bearing significance in terms of social relationships, communication, and the passage of time. This shared understanding underscores the interconnectedness of individuals with each other and with their environment, where "Vā" serves not only as a measure of distance or interval but as a dynamic space of interaction, reflection, and relation. The emphasis on balance, harmony, and the careful navigation of social and physical spaces reflects a profound respect for the interconnectedness of all aspects of life, illustrating the deep-rooted significance of "Vā" in fostering communal well-being and individual thoughtfulness within Moananui cultures.

The reimagination of "Vā" across Moananui cultures presents an understanding of space and relationships that transcends the physical, encompassing spiritual, social, and ecological dimensions. In Albert Wendt's essay 'Tatauing the Post-Colonial Body' (1996) has been foundational and inspirational in the understanding of Vā in a Moananui context. He describes "Vā" as a space of connection and relation, emphasizing its role in communal societies where relationships are cherished and maintained with care. He writes:

Va is the space between, the betweenness, not empty space, not space that separates but space that relates, that holds separate entities and thin the space that is context, giving meaning to things. The meanings change as the relationships/the contexts change (Wendt, 1996, p.19).

This perspective is echoed by Le Tagaloa (2003), who articulates "Vā" as an omnipresent principle governing all aspects of life, highlighting its significance in defining relationships, responsibilities, and social standings within Pacific communities. She adds, "It (Vā) governs all things and holds all things together.... Vā is relationship, connection, space, distance, responsibility, obligation, state of being, position, standing, and so much more." (Le Tagaloa, 2003, p.8) These definitions collectively underscore Vā not as mere emptiness or separation but as a dynamic space that binds individuals, communities, and the natural world in a cohesive unity, emphasizing the necessity of nurturing and valuing these connections. Building on this foundational understanding, Tevita O. Ka'ili (2008) expands the concept of Vā by stating "Vā as a 'space that relates' is an important insight [as] it portrays vā, in a social sense, as both relationship and space". In this way, Ka'ili expands vā into the realm of social space and transnational relations, particularly among Tongans in the diaspora. This adaptation of "Vā" illustrates its flexibility and relevance in contemporary and often diaspora settings, facilitating a reimagined sense of community and connectedness that transcends geographical boundaries. Similarly, Mila's exploration of Vā emphasizes its multidimensional nature, integrating the unseen spiritual world into the fabric of daily life and challenging secular-centric worldviews. This broader, more inclusive notion of "Vā" reveals its pivotal role in Pacific epistemologies, where the interconnectedness of the human and nonhuman, visible and invisible, underscores a cosmology rooted in reciprocity and mutual respect. Mila states:

At the core of Pacific epistemological is that va/wa is not only understood to be multidirectional with a precedence for reciprocity flow, but it is also understood to be multidimensional which requires engagement for the unseen, the world of the spirits. This necessitates that there is va between what is human and nonhuman, collapsing the way that we routinely place ourselves at the center of a secular universe.

From a spatial and living systems perspective, Refiti highlights Vā as an organizing principle, fundamental in establishing the relationships between people, objects, and territories, emphasizing its role in structuring social and spatial order (Refiti, 2014, p. 18). This principle of interdependence, where entities gain meaning through their relations with others, serves as a critical reminder of our collective responsibility to uphold and nurture these connections. Refiti's essay "How the Tā-Vā Theory of Reality Constructs a Spatial Exposition of Samoan Architecture" further describes vā in an illustrative "vā ideal schema" as a series of rings that are interrelated, reflecting the relational systems that exist in Samoan living systems.

1. Va Tapua'i

The innermost ring is a sacred space reserved for the ali'i elites and their "circle of fa'amatai." This circle serves as a "prayer circle" where commands are issued, and the elites exhibit their sacred status through immobility, reflecting the belief that higher mana (spiritual power) necessitates less physical movement. Objects of material production are brought into this circle to be transformed into prestige goods through the praises and songs of the chiefs and community, symbolizing their transition from ordinary items to valuable gifts for exchange and redistribution.

2. Vā Feagai

Encircling the first, the second ring is inhabited by the tulafale or orators. The orators serve as companions and assistants to the chiefs, facilitating the execution of commands from the inner circle. The tulafale hold significant authority, including a village-wide policing role and the responsibility for reallocating wealth. Their position within this ring symbolizes their pivotal role in maintaining social order and redistributing resources, underlining their powerful stance within the Samoan political hierarchy.

3. Vā Feloaloa'i

The outermost ring, encompassing the first two, is dedicated to the aumaga/aualuma, the young, able-bodied segment of the population tasked with

labor and the transformation of raw materials. This zone represents the "vā feloaloa'i," where the dynamics of work and production are most visible. Here, the young men and women engage in activities crucial for the community's sustenance, such as farming, cooking, and crafting, highlighting their role as the backbone of societal labor. This ring is characterized by physical movement and the transformation of materials, embodying the principle of "tā" in Samoan thought—where action and motive power converge to produce and refine essential goods for the community.

In essence, Vā represents a rich, complex tapestry of relationships that form the backbone of Moananui cultural systems, advocating for a worldview that acknowledges the intrinsic value of every being and their place in society. Lana Lopesi, in her thesis, 'Moana Cosmopolitan Imaginaries' (2021) articulates Vā Moana as a "geographic space that is relational, rooted and routed, physical and digital all at once." (Lopesi, 2021, p. 119) These imaginaries are not isolated but are deeply interconnected with various elements such as homelands, diasporic homes, other Moana communities, global Indigenous groups, and broader communities of color. The essence of Vā Moana lies in its ability to encapsulate these myriad relationships, creating a web of connections that are simultaneously tangible and abstract, personal and communal, traditional and contemporary. More specifically, the inspiration to this framework is quoted by Lopesi in her thesis:

Thus, vā offers a relational and spatial framework embedded in Indigenous knowledge through which we can imagine a Moana relational geography, or what I am calling here Vā Moana (Lopesi, 2021, p. 27).

Building upon the concepts developed by Lopesi and scholarly thought presented above, Vā Moana is presented here as a spatial framework that is deeply embedded in Moananui Indigenous knowledge, offering a unique perspective through which the interconnectedness, or Vā, of Moananui peoples with their environment and each other can be understood and appreciated. This framework transcends conventional geographic boundaries, incorporating digital spaces and diasporic experiences to highlight the fluid and evolving nature of Moananui identities and connections. Vā Moana thus serves as a

critical tool in understanding and articulating the complex, interwoven relationships that shape Moananui communities, both within Moananui and in the broader context of global indigeneity and diaspora.

Teu

Albert Wendt emphasizes the importance of nurturing relationships through the Samoan principle "teu le va," highlighting the essential role of care and attention in maintaining the fabric of communal life. This principle, deeply rooted in the concept of "Vā," highlights the intrinsic value placed on connections among people, creatures, and objects, recognizing them as essential elements of a cohesive group dynamic. Wendt (1996) encapsulates the essence of "Vā" as a fundamental framework through which communal societies understand and prioritize their relational bonds.

Melani Anae (2010) further explores the nuanced dimensions of "Vā" in Samoan culture, providing a detailed examination of its role in shaping identity and social interaction. She delineates various aspects of "Vā," including "va fealoa'i" (spaces between relational arrangements), "va tapuia" (sacred spaces of relationship arrangements), and "teu le va" (the act of valuing, nurturing, and maintaining these spaces). Anae states "The Samoan self is described as reliant on relationships that are occurring in the va, or space between. Samoan discourses on the va, va fealoa'i (spaces between relational arrangements), va tapuia (sacred spaces of relationship arrangements) and teu le va (to value, nurture, look after, and if necessary, to tidy up the va) are covered comprehensively." (Anae, 2010, p.12) Her analysis reveals the critical balance between the sacred and the social within Samoan society, underscoring the notion that the self is fundamentally relational and dependent on the maintenance of these sacred and social spaces.

By highlighting the multidimensional aspects of "Vā," both Wendt and Anae advocate for a conscious and deliberate engagement with the spaces that connect us. The principle of "teu le va" serves as a call to action, urging us to cultivate and preserve the bonds that form the fabric of communal life. This approach not only enriches individual and collective well-being but also honours the intricate web of relationships that define and sustain communal cultures. Through this lens, "Vā" emerges not just as a theoretical

concept but as a living practice, embodying the collective responsibility to ensure that all relationships—whether spiritual, social, or ecological—are nurtured and respected.

Tauhi

Tauhi Vā, as described by Tevita O. Ka'ili, (2005, 2008, 2017) encapsulates the art of fostering and sustaining harmonious social relations (vā) through the mutual fulfillment of social obligations (fatongia). This concept transcends the act of mere preservation, extending to the careful maintenance of relationships and the spaces between individuals and communities. Hau'alofo'ia Koloto expands on this, noting that "tauhi" signifies the act of caregiving, whether towards individuals, objects, or places, reinforcing the ethos of stewardship inherent in this concept (Hau'alofo'ia Koloto, 2016, p. 1).

Thaman (2003, 2008) champions "tauhi vā" as a cornerstone for intercultural understanding and societal peace, proposing it as a framework for learning to coexist by appreciating diverse cultural narratives within a society. This framework recognizes the critical importance of nurturing interpersonal and intergroup connections and responsibilities, offering a pathway to more empathetic and unified communities. Additionally, 'Ilaiu Talei (2023) explores how "tauhi vā" informs the physical and relational architecture of spaces, such as the Tongan fale, where social relationships are "nurtured, adorned, and perpetuated," illustrating the tangible manifestations of these values in social and cultural structures.

Both Samoan and Tongan traditions emphasize the significance of care and nurture through "teu le va" and "tauhi va," respectively, underscoring the profound connection between social practices and the physical spaces they inhabit. These concepts serve as a testament to the essence of "vā", how binding individuals and communities, urges a collective commitment to fostering and cherishing the relational spaces that unite us.

Tā

'Okusitino Māhina developed a comprehensive theory grounded in the Moana concepts of tā (time) and vā (space), known as the Tā-Vā theory of Reality (Māhina 2002a, 2003b, 2004a, 2004b, 2005, 2007; Māhina, Ka'ili, & Ka'ili 2006). This theory, which articulates the interconnectedness of nature, mind, and society, asserts that while these elements are distinct, they are all inherently embedded within the natural world. Māhina's framework positions tā and vā as foundational to understanding Moananui reality, emphasizing that mind and society, though conceptualized separately, are intrinsically part of nature (Māhina, 2007).

Māhina views tā and vā as critical to the Tongan artistic practice, where art is seen as a harmonious and rhythmic reorganization of time and space (Māhina, 2010). Similarly, Albert Wendt explores the significance of tā and vā in the Samoan tradition of tatau (tattooing), where tā signifies the act of striking, a fundamental part of the tattooing process (Wendt, 1999). Refiti further expands on this by illustrating how ta-tatau transcends physical artistry to represent a dynamic interaction with space and relationships, embodying a Moananui understanding of spatiality that is deeply relational and reciprocal. This action, beyond its physical manifestation, symbolises a deeper connection between the individual and the broader cosmos, encapsulating the essence of tā-vā. As described in his essay, 'The Forked Centre: Duality & Privacy in Polynesian Space & Architecture', Refiti expands on this idea on porous space:

Ta-tatau (tattoo) allows the opening up of the body and connecting it to the folds of the horizon of va relationships. It activates the body so it can look both ways, in side out or outside in. I am hinting here at how such a porous boundary that Gell proposes can be the locus of a way to think about space. A foundation of boundaries that demarcate space, that mark the break between a private/public being, is an absolute moment of duality of doubling where the boundary that 'looks inside out and outside in' obliterates the boundary itself. This is what I suggest is central to Pacific notion of space and how space is contingent on va relationships (Refiti, 2008).

The tā-vā theory offers a nuanced perspective on Moananui worldview, illustrating how tā (time) and vā (space) are not merely abstract concepts but integral to the cultural, social, and spiritual fabric of Moana communities. This theory underscores the importance of acknowledging and honoring the interconnectedness of all aspects of reality, from individual identity to collective history, and the intrinsic value of maintaining a balanced relationship between tā and vā in every aspect of life.

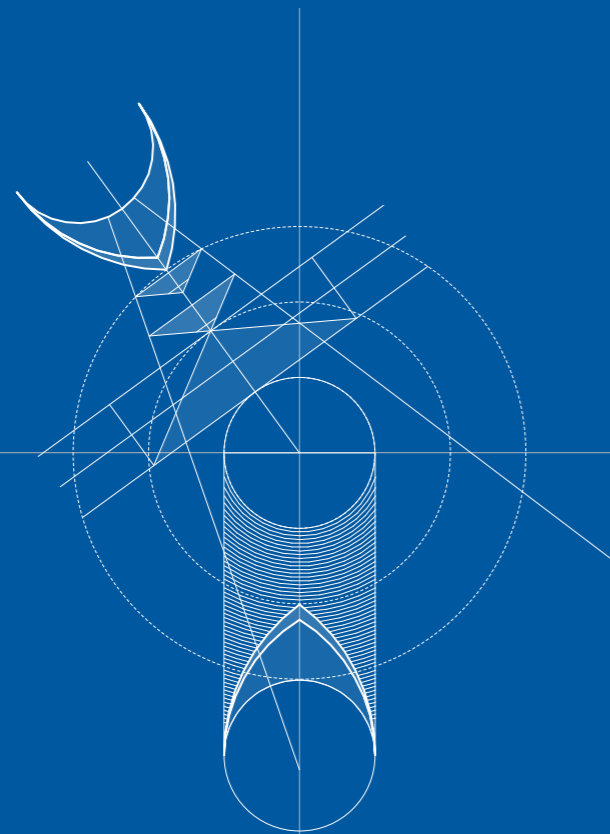
MAURI MOANA

Framework

The Mauri Moana framework presents a comprehensive approach to understanding and enhancing the socio-cultural-ecological well-being of Moananui peoples and their environments. At its core, this framework integrates the fundamental concepts of mauri, hau, wairua, and ora, which are crucial to Moananui ontologies and cultural practices. Mauri, as the life force that binds the physical and spiritual realms, provides a foundation for this framework, emphasizing the interconnectedness and inherent sanctity of all forms of life within the Moananui context.

Hau, often described as the vital breath or wind, represents the unseen energies that circulate within and between living beings and the environment, thus maintaining the balance and vitality of ecosystems. Wairua, the spiritual dimension, connects individuals not only to each other but also to their ancestors, reinforcing a continuum of life and spiritual presence that transcends temporal boundaries. Ora, encompassing overall well-being, health, and vitality, serves as the goal of the Mauri Moana framework, advocating for holistic health that extends beyond the individual to include the broader ecological and spiritual health of the community and its surroundings.

The Mauri Moana framework is particularly instrumental in promoting regenerative practices that not only preserve but enhance the vitality of Moananui ecosystems. By embedding these Indigenous concepts into modern environmental management and cultural practices, the framework fosters a deep understanding of the reciprocal relationships between people and their natural environments. This encourages sustainable interactions that regenerate and revitalize life forces, ensuring that both the land and its people can thrive. In practice, Mauri Moana assists users in making decisions and implementing actions that are aligned with the principles of ecological sustainability, cultural integrity, and spiritual health, thus perpetuating a cycle of renewal and vitality that is crucial for the long-term resilience of Moananui communities and their natural habitats.



MAURI MOANA

Purpose

The Mauri Moana framework is designed to integrate traditional Moananui ecological knowledge with contemporary environmental management practices to regenerate and sustain the vitality and essence of Moananui ecosystems and communities.

Outcomes

- Natural ecosystems are revitalised through regenerative and Indigenous practices to ensure ecological resilience.
- Cultural practices that revitalise the mauri of place are conserved and transmitted to the future generations.
- The social-cultural-ecological well-being of Moananui places are revitalised by enhancing the capacities of both people and place.

Design Deliverables

- Sites of spiritual significance are meticulously mapped and enhanced through context-sensitive designs that elevate their sacredness and accessibility.
- Key ecological sites are identified and actively regenerated, integrating them as vital, functioning elements of the overall environmental design.
- Cultural narratives and identifiers are deeply embedded within design strategies, serving as both the foundation and the driving force behind all design outcomes.

Moananui definitions of Mauri

Maori-Polynesian comparative dictionary (Treagear, 1891)

Māori - the heart, the seat of the emotions; also mouri: Na, i waenganui po ka oho te mauri o taua tangata—Rutu, iii. 8. 2. Poles of mapou wood, used in the pure ceremony; also called tokomauri. 3. A small stick used in divination to ascertain the fate of an attacking party. 4. A sacred offering; sacredness, as of hair when cut and fastened to a stone, which then became tapu. 5. Life; the seat of life; also sometimes personified as “The Guardian of Life”: Ka mutu tera karakia ka timata te karakia ki nga mauri—A. H. M., i. 34. 6. The soul: Tena te mauri ka whakakake—A. H. M., i. 39. 7. The incantation used at the close of the pure ceremony, commencing “Ai tena te mauri, te mauri ka noho”—G. P., 420. 8. The twenty-eighth day of the moon's age. Cf. maure, the thirteenth day of the moon's age.

Samoa - mauli, the heart (a rare word). Cf. maùli, the moon.

Tahitian - mauri, a ghost or departed spirit.

Hawaiian - mauri, a ghost or departed spirit.

Tongan - mauli, a midwife; to practice midwifery.

The concept of "Mauri" across Moananui cultures, although varied in application, fundamentally resonates with themes of life, spiritual essence, and connectivity to both the physical and metaphysical realms. In the Māori tradition, "Mauri" represents a multifaceted concept encompassing the heart and emotions, life's sacredness, the soul, and specific ceremonial practices linked to the pure ceremony, divination, and the cyclical nature of life as reflected in lunar phases. This breadth of meaning highlights a deep-seated belief in the interwoven nature of life, spirituality, and the environment, where objects, days, and rituals become imbued with a sacredness that connects the physical to the spiritual.

Comparatively, in Samoan, Tahitian, Hawaiian, and Tongan cultures, while the term may differ slightly in spelling and pronunciation (e.g., "mauli" in Samoan and Tongan), there remains a thematic throughline of life, spiritual essence, and the transition between realms. The Samoan "mauli" as the heart or moon, Tahitian and Hawaiian "mauri" referring to ghosts or departed spirits, and the Tongan "mauli" relating to midwifery, all speak to the centrality of life force, spiritual transition, and renewal. Despite the diverse applications of the term across these cultures, the underlying similarity lies in the recognition of a vital essence that transcends the mere physical, connecting individuals to broader cosmic and spiritual cycles. This shared conceptual foundation suggests a profound regional understanding of existence where life, death, the soul, and the universe are intrinsically linked, reflecting a holistic worldview that honors the continuum of life and the invisible forces that shape existence.

Mauri, as articulated within Māori ontologies and broader Moananui cultural systems, serves as a pivotal concept that underscores the profound interconnectedness and vitality inherent in all entities, animate and inanimate. This essence of life and vitality, as described by Yates (2021), is not merely a philosophical abstraction but a tangible principle that informs the worldview and cultural practices of the Moananui peoples. The insights from Māori theorists, including Marsden's emphasis on mauri as a binding force (Royal, 2003), Smith's identification of mauri with ecosystem vitality (Smith, 2012), and Durie's portrayal of mauri as a network of relationships (Durie, 2001), collectively underscore mauri's integral role in shaping the symbiotic relationships between humans and the natural world, highlighting a cultural ethos where every element is viewed as part of a dynamic, interdependent system. This is further by Henare (2001) when he restates an account of a kaumatua:

He acquaints us with mauri, which he describes as an interactive life force. He states another fundamental Māori understanding of the purpose and the source of life itself that has metaphysical, psychological, and philosophical implications. He informs us that mauri, having been imbued in the embryo at conception, interacts with Mother Earth's forces, the immediate source of life. The land is the nurturing source of human physical existence, just as the placenta is for the newborn child (Henare, 2001, p. 207).

The varied definitions of mauri, spanning from its representation as the essence and expression of mana atua to its presence in all living and non-living entities (Marsden, 2003; New Zealand Māori Language Commission, 2008; Moorfield, 2011; Pomare et al., 2023), reflect a nuanced understanding of life force that transcends mere physical existence. The reciprocal relationship between humans and the environment, as outlined by Pomare and colleagues (2023), illustrates how human actions can either degrade or enhance the mauri of the natural world, which in turn affects human wellbeing, underscoring a moral and ethical imperative to uphold the sanctity and vitality of the natural world.

Furthermore, the concept of Ora, as expounded by Yates (2016, 2019, 2021), extends the discourse on mauri by framing it within a holistic perspective of wellbeing that encompasses the entirety of life's spectrum, from individual health to the vibrancy of ecosystems. This perspective, encapsulating the principle of Mauri Ora, advocates for an all-encompassing approach to wellbeing that recognizes the interdependence of human, environmental, and cosmic health. Such a viewpoint not only enriches our understanding of Moananui cultures but also offers vital insights into sustainable living and the intrinsic value of maintaining harmony within the tapestry of life, advocating for a worldview where every entity's mauri is honored, preserved, and celebrated.

Henare and Yates' contributions to the conceptual framework surrounding Mauri, particularly in relation to hau, wairua, and ora, are instrumental in articulating a nuanced understanding of the interconnectedness of life forces, as seen through the lenses of. Henare's work is renowned for delving into the Māori worldviews, offering profound insights into the essence of hau—the vital breath or wind of life—and wairua, the spirit or

soul, which together with mauri, form a foundational triad in Māori metaphysical thought. These concepts, pivotal in understanding the dynamics of life and interconnectivity, resonate with Yates' explorations of mauri and ora, where ora encapsulates holistic wellbeing and vitality, extending beyond individual health to encompass the wellbeing of the entire cosmos. The Mauri Moana Framework stems from the work of Henare, Yates, and scholars aforementioned, with the following quote from Henare being foundational to the developmental process:

In Māori cosmological thought, the mauri, together with tapu, mana, hau and wairua, came from Io, the Supreme Cosmic Being that existed before Sky Father and Earth Mother and from which emanates the cosmos we know and understand. The land as the system of ecological interactions is a placenta that nurtures and sustains humanity. Humans reciprocate in special obligatory roles both to the source of their life and to the "placenta" or ecology that nourishes them. (Henare, 2001, p207)

Hau

Henare's (2001) work articulates hau as the vital essence or life force that pervades the natural world, inherently linked to mauri, the principle that animates all living and non-living entities. This conceptualization emphasizes the necessity of preserving and enhancing the life force through positive actions, reflecting an ethic of care and respect for rivers, lakes, oceans, forests, and mountains. By defining hau as a vital principle essential for the well-being and vitality of the natural environment, and mauri as the active life principle that sustains physical existence, these concepts together underscore the integral role of humans in nurturing the natural world.

Henare further elucidates hau as the breath of life, akin to the wind, representing the manifestation of this life force, highlighting its significance as a cosmic power that imbues all entities with vitality. This understanding of hau, as Johansen describes, offers an expansive perspective on its function within the ecosystem, emphasizing its capacity to influence the entirety of life. The relationship between mauri and hau, akin to the bond

between tapu and mana, illustrates how hau, like wairua, serves to protect and sustain life, underpinning a spiritual and reciprocal relationship with nature.

This interconnection between hau and mauri reflects an ethic of obligatory reciprocity in human-nature relationships, advocating for a stewardship that acknowledges and respects the sacredness and vitality inherent in the environment. Henare's insights into hau and mauri present a compelling framework for understanding the deep spiritual bonds that link humans to the cosmos, urging an approach to environmental guardianship that is rooted in the principles of care, respect, and sustainability, vital for the preservation of life's essence across all dimensions of the natural world.

Wairua

Māori understand wairua as the spiritual dimension that permeates existence, embodying an essential aspect of life that transcends the physical realm (Valentine et al., 2017). Henare (2001) highlights the dynamic relationship between wairua and the body, noting that while wairua can exist independently of its physical counterpart, it is intrinsically linked, destined to reunite. This connection mirrors the symbiotic relationship between mauri and hau, where mauri serves as a sanctuary for hau, just as wairua safeguards the body, encapsulating a profound interdependence within the spiritual and physical worlds. Valentine et al. (2017) further expands on wairua's encompassing nature, illustrating its timeless connection to all facets of existence, including the ancestral past and the boundless future, thus positioning wairua as a transcendent force that defies the limitations of space and time. After a series of interviews with Māori, the essence of wairua is described through several themes in the journal 'Whakairia ki Runga: The many dimensions of Wairua', the themes being: 1) Wairua is foundational, 2) Wairua knows no boundaries, 3) Wairua is perceived sensation, and 4) Wairua is relational. The themes emphasise wairua as an omnipresent and interconnective quality within the Māori worldview.

The centrality of wairua to the Māori conception of reality and well-being is underscored by the teachings of Māori Marsden, who declared the ultimate reality for Māori as the realm of the spirit (Royal, 2003), and Sir Mason Durie's assertion that spiritual awareness is indispensable for true well-being (Durie, 1985). These perspectives advocate for a holistic understanding of existence where wairua is not an abstract concept but a vital

component of life's essence, emphasizing the need to acknowledge and nurture the spiritual dimensions that underpin the mauri of all beings and the universe itself.

Ora

The concept of ora, as defined by Williams (2006), encompasses the states of being alive, well, and safe, embodying a comprehensive view of life and well-being. For Māori, ora signifies more than mere survival; it represents a holistic understanding of life, health, and well-being that is deeply embedded in Indigenous ontologies. Yates (2019) elaborates that this worldview perceives the world, te Ao, as vibrantly alive and fundamentally interconnected, challenging the restrictive dualisms of modernist thought that separate life from non-life and life from death.

The notion of hauora, which Wolfram et al. (2019) describe as health and vigour, further complements the concept of ora by emphasizing a state of being fit, well, healthy, and in good spirits. This integration of ora and hauora within the Māori cultural framework illustrates a unique approach to well-being that transcends human-centric considerations, advocating for a harmonious relationship with all entities in the natural world. Further types of ora (well-being) include Wai ora (the essential element of wairua realised as holistic health and wellness), Mauri ora (the elemental essence imparted by wairua, bound with energy to generate life, form and substance), Whānau ora (the foundation for nurturing and growth, social interaction and identity through intergenerational relationships, aroha and manaaki), and Manawa ora (the energy and capacity for growth and development) (Ahuriri-Driscoll et al., 2012, p27)

Yates (2019, 2021) introduces the term mauri ora as an extension of these principles, highlighting it as a paradigm that aligns closely with ecological science. Mauri ora not only stresses the connectivity of life as an interactive network but also calls for an ethical focus on the well-being of the entire biosphere, including non-human elements like mountains, skies, and rivers. This expansive view, termed ecological well-being, acknowledges the vitality and agency of all life forms and their integral roles within the global ecosystem. Thus, mauri ora encapsulates a socio-cultural-ecological vitality that elevates traditional Māori insights into a universal ethos, advocating for a sustainable and integrative approach to the health and integrity of all existence.

MANA MOANA

Framework

The Mana Moana framework, as explored through the interconnected concepts of tapu, noa, and the implied principle of tupu, offers a lens for understanding and engaging with the social-environmental systems of Moananui that are related to mana. At its core, Mana Moana is a holistic approach that embodies the essence of Moananui cultures, encapsulating the dynamism between the sacred (tapu), the secular (noa), and the inherent potential for regeneration and growth (tupu). This framework not only acknowledges the spiritual and cultural dimensions of existence but also emphasizes the importance of maintaining balance and harmony within and between these dimensions.

Tapu, representing the sacred connections and restrictions, serves as a foundational element in Mana Moana, highlighting the respect and reverence owed to the natural world and its divine aspects. Noa, on the other hand, reflects the state of freedom and the unbound, offering a counterbalance to tapu by facilitating interactions that are separated from the divine, yet still profoundly interconnected with the broader cosmos. The concept of tupu introduces the vital aspect of growth and development, suggesting that through the respectful engagement with tapu and noa, there is a continuous potential for regeneration and upliftment of mana within Moananui.

The Mana Moana framework enables its practitioners to uplift the mana of the social-environmental systems they are a part of, activating the symbiotic relationship between people and their surroundings. By consciously navigating the principles of tapu, noa, and tupu, individuals and communities are encouraged to foster environments where the spiritual, cultural, and ecological dimensions are activated, thereby enhancing the vitality and resilience of Moananui. This approach not only sustains the regenerative capacity of social-environmental systems but also strengthens the cultural continuity and identity of Moananui peoples, ensuring that mana flows and regenerates throughout the region.



MANA MOANA

Purpose

To uplift and enhance the mana of both the people and the environment. It aims to integrate tapu (sacredness), noa (unbound or free), and tupu (potential for growth) in design processes, ensuring that these elements are respected and enhanced in every project.

Outcomes

- **Engagement** with Moananui communities is continuous, with their mana acknowledged, upheld, and respected.
- **Conservation** of environmental systems that honour the relationality of tapu, noa, and tupu.
- **Partnerships** with Indigenous and local communities, upholding their mana motuhake (autonomy and resilience) throughout the design process.

Potential Design Deliverables

- Establish a design committee that integrates Indigenous and community leaders to ensure the inclusion of diverse, culturally rooted perspectives in every phase of the project.
- Produce detailed 2-D and 3-D models to accurately identify and visually represent areas of tapu (sacred), noa (common), and tupu (growing), enhancing understanding and respect for these spaces.
- Actively develop the capabilities and capacities of Moananui communities by engaging them in continuous skill-building and decision-making processes throughout the project's duration.

Moananui definitions of Mana

Maori-Polynesian comparative dictionary (Treagear, 1891)

Māori - mana, supernatural power: Na faia e ia le lalolagi i lona mana; He has made the earth by his power. Mamana, to do wonders; supernatural power; (b.) to love, to desire; manamana, to bear constantly in mind; to treasure up in the memory; fa'a-mana, to show extraordinary power or energy, as in healing; fa'a-manamana, to attribute an accident or misfortune to supernatural powers. Cf. manatu, to think; mana'o, to desire, wish; manafa, industrious; manamea, to love, desire; atuamanatu, to have a good memory; manàmatua, the supernatural power of a parent bringing a curse on a disobedient child.

Samoa - mana, supernatural power: Na faia e ia le lalolagi i lona mana; He has made the earth by his power. Mamana, to do wonders; supernatural power; (b.) to love, to desire; manamana, to bear constantly in mind; to treasure up in the memory; fa'a-mana, to show extraordinary power or energy, as in healing; fa'a-manamana, to attribute an accident or misfortune to supernatural powers. Cf. manatu, to think; mana'o, to desire, wish; manafa, industrious; manamea, to love, desire; atuamanatu, to have a good memory; manàmatua, the supernatural power of a parent bringing a curse on a disobedient child.

Tahitian - mana, power, might, influence; to be in power; honor: te tura e te mana tei mua ia i tona mata; Glory and honor are in his presence. (b.) Powerful, affluent; haamana, to empower, to make powerful; to bestow authority or power; he who gives authority to another. Cf. manao, to think, to reflect; thought; idea, meaning, conception; manatu, profit, advantage; manava, the belly, the interior man; manavaru, an eager desire after a thing; marumana, the grand appearance of one in office; vahamana, a powerful pleader.

Hawaiian - mana, supernatural power, such as was supposed to be the attribute of the gods; power, strength, might; strong, powerful: A i ka la i pii aku ai i ka hakuohia make kekahi kanaka, i mea e mana ai ua kii ohia la; On the day they went up to an ohia tree some man would die, to give efficacy to the idol. (b.) Spirit, energy of character; (c.) glory, majesty, intelligence; hoo-mana, to worship, to reverence; adoration. Cf. manao, to think, to meditate; a thought, idea; mananao, thought, opinion; manaioio, to believe; manawa, feelings, affections; a spirit, an apparition; mananalo, insipid, tasteless, as pure cold water

Tongan - mana, power, authority: E te aronga mamaata ra, te mana ra ia i runga i to ratou; They that are great exercise authority over them. (b.) Supernatural power: Ko taua mana nei nona, ko tona ia atua; His power is the power of his god. (c.) Skill, cleverness: Na te mana o Manii kake mai ei; Who has the skill of Manii to attempt it? Cf. manako, to think upon.

Rarotongan - mana, power, authority: E te aronga mamaata ra, te mana ra ia i runga i to ratou; They that are great exercise authority over them. (b.) Supernatural power: Ko taua mana nei nona, ko tona ia atua; His power is the power of his god. (c.) Skill, cleverness: Na te mana o Manii kake mai ei; Who has the skill of Manii to attempt it? Cf. manako, to think upon.

The term "mana", as delineated within the context of Moananui cultures, encapsulates multiple meanings that pivot around the notions of authority, power, and a supernatural essence, with each Polynesian society imbuing it with its own unique interpretation and place-based application. Derived from the Māori -Polynesian Comparative Dictionary (Tregear, 1891), a Māori perspective on mana encompasses authority, influence, prestige, and a supernatural dimension that imbues objects or individuals with a sanctified potency beyond the mundane. Similarly, in Samoan culture, mana signifies supernatural power. It is intricately linked with concepts of creation, memory, and the exertion of extraordinary energy, particularly in healing and the manifestation of supernatural influences in daily life. The Tahitian interpretation of mana integrates notions of power, influence, and honour, often in the context of leadership and societal status, alongside the empowerment and authorization bestowed upon individuals. In Hawaiian culture, mana is deeply intertwined with the divine and the spiritual, denoting a supernatural power attributed to the gods and encapsulating strength, spirit, and intellectual vitality. Tongan and Rarotongan definitions echo these themes, highlighting mana as a confluence of authority, supernatural prowess, and skill. Through these diverse lenses, mana is not merely a term but a profound cultural principle that underpins social hierarchies, spiritual beliefs, and individual and collective identities across Moananui societies, illustrating the rich tapestry of interpretation and the intrinsic connection between power, spirituality, and community within the Pacific worldview.

Scholars have explored the intricate nuances of the concept of mana, highlighting its profound spiritual and cultural significance that eludes direct translation into Western paradigms. Sachdev posits that mana, intertwined with the concept of tapu, transcends simple linguistic equivalence in Western lexicons, embodying a deeper spiritual essence linked to achievement and divine authority. He states, "Perhaps such an approach is doomed to failure as the word mana and tapu embody concepts that have no precise Western counterparts, and therefore, no English or Western terminology can truly encapsulate their equivalence" (Sachdev, 1989, p. 959). Bradd Shore expands on this by situating mana within the variegated tapestry of Polynesian cultures, suggesting that it serves as a lens through which regional differences within Polynesia can be discerned, as mana embodies the divine power manifest in the human realm (Shore, 1989, p. 6) (Shore, 1989, p. 6). Shore further enriches this discourse by emphasizing that mana is not merely about temporal power but is a reflection of spiritual authority, "that mana manifests the

power of the gods in the human world" ((Shore, 1989, p. 164) (Shore, 1989, p164). Māori Marden expands on this notion and writes of mana as spiritual authority as "that which manifests the power of the gods." (Marsden, 2003, p. 4) (2003, p4).

In her seminal work on the principle of Mana Moana, Karlo Mila (Mila, n.d.) provides an insightful exploration into how language serves as a vital connective thread among the diverse cultures of Moananui. This principle transcends mere linguistic affinity to underscore the integral role of language in fostering communal bonds, shaping identities, and preserving shared heritage across Moananui. Through her analysis, Mila highlights the unifying potency of Mana Moana, presenting it as a linguistic and cultural beacon that illuminates the shared experiences and intrinsic connections among Moananui peoples. Mila expands on the land-based Māori notion of Mana Whenua to embrace the expansive and inclusive realm of Mana Moana, which encapsulates the ocean's pivotal role in linking diverse communities. By focusing on the ocean as a symbol of connection and continuity, she crafts a compelling narrative that celebrates the collective memory, wisdom, and linguistic heritage of Moananui. Mila emphasizes that through the lens of Mana Moana, we can appreciate the commonalities that bind us, as she states:

Mana Moana aims to keep its ears open to the songs out of a relationship with the ocean that we all have in common. It focuses on what connects us, the commonalities, the shared experiences and the source language that flows into the many distinctive ways that we know and speak the world into being right now – even when we are speaking and writing in English. It is here, in this ancient Mother tongue, that we return to who we once were, consciously remembering ourselves, using our ancestral knowledge and memories as a resource to story our contemporary and evolving ever-present (Mila, n.d., p. 2).

This principle accentuates our shared lineage and experiences and advocates for a conscious re-engagement with our "sea of knowledges", enabling us to narrate our present and future in the context of our rich, collective past. Mila's discourse on Mana Moana thus stands as a testament to the enduring power of language and culture as frameworks that unite Moananui peoples and guide them towards a harmonious and interconnected existence. She adds:

Mana Moana is also an Indigenous theory of wellbeing and a therapeutic approach that seeks to vitalize ways of knowing from the largest ocean in the world and recognize its power, energy and esteem in contemporary contexts. In this particular interpretative framework we are understood to be part of the greater family of things, all connected in the spaces between us – the va or wa. It is asserted that we are part of interconnected, interrelated ecological system (Mila, n.d., p. 3).

The principle of mana deeply influences the cultural landscapes and conservation practices across the Moananui, serving as a spiritual and ethical compass that guides the interactions of its people with their environment. In Hawai'i, the significance of mana is profoundly reflected in the identification of places of great importance, encompassing meeting spaces, sacred sites, burial grounds, sanctuaries, and rural communities (Minerbi, 1999) (Minerbi, 1994: 91). Kanahale (Kanahale, 1991) offers a value-based interpretation of Wahi Pana—sacred and celebrated places imbued with spiritual power—emphasizing their role in forging personal and communal identities, connecting generations, and embodying the concepts of dualism and Lokahi, or balance, in the universe. These sacred places are central to pursuing Pono, or proper conduct, reflecting a deep-seated reverence for the land and its ancestral guardians.

Furthermore, Hawaiian conservation ethos embodies a suite of concepts that highlight respect for nature, the sacredness of land, knowledge, unity, and stewardship (Minerbi, McGregor, and Matsuoka, June 1993: 94). This holistic worldview underscores the interconnectedness of people, land, and the cosmos, championed by the principle of mana. Similarly, in Aotearoa/New Zealand, the marae stands as the heart of Māori community life, a sacred meeting place that not only hosts the pōwhiri on its forecourt but symbolizes the entire complex, embodying the spirit and mana of the ancestors. This sacred space, particularly the central whareniui or meeting house, is a testament to the enduring strength of mana, serving as a living connection to ancestry and tradition. In Samoa, the concept of mana is central to the formation and structure of village centres, where the malae (communal spaces) and aiga (family dwellings) reflect a unique "holographic fractal" pattern. This organizational principle, stemming from the divine emanations of Tagaloa and Vanimonimo, showcases mana's capability to shape coherent

social and spatial structures (Refiti, 2014). The Samoan experience highlights a dynamic interplay between the forces of mana and the spatial manifestations of Papa, illustrating a sophisticated understanding of space and community that is deeply influenced by spiritual and ancestral forces.

Across these cultures, mana emerges as a spiritual force and a fundamental principle that shapes the interaction between people, their environment, and the cosmos. It is a testament to the rich cultural heritage of the Moananui people, underscoring the importance of maintaining a harmonious and respectful relationship with the natural world and the living systems that sustain them. Through these practices and beliefs, the significance of mana as a guiding principle for Moananui peoples and their ecosystems is vividly illuminated, advocating for a continued reverence and stewardship of the natural and spiritual worlds that define their way of life. Through these scholarly perspectives, mana emerges as a multifaceted principle that encapsulates divine authority, cultural identity, and regional distinction within the Moananui context, offering a profound framework for understanding the interconnectedness of spirituality, leadership, and social organization in Polynesian societies.

Tapu

The essence of tapu is deeply intertwined with the divine, drawing its potency from spiritual realms and anchoring it within the physical world. This connection is central to understanding the relationship between tapu and mana, as discussed by Manuka Henare, who emphasizes these concepts' vitalistic and cosmic dimensions in Moananui belief systems. Contrary to earlier Western interpretations that reduced tapu to taboo or mere prohibition, Henare (Henare, 2001) argues that tapu is a fundamental principle that infuses various elements of the natural and social world with a sacred significance.

Tapu is a core concept in Polynesian culture that embodies the dual nature of sacredness and restriction as a guardian of cultural order and harmony within Moananui societies. As Shore (1989) elucidates, tapu operates in a dual capacity—active and passive—highlighting its role as a mediator between the divine and the mundane. Henare highlights the pervasive nature of tapu, extending its sanctity to homes, landscapes, and the broader

environment, thereby establishing a sacred bond between humanity and the natural world (Henare, 2001). This sacred bond underscores tapu's role as a protector of balance and well-being, emphasizing its function as a conductor of harmony between the physical and spiritual realms.

It is crucial to recognize that the power of tapu is activated through respect and reverence. Henare (2001) posits that tapu, as humanity's most precious possession, is intrinsically linked to mana, forming an inseparable pair that governs the moral and spiritual dimensions of Moananui life. Together, tapu and mana create a framework that sustains the cultural and ecological equilibrium of Moananui societies, illustrating the profound interconnectedness of the spiritual and material worlds in Polynesian cosmology.

Noa

In discussing mana, the interconnectedness of tapu and noa emerges as crucial to understanding the cultural dynamics of mana within Moananui societies. Bradd Shore illuminates the significance of noa in relation to tapu, portraying tapu as a sacred state of connection with the divine, where individuals or objects are imbued with a collective intelligence and purpose. In contrast, noa represents a liberated state, detached from the divine, embodying individuality, freedom, and the unbound (Shore, 1989). This dichotomy emphasizes the balance between the sacred and the secular, the bound and the unbound within the cultural fabric. Sachdev further elucidates this relationship, describing noa as the antithesis of tapu—removed from divine influence, signifying a return to the mundane or profane (Sachdev, 1989). The existence of noa is intrinsically linked to tapu; noa comes into being when the sacredness of tapu is lifted, marking a transition back to the ordinary. Shore clarifies that noa should not be mistaken for pollution or negativity but should be understood as embodying freedom, the absence of restrictions, and the flow of everyday life unguided by sacred constraints) (Shore, 1989).

Noa, thus, occupies the space of the profane, enriching the textures of daily existence with moments of informality and liberation. It is always relative to tapu, indicating a complementary balance within Moananui cultures where the sacred (tapu) and the secular (noa) coexist and define the rhythms of life. This dynamic also reflects on the concept

of mana, which permeates both states, enriching the sacredness of tapu and guiding the freedom within noa. By acknowledging the roles of tapu and noa, we recognize the profound structure of Moananui societies, where the sacred and the secular, the bound and the free, are in constant dialogue, each enhancing the understanding and expression of mana.

Tupu

The concept of 'tupu' is integral to understanding the broader framework of mana in Moananui cultures. Bradd Shore provides a nuanced interpretation of tupu, defining it as a process of growth and unfolding that is intrinsically tied to the forces of procreation, divine influence, and authority (Shore, 1989, p. 5). This growth is not random or unguided; it reflects the regenerative power that mana embodies. Tupu stands at the intersection of the sacred and the generative, resonating with concepts like hau, wairua, and mauri, as discussed by Manuka Henare. However, Shore's perspective on tupu adds a unique dimension, linking it to vital cultural values such as honour, reputation, and the response to transgressions. This association underscores the role of tupu in affirming life's generative power against challenges and adversities. In this context, tupu represents the dynamic aspect of mana, illustrating how growth and development within individuals and communities are deeply embedded in the spiritual and cultural fabric of Moananui societies. It is within the sanctified bounds of mana that tupu occurs, marking a journey of unfolding potential and realising inherent nature. Thus, understanding tupu enriches our comprehension of mana, revealing its vital role in guiding development and honouring the interconnectedness of life, culture, and spirituality in Moananui.

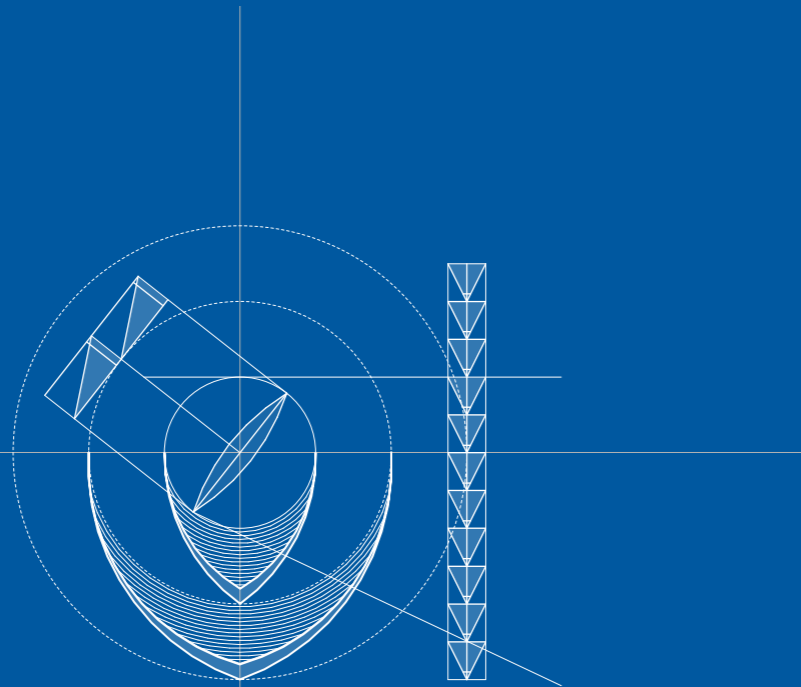
VANUA MOANA

Framework

The Vanua Moana framework provides an integrated perspective on the complex relationships that define Moananui cultures, focusing on the symbiotic connections among people, place, and the spiritual landscape. Central to this framework is the concept of "vanua," a term that encompasses the physical land as well as the socio-cultural and spiritual dimensions associated with it. Vanua is not merely a backdrop for human activity but a dynamic entity that interacts with and shapes the identities and lives of its people.

Three pivotal concepts within the Vanua Moana framework—kaitiakitanga, yavu, and veiwekani—highlight the profound interconnectedness inherent in Moananui cultures. Kaitiakitanga refers to the guardianship and stewardship responsibilities that the people, as tangata whenua or "people of the land," uphold to maintain and protect the environment. This principle emphasizes the role of humans as caretakers who must live in harmony with the natural world, ensuring its sustainability for future generations. Yavu, meaning the earth foundation, connects the people to their ancestors, establishing a lineage that is literally and figuratively grounded in the land. This link underlines the historical and ongoing presence of the ancestors in daily life and spiritual practices, reinforcing the community's connection to their land as a source of identity and belonging. Veiwekani, the network of kinship and social relationships, strengthens community bonds and ensures social cohesion. It advocates for a system of mutual support and respect, guided by values like empathy, trust, and unity. Through veiwekani, the community members experience and contribute to a shared sense of identity and purpose, vital for the collective well-being.

Together, these elements of the Vanua Moana framework enable its users to actualize and continually realize the inseparable links between the land and its people. This framework not only fosters a deeper understanding of Moananui cultures but also advocates for practices that honor and sustain the intricate tapestry of relationships that define these communities, thereby preserving their heritage and enhancing their resilience in the face of changing environments.



VANUA MOANA

Purpose

The Vanua Moana design framework aims to regenerate and sustain the profound, inextricable links between people, place, and the spiritual landscapes of Moananui cultures, ensuring the preservation and revitalization of these relationships in contemporary practice.

Outcomes

- The framework fosters a deeper understanding and respect for Indigenous cultural landscape systems and cultural narratives, ensuring their integration into proposed developments.
- Indigenous and local communities sustain their role as kaitiaki (or kaitiakitanga) as stewards of land-use activities proposed in regenerative developments.
- Regenerative development enhances social cohesion and communal kinship, and incorporates local governance and communal responsibilities.

Potential Design Deliverables

- Develop and implement place-based design frameworks that directly inform and guide all design propositions and land-use activities, ensuring they are deeply rooted in the local context.
- Integrate sites of significance into design proposals and developments as protected, conserved, and regenerated spaces that facilitate the renewal of social and cultural practices.
- Incorporate local materials and traditional Moananui technologies into design and development innovations to foster sustainability and cultural continuity.

Moananui definitions of Vanua

Maori-Polynesian comparative dictionary (Treagear, 1891)

Māori - the Earth; the whole earth: I pouri tonu te rangi me te whenua i mua— country or district: A e tupu tonu mai nei ano i te pari o taua whenua—. Tangata-whenua, natives of a particular locality: Ko nga tangata-whenua ake ano o tenei motu— Cf. ewe, the land of one's birth. 3. The afterbirth, or placenta: Ka taka te whenua o te tamaiti ki te moana—P. M., 36. Cf. ewe, the placenta. 4. The ground, the soil: Na takoto ana i raro i te whenua, kua mate.—P. M., 34. 5. The land, as opposed to the water: Kia ngaro te tuapae whenua; a, ngaro rawa, ka tahi ka tukua te punga.

Samoa - fanua, the land, the earth: Tuimuli-fanua, King of the Land's End (a title): Ma le vao iti o le fanua; Like weeds of the ground. Cf. fanuatanu, a stone pavement; tufanua, a common man; taufanua, a landowner; aufanua, a current steadily setting towards the land; falfale (Māori = whare) the placenta.

Tahitian - fenua, the whole earth: Aita fenua, aita rai; There was no earth, no heaven. (b.) A country: Taaroa te paari, fanua fenua Hawaii; Tangaroa is wise; he created the land of Hawaiki. (c.) The ground, the soil: E te one! O, O, o-toina mai, pohia tei fenua; Oh sands! Here, here, press together the earth. Cf. aifenua, a person that covets and takes possession of another man's land; pufenua, and pufanua, the placenta.

Hawaiian - honua, the whole earth: O kane, O Ku-ka-pao, me Lono-nui noho i ka wai, loa ka Lani, Honua; O Tane, O Tu, and great Rongo dwelling in the waters, brought forth are Heaven and Earth. (b.) A country: Honua-ku-i-lalo; The Southern Land. (c.) Flat land; (d.) a foundation; (e.) the bottom of a deep place, as of a pit, or of the sea [see Māori HOHONU]; (f.) gratuitously; (g.) preceding, going before; as pule honua, the former religion.

Tongan - fonua, the whole earth: Te ke hoko koe feheheaki moe hehegi i he fonua; You shall be a fugitive and a wanderer on the earth. (b.) A country: Kae oua keu toki ha 'u o ave akimoutolu ki ha fonua oku hage ko ho mou fonua; Until I come and take you away to a land like your own land. (c.) The land, the soil: E tubu hake ae guahi akau talatala moe talatalaamoa i he fonua o hoku kakai; Upon the land of my people shall come thorns and bariars. Cf. taufonua, one belonging to a certain place or land.

Rarotongan - enua, the whole earth: E mana oki tona uanga i te enua nei; His descendants shall be powerful in the earth. (b.) The land; a country: Kua oki atura aia ma te mata akama ki tona uaorai enua; He returned with shame to his own land. (c.) The land, the soil: E ono o oou mataiti ruru anga ua i toou enua; You shall sow your land for six years.

The concept of vanua (Fiji) across various Moananui cultures encapsulates a multifaceted understanding of land, earth, and territory, deeply intertwined with cultural identity and social structure. Whenua (Māori) encompasses everything from the earth as a whole to specific districts or localities and extends metaphorically to include the placenta, symbolising a deep connection between birth, land, and identity. On the other hand, fanua (Samoa) refers not only to the land and earth but also to social titles and the placenta, reinforcing the land's integral role in social and individual identity. The Tahitian fenua and Hawaiian honua also depict the earth both in its entirety and as specific habitable lands, with additional meanings that associate the land with foundation and origin. In Tongan and Rarotongan, fonua and enua likewise represent the earth and particular lands, emphasising the land's role in supporting social structures and personal belonging.

Despite slight variances in linguistic expression, the shared themes across Moananui cultures highlight a profound reverence for the land as both a physical and metaphysical entity. The land is not merely a resource but a sacred entity that defines and is defined by its people. This intrinsic link between people and their land is evident in the overlapping use of terms for land and placenta across these languages, suggesting a universal motif of land as life-giver and sustainer within these cultures. Such interpretations underscore the land's importance not just in physical sustenance but as a cornerstone of cultural identity and continuity, thereby illustrating a common worldview where land is central to the existence and spiritual heritage of its people.

Vanua, whenua, fanua, fenua, honua, fonua and enua, as explored in various Moananui cultures, transcends the simple definition of land to embody a profound integration of social, cultural, and environmental dimensions associated with specific communities. Siriano Nemani (2014) emphasises that vanua refers not only to the physical land but also to the intricate social and cultural aspects that define a community's identity and existence. This broad interpretation is echoed across other Moananui concepts like fonua, fenua, and whenua, where land is inseparably linked with cultural practices, community well-being, and spiritual beliefs. This holistic view aligns with 'AnaTaufe'ulungaki's (2004) perspective, where health and well-being extend beyond individual physical health to include the spiritual and mental wellness of the community, reflecting a deeply interconnected system where land and people exist in a mutual, sustaining relationship. She states in her article 'Fonua: Reclaiming Pacific communities in Aotearoa':

The concept of 'health'...means the well being of the whole person: that is his/her spiritual, mental and physical well being, which is an interpretation that is consistent with the Pacific's holistic worldviews. Well-being and health refer not just to individuals but also to communities, the environment in which they live, and the relationship that binds them together. This set of interdependent relationships is what I meant by 'fonua' in Tongan, 'vanua' in Fijian and 'whenua' in Māori . In other words, 'fonua' is a Pacific concept of community. ('AnaTaufe'ulungaki, 2004)

Nabobo-Baba (2010) further enriches this understanding by describing how Fijians perceive their environment—land, waterways, and forests—as intertwined with human relationships, spiritual entities, and cultural knowledge. This interdependence signifies that "vanua" is not merely a setting for human

activity but a vital participant in the cultural and spiritual life of the community. Ravuvu (1983) articulates this relationship by referring to people as "Iewe ni Vanua" or the flesh of the land, underscoring the notion that individuals are both shaped by and shapers of their environment, embodying the land itself in their communal and personal identities. This concept fosters a sense of belonging and responsibility towards the environment, reinforcing the idea that the preservation of "vanua" is inherently linked to the preservation of cultural identity and continuity.

The spiritual and ecological dimensions of vanua and its equivalents are vividly illustrated by practices such as the burial of the placenta in the land. This ritual not only marks a biological and spiritual connection to a place but also signifies the genealogical interconnections within the natural world, viewed through the lens of creation stories and life-force beliefs. Such practices highlight the reverence for the ecosystem as a living, breathing entity that sustains and is sustained by its people. Thus, understanding "vanua" in its fullest sense calls for a recognition of its critical role in sustaining not just the physical but also the spiritual and communal life, urging an integrated approach to environmental and cultural conservation that honours these deep-seated connections.

Kaitiakitanga

In most Pacific nations, the profound significance and sanctity of cultural land ownership resonate deeply, embodying sacred principles. Among the Māori, known as 'tangata whenua, literally, the people of the land, this designation is not merely nominal but reflects a deeply ingrained truth. Here, tangata means people, and whenua means land, highlighting their identity as fundamentally connected to the land. It is described that kaitiakitanga is a responsive cultural bridge between Māori and our kin in the environment in "maintaining reciprocity through harvesting and other practices that sustain Māori knowledge systems. Learning is inherently tied to these relationships and practices" (Walker, Wehi, Nelson, Beggs, Whannga, 2019, p.5). This reciprocity is not merely metaphorical but a vital lifeline that supports the foundational relationship between the Māori people and their land. This concept is further defined by Māori Marsden:

The term tiaki, whilst its basic meaning is 'to guard' has other closely related meanings depending upon the context. Tiaki may therefore also mean, to keep, to preserve, to conserve, to foster, to protect, to shelter, to keep watch over.

The prefix kai with a verb denotes the agent of the act. A kaitiaki is a guardian, keeper, preserver, conservator, foster-parent, protector. The suffix tanga, when added to the noun, transforms the term to mean guardianship, preservation, conservation, fostering, protecting, sheltering (Marsden, 2003).

Central to these relationships is whakapapa (genealogy), which forms the initial thread in assuming the role of Kaitiaki, guardians of the environment. The cited journal article explores the essence of whakapapa, stating, "Kaitiakitanga actions are rooted in the creation narratives of Papatuanuku (Earth Mother) and Ranginui (Sky Father), which establish kin relationships between Māori and the physical environment. Through kaitiakitanga, a reciprocal approach to care and well-being is expressed in various forms, retelling the creation narratives significant to our places and living out these stories through cultural practices" (Walker, Wehi, Nelson, Beggs, Whannga, 2019, p.5). This narrative framework not only reinforces the spiritual and cultural bonds with the land but also emphasises the

active engagement and responsibility embedded in Māori cultural practices, sustaining a dynamic, living culture deeply rooted in its sacred relationship with the land.

Yavu

The concept of yavu is central to understanding the relationship between the people of the vanua and their ancestral legacies. Yavu, which means 'earth foundation' in Fijian, serves not only as a physical foundation for homes but also as a profound spiritual link to ancestors. According to Hulkenberg (2016), yavu connects inhabitants with their ancestors, who are believed to be buried within these foundations and whose spirits remain to oversee and protect their descendants. This connection is further emphasised in the construction practices of the Fijian people, as each new house built upon a yavu⁴¹ bears its name, reinforcing the continuity and presence of ancestral spirits within the living community.

Nemani (2014) articulates that the yavu solidifies the vanua by reminding its members of their origins and their collective responsibilities towards maintaining the sanctity of their communal and sacred spaces. It underscores the belief that each member has a distinct role in upholding the integrity and esteem of both their immediate and extended households within the broader context of the vanua. This concept of foundation not only anchors the community in its geographic locale but also in its cultural and ancestral heritage, thereby fostering a deep sense of belonging and identity among its members. Ratuva (2007) describes yavu as a "convergence arena" where social identity, environmental cosmos, and the ancestral world not only meet but actively engage with one another. He states:

41 Something of particular interest here, worth further investigation, are the yavu and yavutū or pre-European settlements in Fiji. As Parke states: "Many archaeological sites have a particular association with the ancestors and spirits, and are regarded as tabu or very difficult of access. Such sites include mounds regarded as yavutū (sites first settled by the founding ancestor; mounds for the presentation of goods including iversevu (first fruits) to the ancestral spirits; mounds for the veibuli (installation) of chiefs; mounds usually circular and high for the house where the ancestral spirits were consulted, known as bure kalou or, in the Vuda/Nadi area, beto or bito; linear banks of stone or earth with associated mounds and monoliths, connected either with the performance of solevu (ceremonial exchange of goods between groups) or, in certain areas where they are known as naga, with the enactment of initiation ceremonies." (Parke, 2014, p. 32)

Yavu is an arena of convergence where social identity, environmental cosmos, and the ancestral world meet and engage... It is where the world of mythology and socio-cultural reality intersect and define each other. (Ratuva, 2007)

This engagement manifests at the intersection of mythology and socio-cultural reality, shaping and defining each other in a dynamic interplay. Thus, yavu is not merely a physical base but a pivotal element in the cultural landscape of the Fijian people, representing a tangible link to their past and a living component of their cultural identity and daily realities. This integrated perspective highlights the intrinsic value of yavu in maintaining the continuity and vitality of the vanua, illustrating its critical role in the perpetuation of cultural and ancestral heritage.

Veiwekani

Veiwekani exemplifies the profound importance of nurturing relationships, standing as one of the cornerstone principles alongside vanua, spirituality (lotu), and traditional customs (i toko vakavanua). As Unaisi Nabobo-Baba articulates, understanding vanua involves more than recognising the physical space; it extends to honouring and fostering the connections among the people who inhabit that space (Okotai, 2022, p.112). The concept of veiwekani is essential in forming and strengthening these community bonds.

The values embedded within veiwekani, as explored by Ilisoni Leweniqila and Nick Rahiri Rosekrug, are crucial for nurturing these relationships. In their work, 'Sa vosa na Vanua-The Land Speaks,' they describe veiwekani as the social bonds that link individuals to their community. These bonds are reinforced by Indigenous Fijian norms and philosophies such as veivakaturagataki (humility), veidokai (respect), and solesolevaki, which dictate appropriate behaviour and ensure conformity and solidarity within the community (Leweniqila and Rosekrug 2023, p. 289). Through these interactions, veiwekani not only fosters individual relationships but also weaves the social fabric that holds the community together.

Further enriching the texture of this social fabric are values such as veilomani (empathy), veivakabauti (trust), and duavata (unity). Each of these values contributes to the complex, harmonious interplay of relationships that define a community. By nurturing veiwekani, we reinforce the essence of our shared humanity, building stronger, more resilient networks that transcend individual and collective boundaries. This intentional cultivation of relationships not only enriches individual lives but also fortifies the community, paving the way for a more compassionate and unified world.

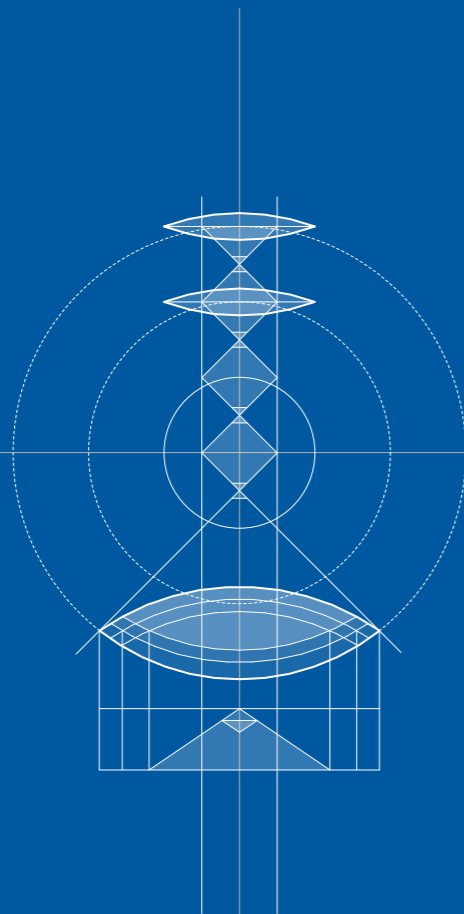
ARA MOANA

Framework

The Ara Moana framework is deeply rooted in the values and beliefs of the Moananui people. This framework uses the concept of ara as its foundational principle, representing pathways that are not merely physical routes but are rich with cultural, spiritual, and communal significance. In Moananui societies, these pathways are seen as conduits through which knowledge, traditions, and social relations are transmitted and preserved, thus shaping the interactions between people, their environment, and their heritage. Central to the Ara Moana framework are the concepts of fua, ata, and tū. Each of these plays a pivotal role in how Moananui people engage with and sustain physical, social, and living environments.

Fua, with its meanings of growth, emergence, and fruition, underscores the framework's emphasis on continuous growth and renewal within communities. It suggests a dynamic system where cultural practices and environmental stewardship nurture each other, leading to the flourishing of both natural and social ecosystems. Ata, referring to reflection, fractal, or wisdom, contributes to the framework by emphasising the reflective and relational aspects of cultural identity. It encourages individuals to see themselves as part of a larger whole, connected through ancestral lines and communal narratives, thus fostering a sense of responsibility and belonging. This concept helps in projecting cultural values across generations, ensuring that traditions and knowledge persist as vibrant elements of Moananui life. Lastly, tū denotes standing firm and embodies the qualities of resilience and steadfastness. The Ara Moana framework represents the strength and stability required to maintain cultural integrity and autonomy. It encourages communities to uphold their values and traditions firmly, supporting a robust cultural identity that withstands external pressures and changes.

Together, these concepts form a powerful framework that enables Moananui communities to vitalise and activate their living environments. The Ara Moana framework not only supports sustainable environmental practices but also reinforces the social structures, cultural knowledge, and community bonds that are essential for the holistic well-being of Moananui people. Through this culturally embedded approach, Ara Moana ensures the perpetuation and dynamic evolution of Moananui ways of life, highlighting a profound interconnectedness with the land, the sea, and each other.



ARA MOANA

Purpose

The purpose of the Ara Moana framework is to revitalise and enhance the interconnected relationships between Moananui peoples and their environments. It aims to embed traditional cultural values into contemporary practices, ensuring that developments harmoniously integrate the social, environmental, and cultural dimensions.

Outcomes

- Promote strategic activities and initiatives that have a systemic impact where growth and development contribute to communal resilience.
- Systematic interventions are actualized through nodal development and foster connectivity and well-being of people and places.
- Communities understand their interconnectedness with the natural landscape and its relativity to the sustenance of cultural systems.

Potential Design Deliverables

- Implement a holistic design strategy that optimises the interconnectivity of place systems, ensuring each element is synergistically designed to support and enhance the others.
- Create spaces that are physically, socially, and spiritually interconnected, fostering a strong sense of place and identity among users.
- Integrate nature-based elements throughout design and development projects as a fundamental strategy for conserving and respecting the natural environment.

Moananui definitions of Ara

Maori-Polynesian comparative dictionary (Treagear, 1891)

Māori - a road, a path, a way: A! tenei te ara, waiho mo te ata koe ka piki ai—P. M., 51. 2. A means of conveyance, Cf. aranui, a highway, a broad path; arahi, to lead, conduct; arataki, to lead, conduct; huarahi, a road; arakau, an overgrown track.

Samoa - ala, a path, way, road, passage: Le mailei mo ia i le ala; The snare for him in the path. (b.) The warp: Po o le ala, po o le fausa; Whether in the warp or woof. (c.) A cause, a reason; (d.) a division of a village. Cf. ala'alo, a bye-path; 'auala, the roadside; alamu, to go direct; alatua, a back way; alava'a, a passage for canoes among rocks and shoals; lotoala, the middle of the road.

Tahitian - ara, a road, a path. Cf. aranoa, the common road; aranui, the public road; aratu, a road, a path; aratai, a guide, a leader; aramoe, forgetfulness.

Hawaiian - ala, a path, way, or road: Hele aku la oia i ke ala maawe iki a ke aloha; He has gone in the path little travelled by the loved ones. Cf. alaololi, a narrow path; alahula, a thoroughfare; alakai, a guide; alaula, red dust on a road. The East is called He alanui hele a Kane (in Māori letters, He aranui haere a Tane), "the great highway of Tane," and also, Ke ala ula a Kane (Māori =Te ara ura a Tane), "the bright road of Tane," the dawn; while the West is called Ke alanui o Ka Make (Te aranui o Te Mate), "the highway of Death."

Tongan - hala, a road or path: Kua mou tofa ae hala kife he aho ni? Whither have ye made a road to-day? (b.) A doorway or entrance; (c.) death, applied to the king; halaga, a path for animals; hahala, to cut open, to tear open. Cf. halafaki, to take another road to avoid being seen; to take a circuitous range, as one in conversation; halahalai, to force a way; to extricate, to disentangle; halatoho, a drawbridge; a pontoon; fajiahala, the point or turn in a road; halababa, a high-road, a beaten path.

The varied definitions of ara listed above encapsulate the idea of a pathway or road, both in a literal and metaphorical sense. This foundational meaning is evident across the Māori, Samoan, Tahitian, Hawaiian, and Tongan definitions. In Māori, ara directly refers to a road or path and is extended metaphorically to denote a means of conveyance, aligning closely with leadership and guidance as seen in related terms such as arahi (to lead). The Samoan ala similarly encompasses the literal path and extends to signify reasons or causes, and even social divisions within a village. Tahitian and Hawaiian interpretations also focus on ara as a physical and guiding path, with references to leadership and the spiritual or mythological paths traversed by deities, reflecting a deep cultural reverence for navigation and direction.

Despite these core similarities, the cultural nuances highlight a rich tapestry of meaning and significance. For example, in Hawaiian culture, ala not only refers to a physical path but also incorporates profound spiritual and existential dimensions, as evidenced by the references to the pathways of deities and the concept of life and death. The Tongan hala adds further layers by associating the path with specific actions like avoidance or strategic movement, and even with significant life events such as death. Collectively, these definitions illustrate a shared cultural importance placed on the concept of ara as a journey or route that carries physical, spiritual, and communal implications. This reflects a broader Polynesian worldview in which paths are not merely routes traversed but are integral to social structure, spiritual beliefs, and personal and communal identity.

Karlo Mila, in her Mana Moana framework (2017), introduces hala as a multidimensional pathway that bridges the visible and invisible realms, underscoring its role in connecting the living to the spiritual world. This interplay between the seen and unseen encapsulates a broader Moananui understanding where physical spaces are imbued with spiritual significance, often guiding cultural practices and social interactions. Refiti (2014) discusses the Samoan ala, suggesting an awakening or an inherited potency that binds individuals to their ancestors and potential futures. Similarly, the role of the Māori Kaiwhakaaraara highlights how ara facilitates community vigilance and cohesion, ensuring the security and alertness of the community through both literal and figurative pathways (Cherrington, J; Te Ara Whanau Ora, 2017). As stated in 'Te Ara Whānau Ora' - "The role of a Kaiwhakaaraara was to keep watch for people approaching the Pā, challenge them and to wake those in

the Pā when someone was approaching. “A literal translation of the word Kaiwhakaaraara is, person doing awakening” (T. Kunaiti, cultural advisor, personal communication, 2017; from Cherrington, J; Te Ara Whanau Ora, 2017, p11). This connection extends beyond mere familial ties, infusing responsibilities and expectations into the lives of individuals. These pathways and roles are not static but are actively maintained and traversed within the community, manifesting as genealogical lines that individuals live out on the land of their ancestors. Such interpretations emphasize the continuity of past, present, and future within Moananui societies, where the land serves as a canvas for living out these intricate genealogical narratives.

Moreover, the physical and metaphorical implications of ara are vividly illustrated in the notion of auala, particularly in Samoan funeral rituals, which are seen as a pathway to the spiritual realms of heaven or the underworld (Pratt 1977; Mosel and Hovdhaugen 1992, Tamasese, 2007). This cultural practice highlights the importance of ara in navigating life's ultimate transitions, reinforcing the connection between the living community and their departed ancestors. Further exploring the metaphorical dimensions of ara, the concept of 'alaga' in Samoan culture underscores the role of pathways as causes or catalysts for events and conditions (Refiti, 2014). This philosophical perspective positions ara as fundamental to the causality framework within these communities, suggesting that understanding these paths offers insights into the origins and developments of various cultural phenomena. Ara Metua on Rarotonga exemplifies the integration of ara within the landscape, where the pathway acts as a backbone around which societal and religious structures are organised (source needed). This ancient road not only connects physical locations but also serves as a symbolic connector of the community's past and present, showing how ara structures the spatial and temporal aspects of cultural heritage. Similarly, the Samoan fua'iala represents a dynamic system where pathways facilitate the flow of relationships and resources, embodying values such as balance and reciprocity, which are crucial for the sustenance of community life. In a broader societal context, ara as pathways or routes, whether leading to the sea, encircling islands, or connecting marae, serves as fundamental axes around which community life, cultural identity, and spiritual practices revolve.

Ultimately, Ara Moana as a design principle within Moananui frameworks facilitates a

deep understanding of the interconnectedness among people, their ancestors, and their environments. These pathways symbolize more than mere routes; they represent the vital cords that weave the social, spiritual, and ecological fabrics of Moananui communities together. As mentioned in previous sections, the dynamic and living system of "fua'iala" reflects these deep-seated values of balance and reciprocity, ensuring that the traditions of the past dynamically inform and sustain the present and future generations, fostering a holistic, balanced interaction with the natural world.

Fua

The concept of fua, also known as hua in some Moananui languages, encompasses a rich array of meanings related to growth and emergence, such as blooming, blossoming, and bearing fruit. This term symbolises ripeness, positive growth, and abundance, encapsulating the metaphorical essence of things coming to fruition and individuals blossoming after meticulous nurturing (Mila, 2021). In this context, fua signifies both the act of measuring—akin to weighing something up—and the process of unfolding, akin to the bearing of fruit or origination (Refiti, 2014). These interpretations align closely with the lifecycle's dynamism, where growth and decay are inevitable phases. Conversely, mae represents the lifecycle's decline, such as withering or perishing, which starkly contrasts with "fua." The term evolves into mamae in some Pacific and Māori dialects, denoting pain or mourning, thus highlighting the natural cycles of disintegration and reintegration within life (Mila, 2021). This cyclical perspective emphasizes that existence is not perpetually in full bloom; rather, decline is a natural and essential phase that fosters subsequent growth and renewal.

The concept of ala in Polynesian languages, particularly as documented by Pratt, pertains to the "cause or reason" of something emerging or arising, imbued with vitality and potency (Refiti, 2014). Here, fua'iala can be seen as a metaphorical expansion of this idea, representing an unfolding of space along a pathway. This interpretation resonates deeply with the concept of "ara," signifying a journey or route that not only facilitates movement but also embodies the continuous processes of creation and evolution inherent in these cultures.

Thus, fua and ara together illustrate a profound cultural understanding of life as a journey marked by cycles of growth, decline, and renewal, where pathways (ara) serve as conduits for these processes to unfold. The interaction between these concepts underlines the dynamic, living systems deeply embedded in Polynesian social and environmental paradigms, emphasizing a harmonious balance between movement, change, and the cyclic nature of life.

Ata

The concept of "ata" exhibits multifaceted dimensions akin to fractals, manifesting across various scales and contexts. Primarily, "ata" denotes an image or representation, but it also encapsulates lineage and heritage, particularly in its reference to atali'i or atariki, terms signifying the offspring of a chief, thus intertwining notions of identity and succession (Koskinen, 1960). This usage symbolically extends to the idea of a shadow or a reflection—a form that possesses the attributes of the original yet remains in readiness to assume its role, highlighting a dynamic interplay between the past and the potential future.

Portrayed as a 'fractal' or 'partible' self, ata is fundamentally linked to its ancestral counterpart, from which it derives its definition and sense of self (Refiti, 2014). This relational aspect underscores the interconnectedness within cultural settings, where individual identity is deeply rooted in and defined by its lineage and heritage connections. Such connections are not merely genealogical but are active elements that influence the individual's role and status within the community. Furthermore, the concept extends into the cognitive realm through atamai, which describes the processes of perception, reflection, and cognition. Atamai involves how individuals receive external stimuli and integrate them through their cognitive filters—shaped by personal experiences, values, and beliefs (Mila, 2021). This cognitive processing is integral to how individuals interact with and navigate their social and physical environments, embodying the flow of knowledge and relational forces that define interactions within the community.

In linking ata to ara, or pathways, we observe a profound cultural schema where pathways

are not just physical routes but are imbued with the movement of heritage, identity, and knowledge. Ata and ara facilitate not only the traversal of landscapes but also the transmission and transformation of cultural and personal identities over time and space. This integration highlights the essential role of pathways in shaping and expressing the multilayered aspects of identity and cognition within Polynesian societies, emphasising the continuum of past, present, and future in personal and communal existence.

Tū

Tū across Polynesian languages encapsulates the essence of being, steadfastness, and upright posture, reflecting a deep-rooted cultural emphasis on identity, permanence, and resilience. Tū signifies standing firm and upright, connoting both physical and moral integrity (Mila, 2021). It is a term of Austronesian origin, pervasive across 48 languages, where it not only implies physical standing but also the essence of existence and the embodiment of core human attributes (Woodmore, 2022). At its most profound, "tū" symbolises the archetypal human, often connected with the god of war, Tūmataunga, and the human realm, underscoring its foundational role in the cultural consciousness.

The phrase "Tū Mau" illustrates this concept vividly, translating to a steadfast pursuit or search; mau here implies the actions of finding, holding, or possessing. This combination stresses the proactive and determined nature of standing or being, where standing firm is intrinsically linked to seeking and

securing one's goals or aspirations (Andrews, 2022; Mila, 2021). This reflects a dynamic aspect of tū as not merely a state of physical uprightness but also an active engagement with one's environment and objectives. In Māori culture, tū forms the core of the powerful concept of tūrangawaewae, literally 'the standing place of the feet'. This term describes places where individuals feel a profound sense of empowerment and connection, underscoring tū as a foundational element in establishing one's place and identity within the world. Tūrangawaewae represents not just a geographical location but a cultural and emotional anchor, offering a base from which one can assert their identity and belonging (source needed). This is also evident in the Samoan concept tūlagavae (Tamasese, 2004).

Connecting tū to ara, or pathways, we see how these concepts interweave to form a cultural framework where pathways are both literal and metaphorical routes that guide and support the journey of identity and existence. Ara provides the routes along which one navigates, while tū represents the manner of this navigation—firmly, with purpose, and rooted in one’s cultural and existential identity. Together, these concepts frame a holistic view of movement and being within Polynesian societies, emphasising the journey not just as a passage but as an expression of one’s enduring essence and place within the world.

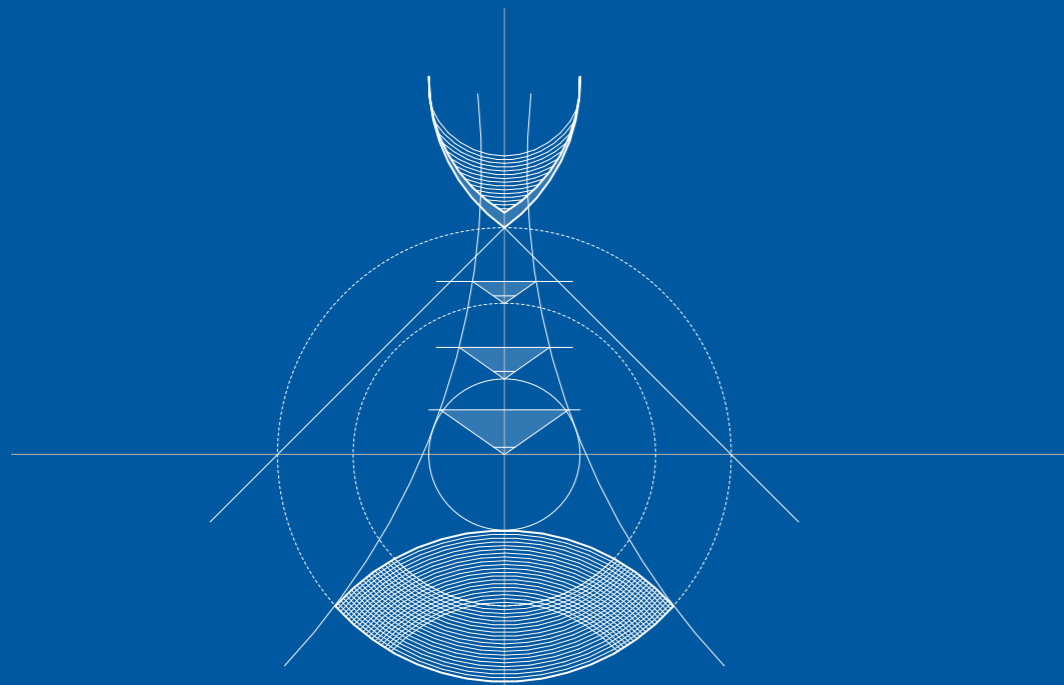
WAO MOANA

Framework

The Wao Moana framework represents a holistic spatial and ecological model tailored to the needs and traditions of Moananui. Derived from the term wao, which refers to a realm or domain, the framework categorises the environment into distinct zones: nahele (forests), kanaka (human settlements), wai (freshwater bodies), and moana (ocean). Each zone is crucial to sustaining the life and culture of Moananui communities and is treated with respect and careful stewardship.

Wao Moana is not just an ecological framework but a cultural strategy that integrates traditional knowledge with modern ecological practices to manage and regenerate these zones. The nahele is revered as a source of materials and spiritual value, maintained through sustainable practices that ensure its biodiversity and health. The kanaka zone focuses on enhancing community resilience and sustainability, promoting practices that support local economies and cultural traditions. The wai and moana zones are managed to ensure clean water and healthy marine life, which are vital for food security and cultural activities like fishing and navigation.

The overarching goal of the Wao Moana framework is to vitalise and regenerate the living systems that the Moananui people depend on. It fosters an understanding of the interconnectedness of all life and emphasises the importance of each zone in maintaining the overall health of the ecosystem. Through this framework, communities are encouraged to continue their stewardship of the environment, ensuring that it can sustain future generations while retaining its cultural significance. In doing so, Wao Moana helps to maintain a balance between human activity and natural processes, ensuring that cultural practices, community well-being, and environmental health are interwoven. This approach not only revitalises traditional connections to the land and sea but also acts as a dynamic blueprint for sustainable living in Moananui regions.



WAO MOANA

Purpose

The purpose of the Wao Moana framework is to regenerate biological resource zones and ecosystems across a continuum from mountain to ocean. By adopting holistic approaches, the framework aims to restore biodiversity, enhance ecosystem resilience, and promote sustainable resource management practices.

Outcomes

- **Dynamic Ecological Zoning:** The adoption of place-based ecological and resource potential zones ensures a dynamic approach to land use, promoting resilience and adaptability in the face of environmental change.
- **Enhanced Environmental Sustainability:** Through the conservation and regeneration of biological resource zones and sub-ecosystems, the Wao Moana framework fosters environmental sustainability, supporting biodiversity, ecosystem services, and community livelihoods.
- **Place-based Development:** By aligning land-use activities with the cultural and ecological zones of the site, the framework facilitates development that respects Indigenous knowledge, values, and traditions, fostering cultural resilience and social cohesion.

Design Deliverables

- Design and develop land-use activities that are harmoniously aligned with the biological resource zones and ecosystems of the project site, ensuring sustainable and culturally sensitive development that enhances ecosystem well-being from mountain to ocean.
- Implement eco-technological interventions at a macro scale to ensure reciprocal interconnectivity and resource sharing between zones, enhancing ecosystem health and resilience.
- Incorporate circular economic models into built and agricultural developments to promote renewable energy, waste re-use, and sustainable food production, thereby fostering economic vitality while minimizing environmental impact.

Moananui definitions of Wao

Maori-Polynesian comparative dictionary (Treagear, 1891)

Māori - forest: Anga ake nei au ki te wao nui o Tane — G. P., 296. Cf. waoku, dense forest; waoko, a bushman; kowao, a plot of fern-land in a wood; tawhao, a copse or wood; waho, outside; mohoo, a man of the woods; a barbarian.

Samoa - vao, the bush; a forest: Ne'i galo mai A fia i lona vao; Do not forget Awhia in his forest (home). (b.) A tree not producing anything edible; (c.) a plant, a weed: Ina i fa'atupuina ai foi le vao iti; To make the young plants spring up. (d.) An uninhabited place, in distinction from a village; vaovao, small weeds. Cf. aivao, wild (of animals), vaotu, to be overgrown with forest vaomaoa, the forest; vaopuanea, the forest; vaomotu, a clump of trees; 'alovao, to avoid visitors by going into the bush; tauvao, one accustomed to the bush; tavao, to cut timber for building, and leave it in the bush.

Tahitian - vao, the extremities of the inland valleys; (b.) a rustic, a clown. Cf. vaomaua, an ignorant person not used to society; araaraivao, an inhabitant of the upper valleys; a wild untamed animal; uruvao, the trees or forest on the upper parts of the valleys.

Hawaiian - wao, a space on the sides of mountains; a place of spirits; the dwelling-place of the gods; a wild place; (b.) high, long; a high shady place unfrequented; thick with vines. Cf. wa, a space between two objects; waoakua, a certain region on the side of a mountain; a region of the gods; a desert; a desolate place where gods, ghosts, and goblins reside; waoeiwa, the name of a region on the sides of mountains, covered with vegetation and small forest trees; waokauaka, a region on the side of a mountain, where men may live, and where vegetables may be cultivated.

Tongan - vao, the forest; covered with bush: He oku ta aki ha toki e ha taha ae akau i he vao; One outs a tree out of the forest with an axe. Faka-vao, to warm; to sit round a fire (applied to chiefs); faka-vaoo, to leave ground uncultivated. Cf. halavao, to make a road through the bush; kaivao, to live in the bush; takavao, to live in the bush; tavao, to hoe; to clear off weeds grown large; vaivao, dew.

Wao resonates across various Moananui cultures, encompassing nuanced meanings that converge around notions of wilderness, untamed landscapes, and the realm of spirits or gods. In Māori tradition, wao is associated with dense forests or woodlands, signifying both the physical expanse of the forest and the inhabitant or dweller of these wild spaces, often connoting a sense of barbarianism or primal existence. Similarly, in Samoan culture, vao represents the bush or forest, encompassing not only the physical landscape but also serving as a metaphor for uninhabited places distinct from structured villages. Furthermore, the term extends to encompass weeds and untamed vegetation, reinforcing the notion of wild, uncontrolled growth within these spaces. The Samoan concept of vao also includes the idea of individuals accustomed to the bush, highlighting a cultural connection to these wild environments.

In Tahitian and Hawaiian cultures, vao and wao, respectively, share similarities with the aforementioned meanings while adding dimensions of spirituality and the divine. In Tahitian, vao refers to the extremities of inland valleys, portraying a rustic or untamed quality, akin to the Hawaiian understanding of wao as spaces on mountain sides, dwelling places of gods and spirits. Both cultures perceive these wilderness areas as not only physically wild and untamed but also spiritually charged, serving as the domain of gods, ghosts, and goblins. These conceptions reflect a reverence for the natural world and an acknowledgment of the mystical forces that inhabit these remote landscapes. Across these Moananui cultures, wao embodies a multifaceted concept that intertwines notions of wilderness, spirituality, and the untamed, underscoring the deep cultural connections to the land and its spiritual significance.

The Moananui living systems, exemplified by the hierarchical structure of Hawaiian moku and ahupua'a systems, demonstrate a profound nestedness that reflects the interconnectedness of communities and their environment. Rooted in Hawaiian culture, the moku system ensured equitable distribution of resources across Pae 'Āina Hawai'i, fostering resilience and sustainability. This intricate system delineated divisions from the largest scale of mokopuni (islands) managed by paramount chiefs to the smallest 'ili (sections) managed at the family level. Each level, from mokupuni to 'ili, played a crucial role in resource management and community stewardship, showcasing the holistic approach of Indigenous governance. The boundaries of these divisions were not arbitrary

but shaped by diverse factors such as hydrological patterns, geological formations, political considerations, genealogical lineage, and biocultural significance, reflecting a deep understanding of the land's intrinsic value and interconnectedness with human society. (Connelly, 2010; Minerbi, 1997; Lincoln et al., 2023)

Within the moku system, ahupua'a emerged as pivotal land divisions, bridging the gap between mountainous uplands and coastal plains. Ahupua'a, ideally wedge-shaped districts, facilitated access to diverse ecological zones, encompassing resources from mountain forests to coastal fisheries. These divisions were managed by konohiki, land agents of the chiefs, who mediated between community needs and resource stewardship. The intricate distribution of land ensured that each 'ohana (family) had access to resources from mauka (mountains) to makai (seawards), fostering self-sufficiency and community cohesion. This intricate network of ahupua'a, shaped by both natural and cultural factors, epitomised the sustainable practices embedded within Hawaiian Indigenous knowledge, emphasising the reciprocal relationship between humans and their environment. (Minerbi, 1997; Connelly, 2010)

The concept of 'ili within the ahupua'a further underscored the granularity of resource management, assigning strips of land to individual families. Whether 'ili pa'a (complete) or 'ili lele (separated), these land parcels provided access to a range of resources crucial for subsistence and cultural practices. This intricate division of land not only ensured equitable distribution but also fostered a strong sense of place-based identity rooted in intimate knowledge of local ecosystems. The interconnectedness of moku, ahupua'a, and 'ili, guided by the principle of kuleana (responsibility), exemplified a culture deeply embedded in ceremony and care for the land, water, food, materials, family, and daily life. This Indigenous built environment stands as a testament to the wisdom of ancestral knowledge systems and serves as a model for sustainable resource management in contemporary contexts. (Minerbi, 1997; Connelly, 2010)

The intricate division of the island into ahupua'a was not merely a spatial arrangement but a strategic organization designed to ensure equitable access to diverse resources for the maka'āinana (commoners). This division was intricately linked to the island's ecological diversity, with each ahupua'a spanning three major ecological zones: the mountainous zone (mauka), the agricultural zone, and the coastal zone. Within these zones, resources

ranging from firewood and timber in the forested uplands to agricultural fields and fishponds in the lowlands were allocated to sustain community livelihoods. This ecological zoning facilitated a balanced utilisation of resources, fostering both environmental stewardship and community resilience. (Minerbi, 1997)

Furthermore, each ecological zone comprised various sub-ecosystems, delineated by specific bioenvironmental conditions. These sub-ecosystems formed integral components of the island's landscape, functioning as interconnected life support systems. The management of these sub-ecosystems was characterised by cooperative and integrated approaches, reflecting a deep understanding of the interconnectedness between humans and their environment. This holistic management ethos, rooted in Indigenous knowledge systems, predates European contact and underscores the enduring resilience of traditional resource management practices. (Muller-Dombois, 2007)

According to Malo's records, further elucidated by Minerbi and Muller-Dombois, the biological resource zones and sub-ecosystems within each ecological zone encompass a rich diversity of flora and fauna, serving as vital components of Hawai'i's cultural and ethno-ecological heritage. From the lush forests of the mountainous zone to the intricate fishponds of the coastal zone, these sub-ecosystems sustained communities for centuries, embodying a profound sense of reciprocity and harmony between humans and their environment. Understanding these sub-ecosystems is essential for appreciating the complexity and resilience of Indigenous resource management practices, which continue to offer valuable insights for contemporary sustainability efforts. (Malo, 1903; Minerbi, 1997; Muller-Dombois, 2007) The Wao Moana Framework highlights the significance of biological resources and ecosystems in the regeneration of Indigenous and contemporary living systems across Moananui. In essence, Wao Moana draws upon the ecological frameworks of the moku and ahupua'a systems and a lens to understand the hierarchical relationships between space and ecology and how this may be utilised uniquely across other Moananui communities according to their Indigenous and place-based knowledge of their ecologies. The biological zones and sub-ecosystems are:

Mountain Zone (Mauka) | Kua Zones | Wao Nahele

At the apex of Mauna Loa lies the piko, a term imbued with profound significance denoting the navel or umbilical cord. This term, rooted in Hawaiian culture, vividly captures the dynamic activity of the crater, from which lava flows emerge, shaping new land surfaces and perpetuating the island's geological evolution (Pukui & Elbert, 1986).

The kua zones delineate distinct topographical features of Mauna Loa, each bearing ecological significance. Kua Lono, characterized by its broad and barren summit, evokes images of alpine stone deserts and moss-covered terrain (Mueller-Dombois et al., 1981). Meanwhile, kua-hiwi symbolizes the rugged backbone of the mountain, typified by spiny ridges, while kua-lono encompasses expansive plateaus and peaks. Kua-mauna, devoid of significant vegetation cover, includes sparse alpine scrub, while kua-hea, nestled below, hosts stunted trees indicative of the open subalpine scrub forest (Pukui & Elbert, 1986; Mueller-Dombois et al., 1981).

Ecological Zone | Wao Kanaka

Transitioning into the wao zones, these areas represent the inland forested regions of Mauna Loa, each with its distinct ecological character. Wao Kele, or maukele, denotes the rainforest region where majestic forest monarchs thrive (Pukui & Elbert, 1986). Wao akua, shrouded in mystery, embodies the realm of gods and ghosts, likely resembling what ecologists term "cloud forests" due to reduced tree size and ethereal ambiance. Wao nahele or Wao lā'au encompasses the general upland forest region, while wao 'ama'u and wao kanaka denote areas where humans cultivate the land amidst the lush vegetation. Wao 'ilima, named after the prevalent shrub *Sida fallax*, hosts wetland taro cultivation, a testament to the resourceful adaptation of Indigenous agriculture to varying environmental conditions.

Coastal Zone | Kula Zones | Kahakai

Further below, the kula zones unfold, revealing open grasslands shaped by periodic fires. Kula uka, inland grasslands, and kula kai, coastal grasslands, signify the interplay between

fire ecology and landscape dynamics, highlighting the intricate relationship between natural forces and human presence in shaping Mauna Loa's diverse ecosystems. Through these zones, Mauna Loa's ecological tapestry emerges as a testament to the resilience and adaptability of Hawaiian ecosystems, underscoring the need for continued stewardship and conservation efforts (Pukui & Elbert, 1986; Mueller-Dombois et al., 1981).

Stream Ecosystem | Kahawai

Within the wao nahele, amidst the verdant forest, lie springs known as pūnāwai, serving as vital sources that nourish the stream ecosystem, the kahawai. These springs, with their clear, cool waters, sustain a diverse array of flora and fauna, enriching the surrounding forest ecosystem and providing essential resources for both humans and wildlife (Mueller-Dombois, 2007).

Ocean Zone | Kai

As the kahawai flows seaward, it converges with the ocean, creating a dynamic interface known as the estuary or muliwai. Extending into the vast expanse of the moana, or ocean, lies another hallmark of Hawaiian ingenuity: the loko i'a, or fishponds. These immense, hectare-sized enclosures, constructed of sturdy stone walls, harness the natural flow of ocean tides to create controlled environments for fish cultivation.

Through a reciprocal relationship integration of the use of land and sea, Moananui communities, in this particular instance, Hawaiians/ Kanaka Maoli, have developed and evolved intricate ecosystems that sustain both ecological diversity and human livelihoods. The mountain, agricultural, and stream ecosystems, nourished by freshwater springs and oceanic influences, teem with life, while the innovative fishponds exemplify the spirit of resourcefulness and stewardship deeply ingrained in Moananui living systems. As guardians of these invaluable ecosystems, the Wao Moana framework upholds ecosystem-based conservation efforts and promote sustainable practices that honor the interconnectedness of land and sea.

06

Palauli Plantation

Maumoana Spatial Application

This chapter outlines the practice-led component of the study, focusing on the spatial application of the Maumoana framework within the Palauli Plantation. Through the Regenerative Feasibility Study (RFS) spearheaded by MAU Studio, this research advances the objectives of OFN Properties Limited (OFNPL) in the sustainable protection and conservation of the cultural and ecological heritage on Palauli Plantation. The RFS aims to cultivate relationships with neighbouring villages and national and international stakeholders, fostering meaningful collaboration to fulfil the goals of OFNPL and the local community. By developing innovative land-use alternatives, the RFS seeks to ensure OFNPL's financial stability while establishing strong economic and cultural partnerships with local Heritage Trusts and neighbouring villages. This regenerative approach is essential for conserving and protecting the tangible and intangible heritage of the Palauli Plantation, ensuring its preservation for future generations.

The Maumoana Regenerative Design Framework guides OFN Properties Limited (OFNPL) in the sensitive and meaningful development of the Palauli Plantation. This framework emphasises regenerating the site's "mau," or essence, and its cultural significance to Samoan settlement patterns and living systems, as well as its influence across the Moananui region. By integrating the principles of this framework, the development process not only respects but also revitalises the cultural and environmental heritage of the site. This approach ensures that development aligns with the cultural values and traditions of the local communities, thereby enhancing the site's cultural and ecological resilience. The Regenerative Feasibility Study (RFS) is an ongoing process, running parallel to the familial and cultural politics associated with the Palauli Plantation, particularly concerning the protection and conservation of the Pulemelei Mound. Consequently, the activities presented in this chapter have not yet been implemented but are proposed as a series of potential actions designed to reconcile relationships and offer cultural and economic value to all stakeholders involved.

Subsequent sections of the chapter demonstrate the possible application of the Maumoana framework⁴², detailing how it can be adapted to the development of the

42 Refer to Chapter 04 for the outline of each framework in relation to the applications in the subsequent

Palauli Plantation. This includes practical examples and proposed activities that aim to achieve the reconciliation of relationships and deliver both cultural and economic benefits, ensuring a sustainable and respectful development process. The use of Maumoana in this context seeks to bring new meaning to existing relationships, leading to economically sustainable interventions that benefit all parties involved. Moreover, it sets a precedent for how Samoa can protect, conserve, and celebrate its tangible and intangible heritage in a collective and holistic manner. Ultimately, the study aspires to create a legacy that underscores OFNPL's and local villages' commitment to safeguarding Samoa's cultural values and identity. The practice-led component highlights how Maumoana serves as a comprehensive guide for Moananui leaders, governments, designers, and developers, to regenerate living systems across Moananui in the contemporary era.

The practice-ed component of the study will be showcased in an exhibition titled "Maumoana: Regenerating Moananui Living Systems". Maumoana, both design frameworks and their spatial application in Palauli will be exhibited at the Te Wai Ngutu Kākā Gallery, (40 St Paul Street, Auckland CBD) from the 20th September - 11 October 2024.

sections.

VĀ MOANA

Site Application

Purpose

To nurture and care for relationships that foster the interconnectedness of people and place. It draws on concepts such as teu (to care for), tauhi (to maintain), and ta (time, action) to foster a deep respect and responsibility for these relationships.

Develop a Stakeholder Guild, or Project Committee

The Guild or Committee will act as a core reference group to the proposed RFS for the site. Each of the identified committee members below have an ongoing relationship with the land, with aspirations that can actualise the potential of the site. Potential members include:

1. OFN Properties Limited
2. Vailoa village Ali'i ma Faipule
3. NUS Centre of Samoan Studies (Archaeology & Cultural Heritage Programme)
4. MNRE/ Conservation International
5. Palauli Heritage Trust
6. Governmental Member of Parliament

Develop a values-system with the Development Committee that guides the relationship of members, but also underpins all proposed activities and development ventures on Palauli Plantation:

The study proposes here to turn towards the values highlighted by Tui Atua Tupua Tamasese (2018) in his keynote address at the launch of the Mana Moana Leadership programme.

It is proposed here that when the Committee is established, that they form their own series of values to inform their developmental process. However, for the purpose of this exercise, the following values are proposed:

1. **Tōfā Taofiofi** (*Wisdom of Restraint*)

- Loto Maualalo ma Afa Malū (humility)
- Tausua Malie (humour)
- Ava ma Fa'aalo'alo (respect)
- Loto Tele ma Loto Toa (courage)
- Fua Amiotonu (integrity)
- Le Agava'a i aganu'u (cultural competence)

As stated in his address, Tupua Tamasese explains the value of tōfā taofiofi, which we believe is critical for the relational reconciliation between stakeholders, and subsequently, a successful development at Palauli Plantation:

Practising the tōfā taofiofi is difficult because of our natural instincts. During times of both stress and vanity we tend to retaliate negatively, especially when personally attacked. But the mark of a good leader lies in his or her ability to practice the tofa taofiofi notwithstanding. (Tui Atua, 2017)

Collate the aspirations of key stakeholders

The aspirations of key stakeholders should anchor the design and development brief. The aspirations and motivations listed here were collated during meetings with OFNPL and NUS, and also secondary documentation provided by the relative parties.

1. **OFN Properties Limited**

i. **Underlying Motivation**

Achieve holistic economic sustainability by regenerating tangible and intangible heritage through heritage conservation, ecological regeneration,

education outreach, and cultural evolution.

ii. **Projected Impact**

- Brings new meaning to existing relationships between stakeholders, which lead to economically sustainable interventions;
- Creates a precedent as to how Samoa can protect, conserve, and celebrate tangible and intangible heritage;
- A living legacy which demonstrates the OFNPL commitment to protecting Samoa's cultural values and identity.

iii. **Potential Land-Use Activities (OFNPL, 2006)**

- Cattle farming
- Nonu Plantation and Processing
- Eco-Tourism and Eco-Living
- Timber Farming & Agro-Forestry

2. **Vailoa village Ali'i ma Faipule**

- i. Oppose and forbid the sale of the land – as evidenced in their petition "Stop the sale of Vailoa, Palauli lands and return to Vailoa", which has garnered 2,151 signatures between 2020 and 2024 (Ali'i ma Faipule o Vailoa, 2020). <https://our.actionstation.org.nz/petitions/stop-sale-of-vailoa-palauli-lands-and-return-to-vailoa-palauli>
- ii. Have requested OFNPL to return the land ownership back to Vailoa, Palauli in a symbol true 'fa'asamoa and respect of the Samoan culture'

3. NUS Centre of Samoan Studies (Archaeology & Cultural Heritage Programme)

As outlined in their Expression of Interest (NUS, 2020) - NUS proposes to excise a section of Palauli Plantation to establish an archaeological research facility managed by the National University of Samoa. The excision requested is of the Northern end of the land block, an estimated area of 342 acres/ 124 hectares - and includes the Pulemelei mounds. NUS proposes that OFNPL designate the excised land as a National Park, open for further archaeological expeditions, and a partnership between NUS and OFNPL. In summary, the aspirations of NUS are:

1. Excision of 342 acres (northern zone of Palauli Plantation) for archaeological research;
2. Establishment of an archaeological research facility/ precinct;
3. Palauli Plantation is designated as a National Park; co-managed by NUS, Palauli Heritage Trust, and OFNPL;
4. Pulemelei is enlisted as a UNESCO World Heritage Site.

The purpose of this project is to preserve and protect the archaeological remains located at Letolo Plantation, including Pulemelei Mound, a site of great historical, cultural and political significance built in the 11th century. The project is divided into three phases:

1. Phase 01: Stabilisation of Site

Stabilisation will stop all decay processes currently threatening Pulemelei and include clearing the original access road to the mound and removing all invasive vegetation covering Pulemelei itself.

2. Phase 02: Documentation of Historical and Cultural Significance

Propose to complete comprehensive documentation of the origins and history

of Pulemelei relayed through oral histories/traditions, archival records, and any available literature.

3. Phase 03: Assist State Party in establishing Pulemelei as a UNESCO World Heritage Site

Lobby State Party to include Pulemelei on World Heritage Tentative List.

MAURI MOANA

Site Application

Purpose

The Mauri Moana framework is designed to integrate traditional Moananui ecological knowledge with contemporary environmental management practices to regenerate and sustain the vitality and essence of Moananui ecosystems and communities.

Produce Regenerative Story Maps that identify the spiritual, cultural, and ecological significance of the Palauli Plantation

The following maps have been produced in alignment with research that acknowledges the eco-systemic connections of the fua'iala system. As an interconnected system, the fua'iala is the infrastructural core of the Palauli Plantation.

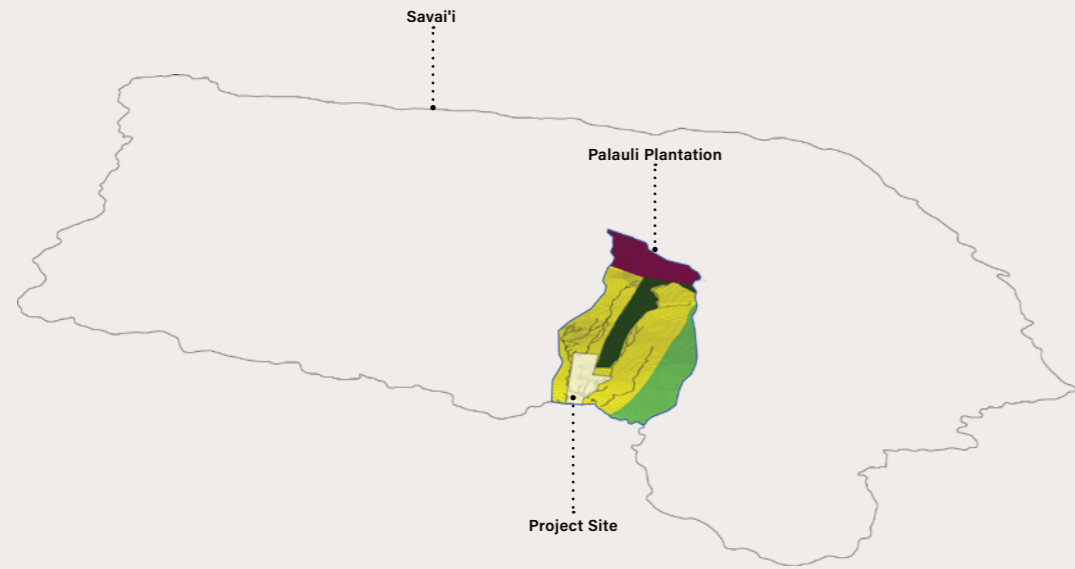
The maps illustrated reference key documentation that informed the study's understanding of the fua'iala, and its positioning within the plantation:

1. Fua'iala holarchies

Informed by the surveys and analysis of Gregory Jacmond (1982), Helene Martinsson-Wallin (2002 – 2007), and Albert Refiti (2014)

2. Ecological Maps

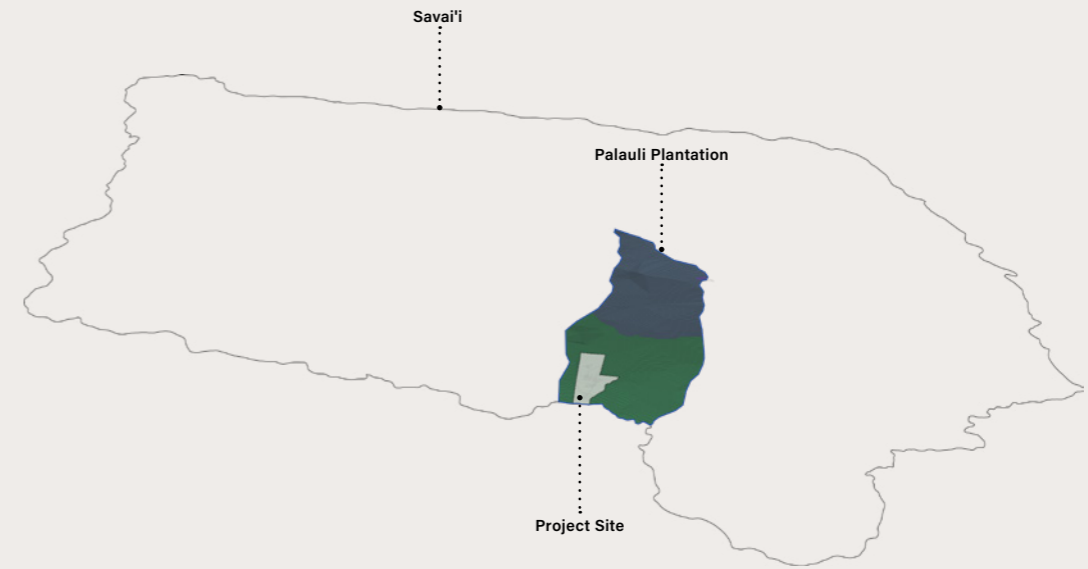
The Palauli Watershed Management Plan (2013) maps the ecological characteristics of the Palauli Watershed. As described in Chapter 02, the Palauli Watershed is the wider ecological system in which the Palauli Watershed is nested within. These ecological characteristics contribute to the understanding



- Island
- FD
- Savai'i Rainforest
- Mt Salafai

Figure 32

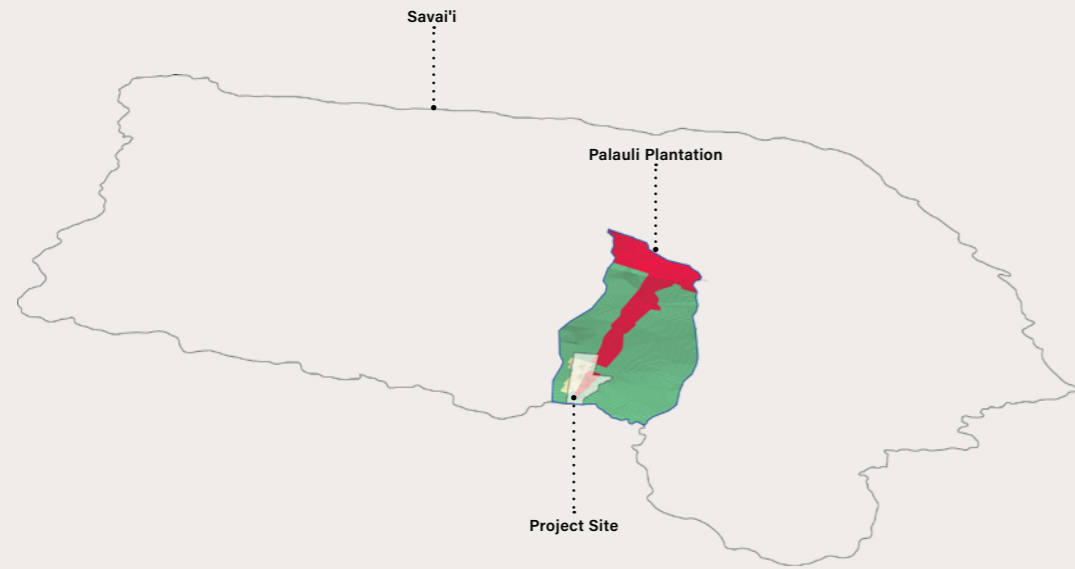
Conservation Map (Own work).



- Fernland - 56.4%
- Disturbed Secondary Forest - 42.6%

Figure 33

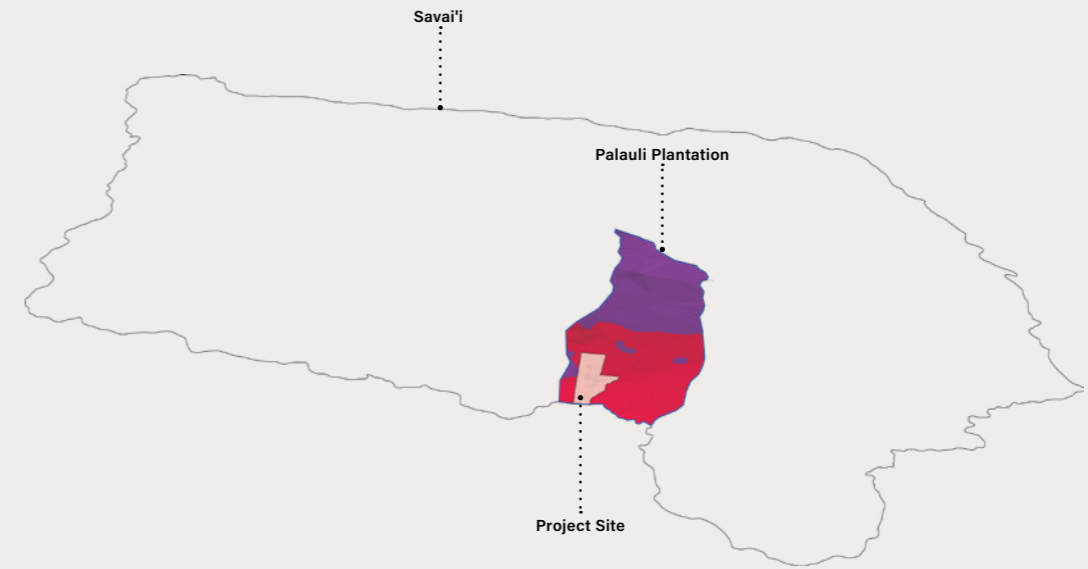
Ecological Region Map (Own work).



- Customary
- Government
- Free Hold

Figure 34

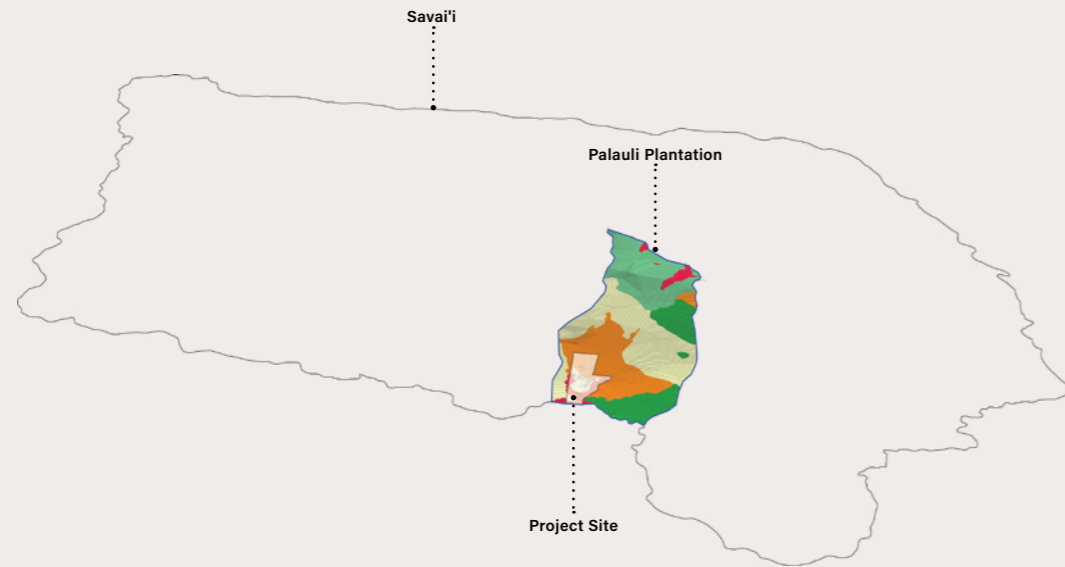
Land Tenure System Map (Own work).



- Coconut
- Forest

Figure 35

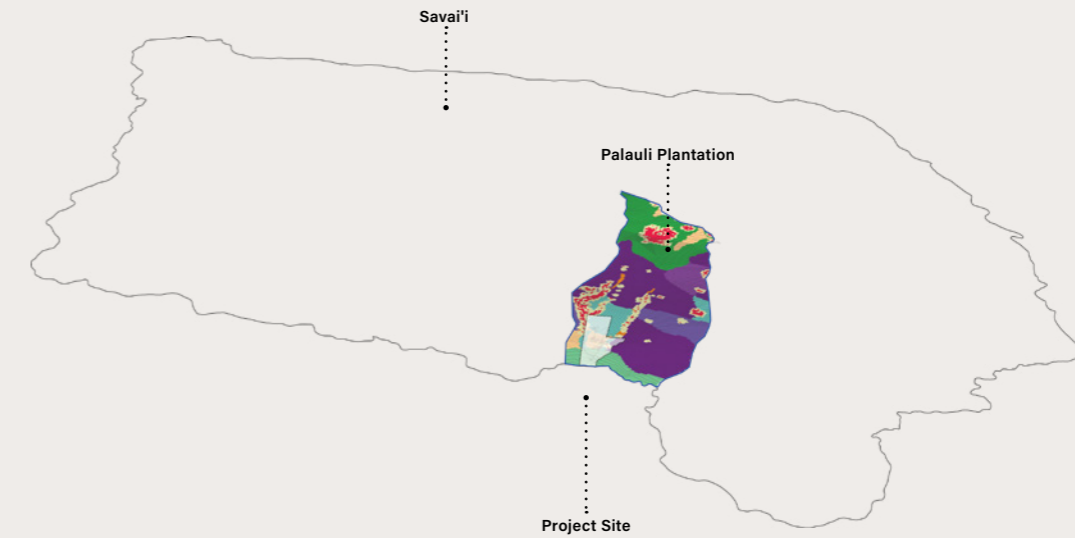
Land Use Activity Map (Own work).



- Coastal Lands
- Lowlands/Foothills - Very Slightly Dissected
- Lowlands/Foothills - Slightly Dissected
- Lowlands/Foothills - Moderately Dissected
- Uplands - Very Slightly Dissected

Figure 36

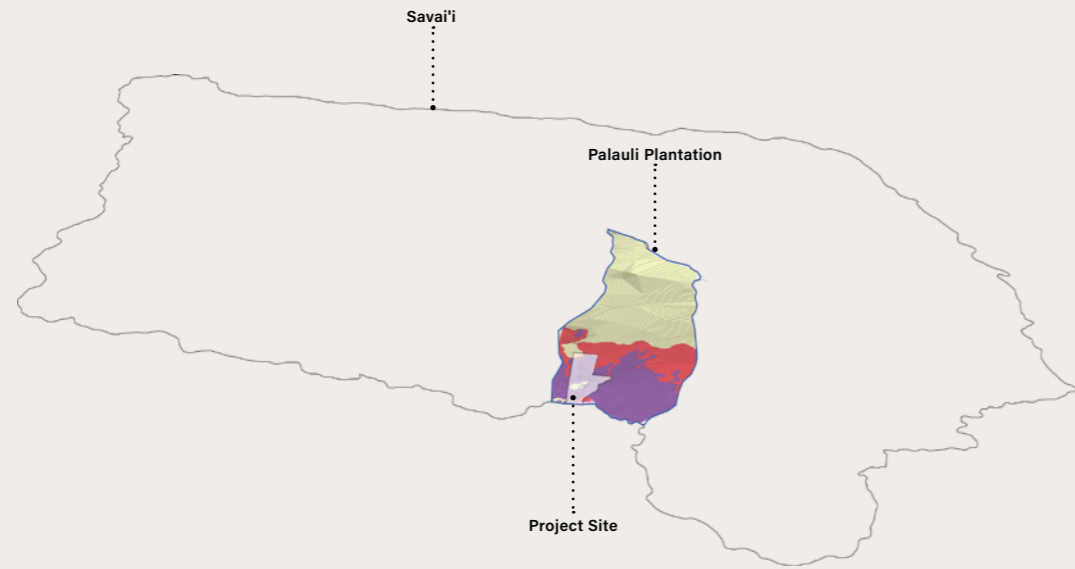
Landscape Map (Own work).



- Steep Slope Priority Zone
- 150m Buffer Zone from Slope
- Upland Soil Area
- Very High Corrosion Area
- High Erosion Area
- Coastal Zone Protection Area
- Agriculture Marginally Suitable Area
- Agriculture Conditionally Suitable Area
- Agriculture Suitable Area

Figure 37

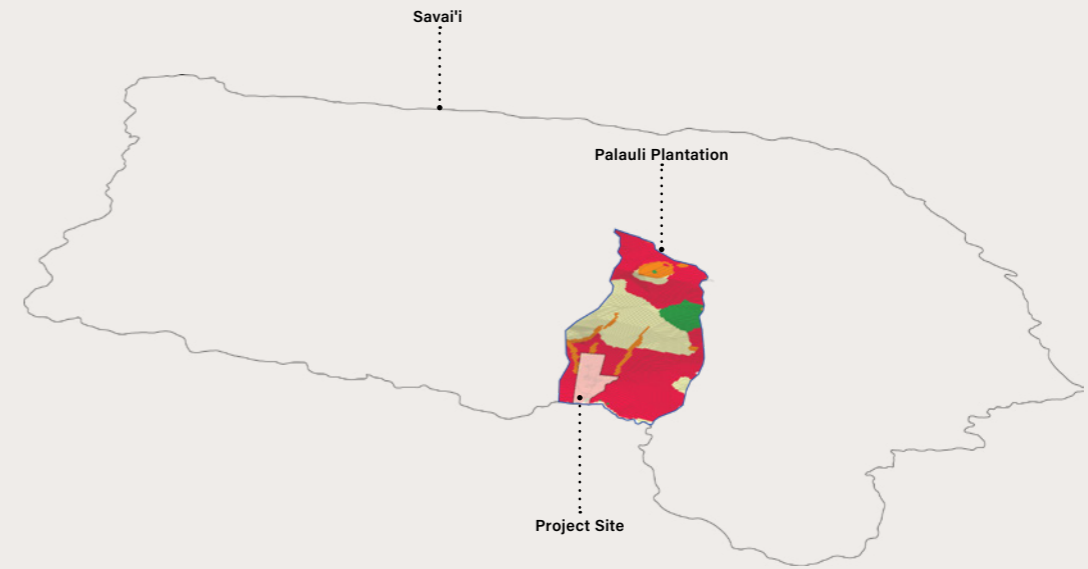
Prioritisation Map (Own work).



- Forest Scat Scrub
- Forest Scrub
- Residential

Figure 38

Vegetation Classification Map (Own work).



- No Erosion
- Low Erosion Vulnerability
- Medium Vulnerability
- High Vulnerability to Erosion

Figure 39

Vulnerability to Erosion Map (Own work).

MANA MOANA

Site Application

of the unique positioning of the plantation within the wider Watershed.

Purpose

To uplift and enhance the mana of both the people and the environment. It aims to integrate tapu (sacredness), noa (unbound or free), and tupu (potential for growth) in design processes, ensuring that these elements are respected and enhanced in every project.

Map areas of tapu/ noa/ tupu in relation to the cultural and spiritual locators on the project site, and allocate land-use activities based on the zones.

- a. Tapu is the spine
- b. Noa are the areas for land-use variation
- c. Tupu are the areas for ongoing regeneration of the mauri/ essence of the site

(refer to map)

Develop a Design Brief in alignment with aspirations and mapping exercises identified in Vā Moana.

Based on the aspirations identified in the sections above, a Development Brief is drafted below to underpin the RFS process and outcomes.

1. Purpose

Identify and develop key land-use opportunities that achieves holistic economic sustainability. This can be achieved by, but not limited to heritage conservation, ecological regeneration, education outreach, and cultural evolution.

2. Outcomes

- i. To establish strong relationships with national and international stakeholders who collaborate meaningfully to carry out the goals of OFNPL and community;
- ii. Develop innovative land-use alternatives which achieve financial stability for OFNPL and strong economic partnerships with local Heritage Trusts and neighboring villages;
- iii. To conserve and protect the tangible and intangible heritage of Palauli plantation.

4. Potential Land-Use Activities

- i. a. Archaeological Research Precinct & Facilities (342 acres)
- ii. b. Nature-based & Heritage-based Tourism (whole of site access)
- iii. c. Agroforestry (Nonu, Coconut, Taro, and Timber plantations) (150 acres)
- iv. d. Eco-Villages (150 acres)
- v. e. Cattle Farming (150 acres) (optional)

Identify opportunities for building the capability and capacity of local community, villages and enterprises whom continue to vitalise 'place.'

1. Consider establishing a formal/ legal entity that can carry out the management and operations of the development. This entity can be made up of the different committee member. Secondly, once set-up, the new entity can lease the property from OFNPL for the development and land-use activities.
2. Future development should provide education and ongoing learning opportunities for local village members to build their capability and capacity in the successful delivery of development activities.
3. Future development should prioritise the employment of local village members in the management and operation of development activities and initiatives.

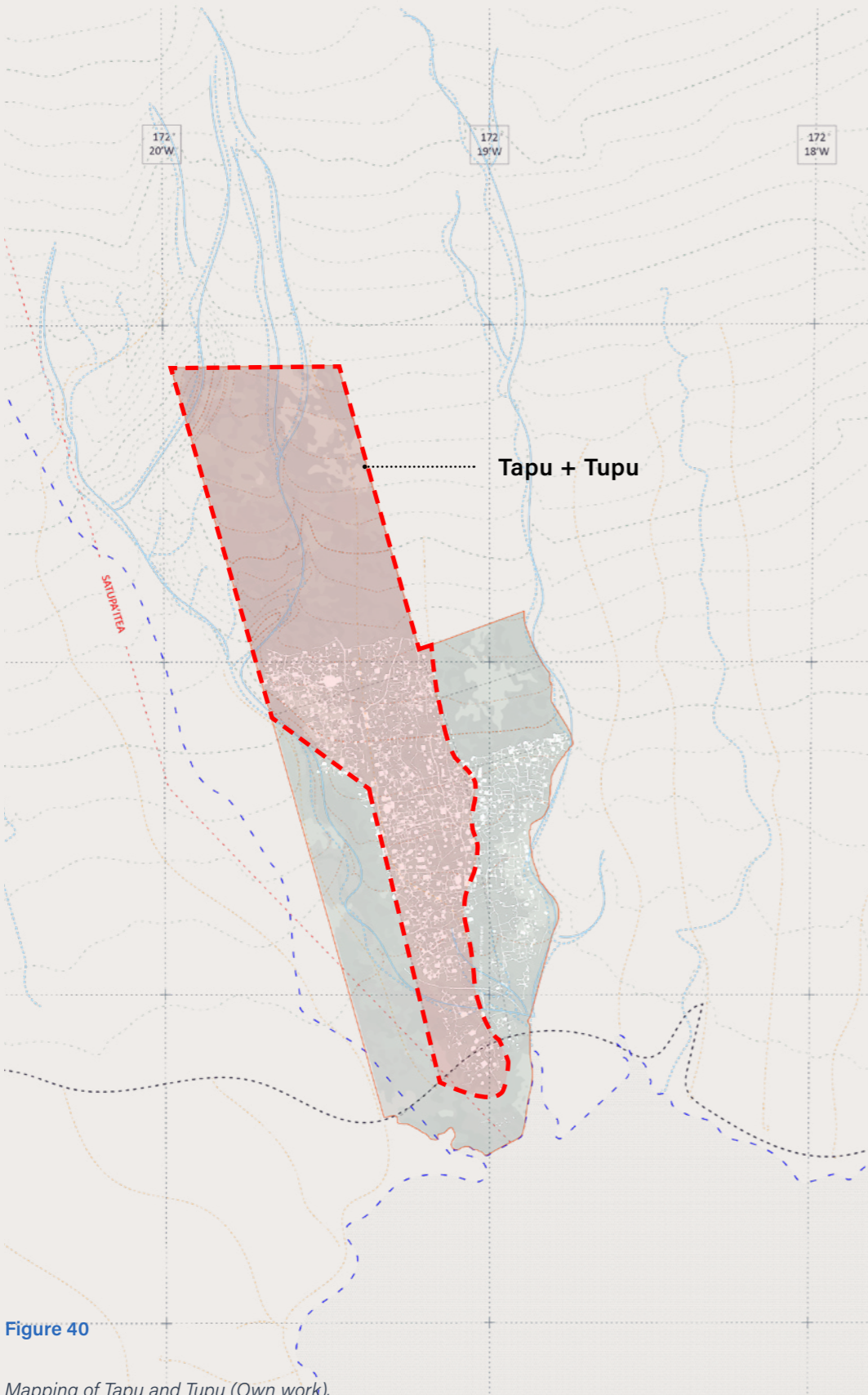


Figure 40

Mapping of Tapu and Tupu (Own work).

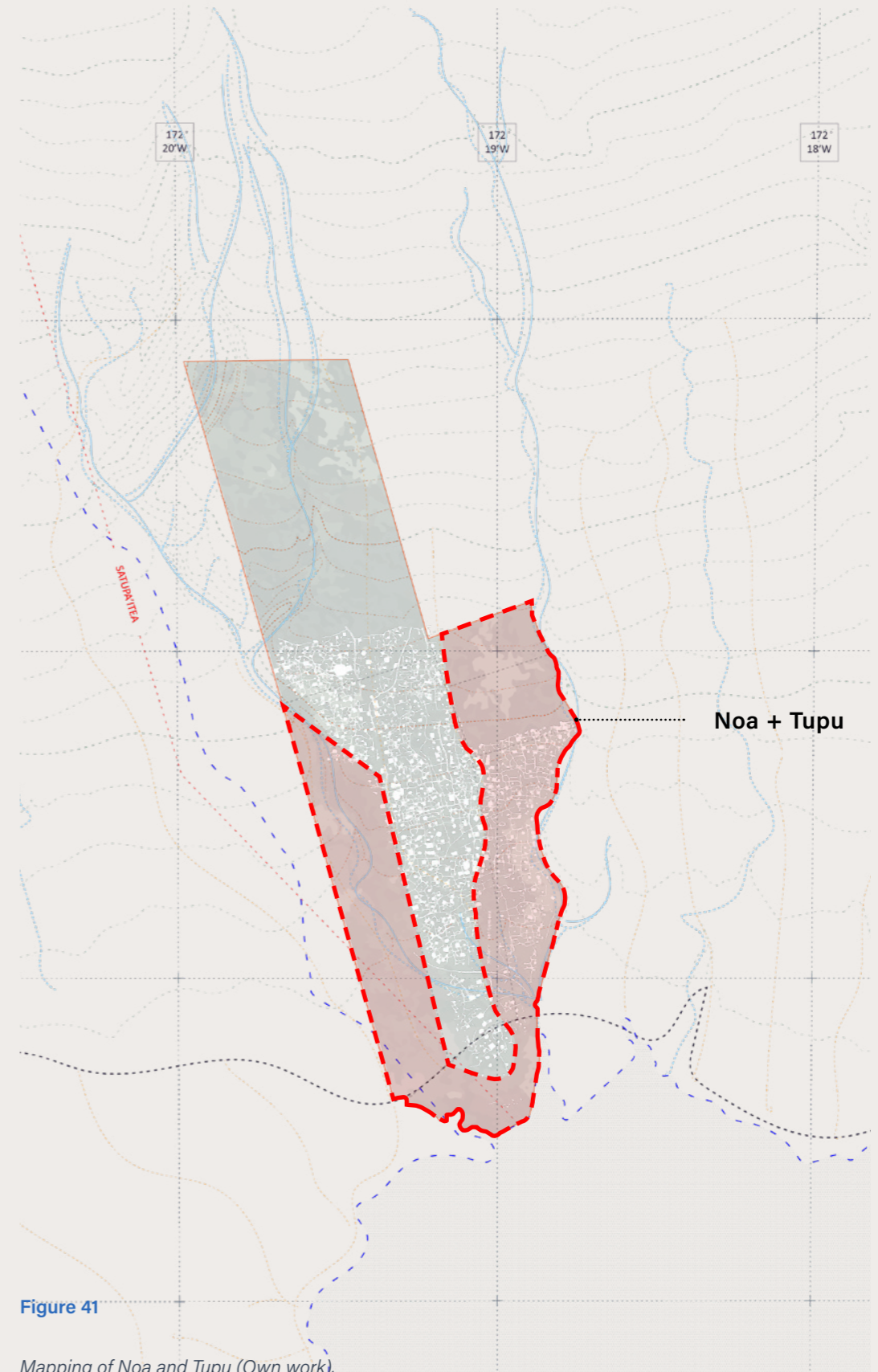


Figure 41

Mapping of Noa and Tupu (Own work).

VANUA MOANA

Site Application

Purpose

The Vanua Moana design framework aims to regenerate and sustain the profound, inextricable links between people, place, and the spiritual landscapes of Moananui cultures, ensuring the preservation and revitalization of these relationships in contemporary practice.

Develop Place-based Design Principles which anchor the project within its context, and leads to tangible design outcomes and deliverables.

The proposed design framework is illustrated in two parts:

1. Values System

Anchored in the values-system identified in Vā Moana. The values are:

i. Tōfā Taofiofi

- Loto Maualalo ma Afa Malū (humility)
- Tausua Malie (humour)
- Ava ma Fa'aalo'alo (respect)
- Loto Tele ma Loto Toa (courage)
- Fua Amiotonu (integrity)
- Le Agava'a i aganu'u (cultural competence)

2. Four Harmonies

Tui Atua Tupua Tamasese's "Four Harmonies" is integrated as an underlying framework in a way to ground the design outcomes and deliverables in the interconnectedness of Indigenous Samoan spirituality and well-being. Presented below are the design principles for the project:

i. Harmony with the Cosmos

Design with a deep respect for the interconnectedness of all life, recognizing the influence of celestial patterns and natural cycles on our environment. Embrace the cosmic rhythms to create spaces that resonate with the cosmos.

ii. Harmony with the Environment

Create designs that honor and preserve the natural landscape, promoting sustainability and biodiversity. Ensure that all interventions enhance the ecological balance and minimize environmental impact.

iii. Harmony with People

Design spaces that foster community, inclusivity, and well-being, prioritizing human connection and social harmony. Incorporate local cultural values and traditions to create environments that resonate with and support the people who inhabit them.

iv. Harmony with Self

Encourage personal well-being and inner peace through designs that offer tranquility, reflection, and a connection to nature. Create environments that nurture individual growth and self-awareness, promoting a balanced and harmonious life.

ARA MOANA

Site Application

Purpose

The purpose of the Ara Moana framework is to revitalize and enhance the interconnected relationships between Moananui peoples and their environments. It aims to embed traditional cultural values into contemporary practices, ensuring that developments harmoniously integrate the social, environmental, and cultural dimension.

Based on the place-based design principles developed in the previous section, integrate the principles onto the site. Focus on interpretation of each principles, but also how they are interconnected and complement each other.

- 1. Harmony with the Cosmos**
 - Highlight Pulemelei and other pitonu'u
- 2. Harmony with the Environment**
 - Highlights rivers
 - Highlights areas for agroforestry
- 3. Harmony with People**
 - Highlight area for Eco-Villages and settlement
- 4. Harmony with Self**
 - Highlight routes for Nature-based and Heritage-based Tourism

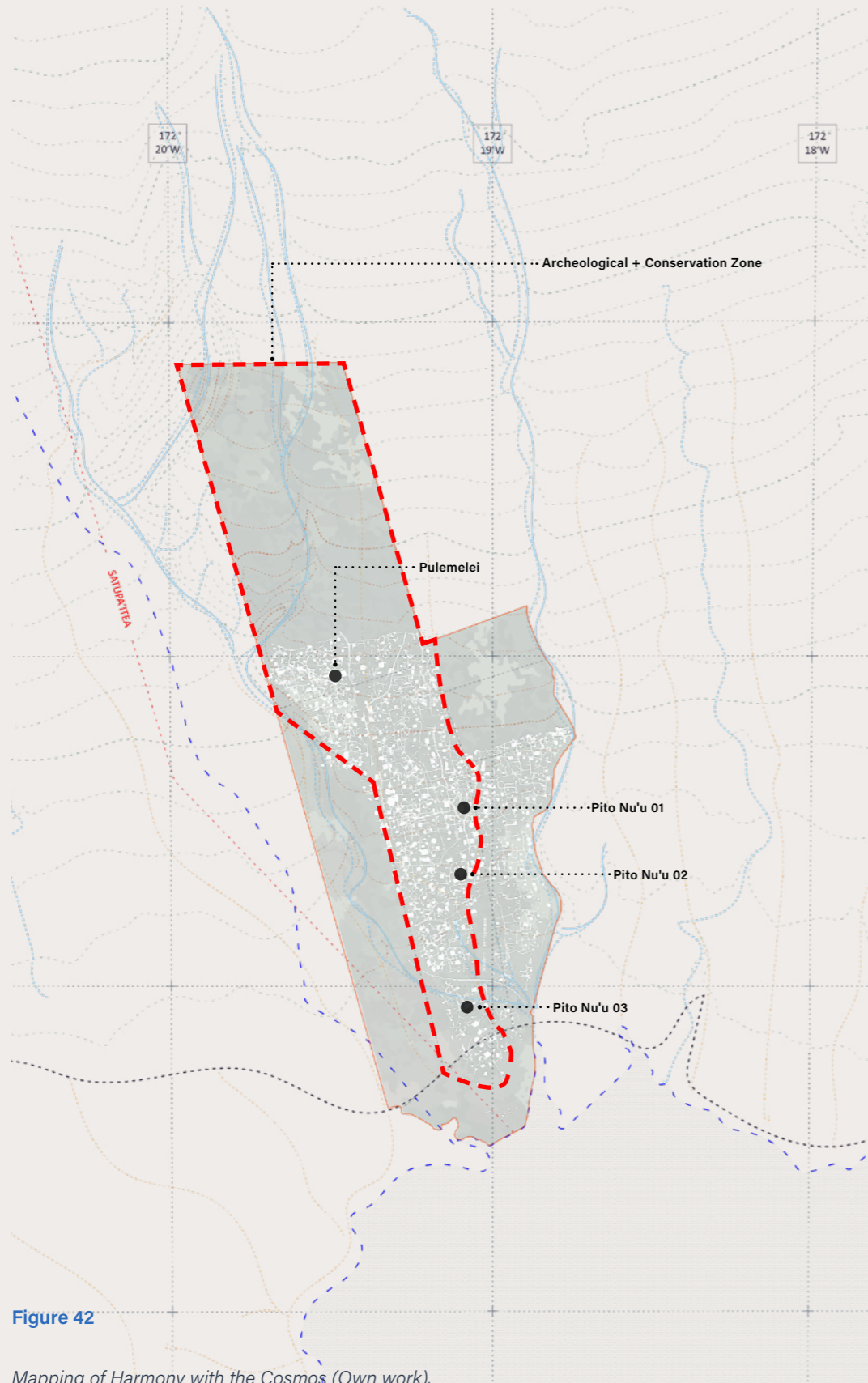


Figure 42

Mapping of Harmony with the Cosmos (Own work).

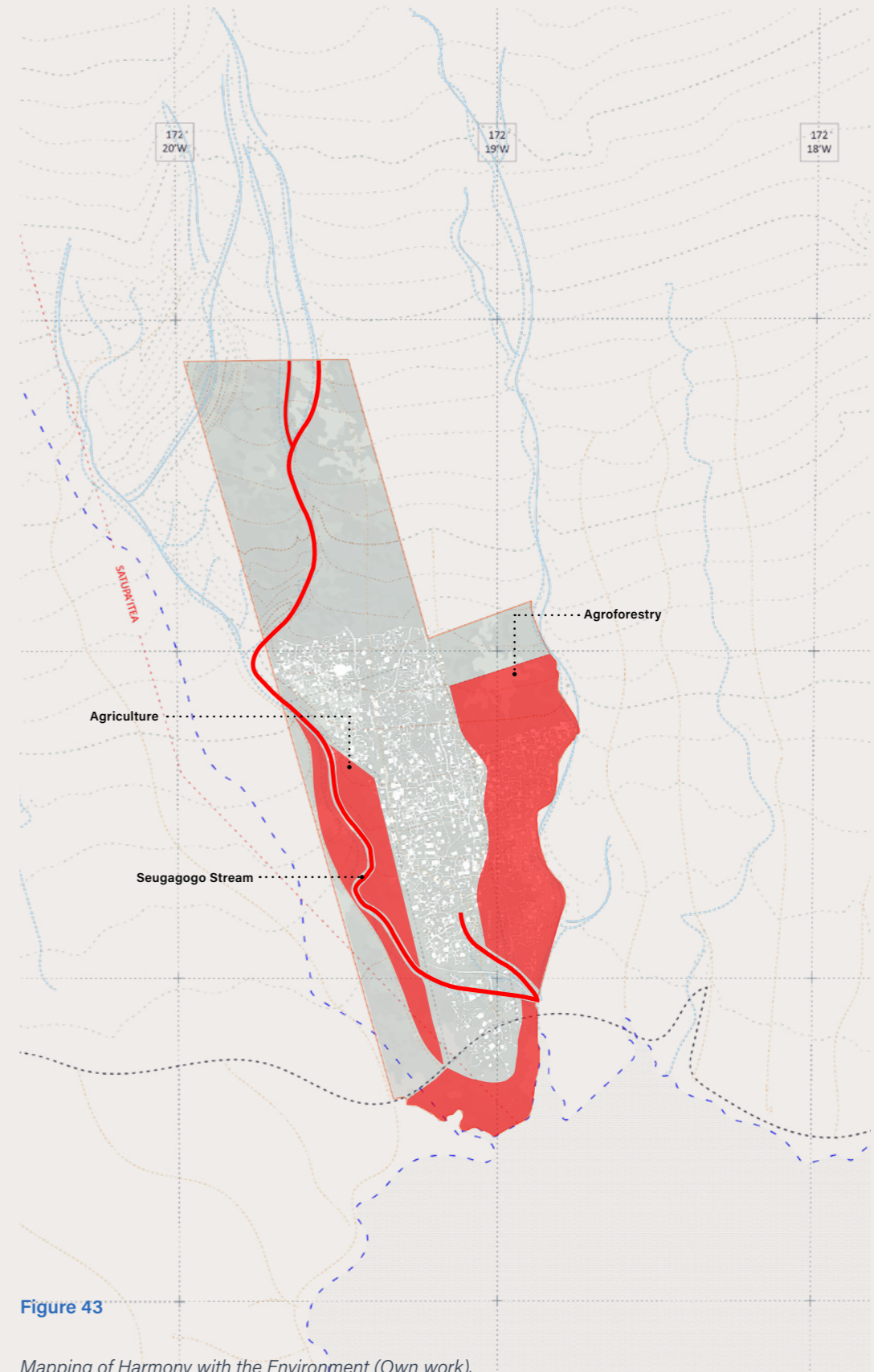


Figure 43

Mapping of Harmony with the Environment (Own work).

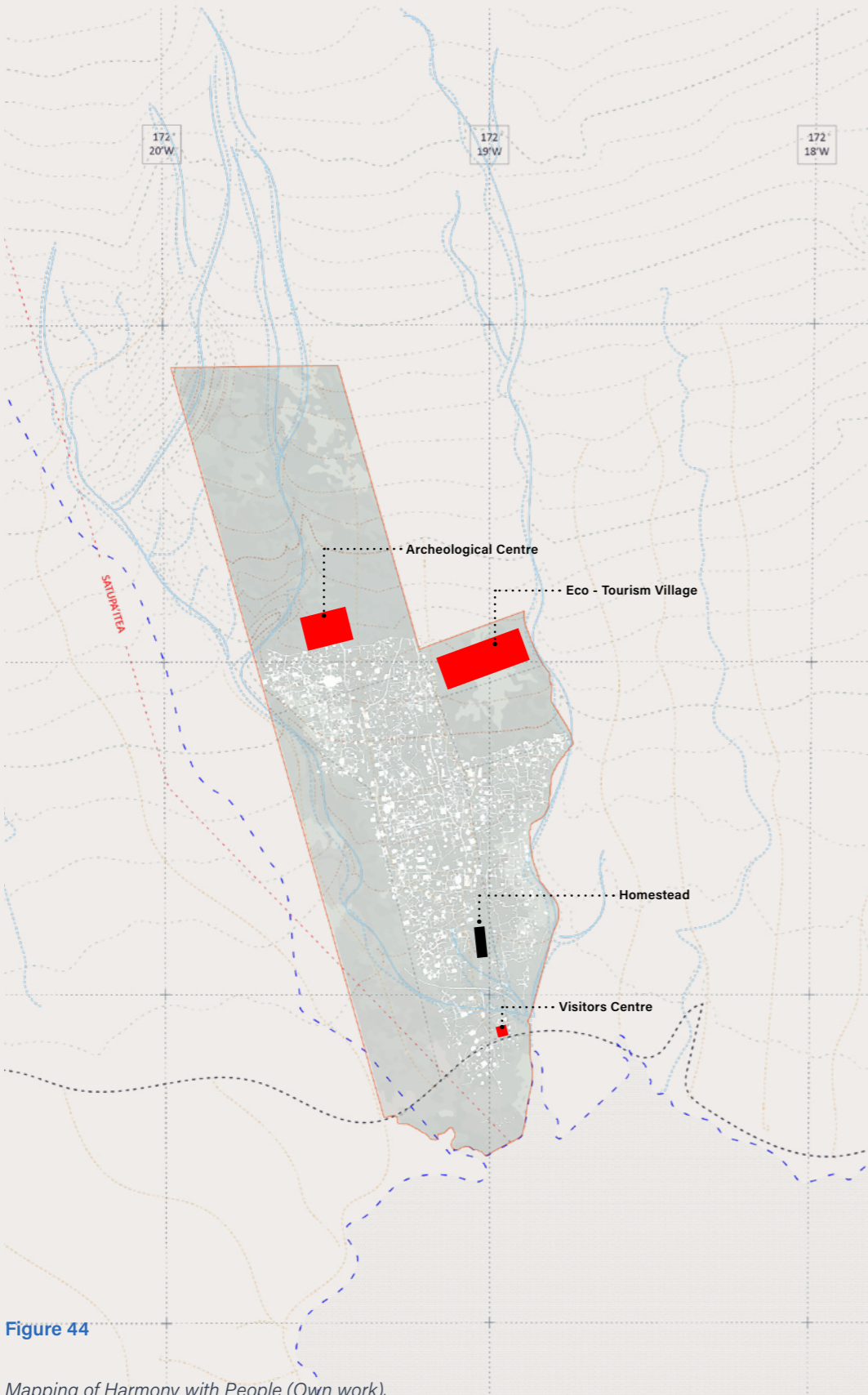


Figure 44

Mapping of Harmony with People (Own work).

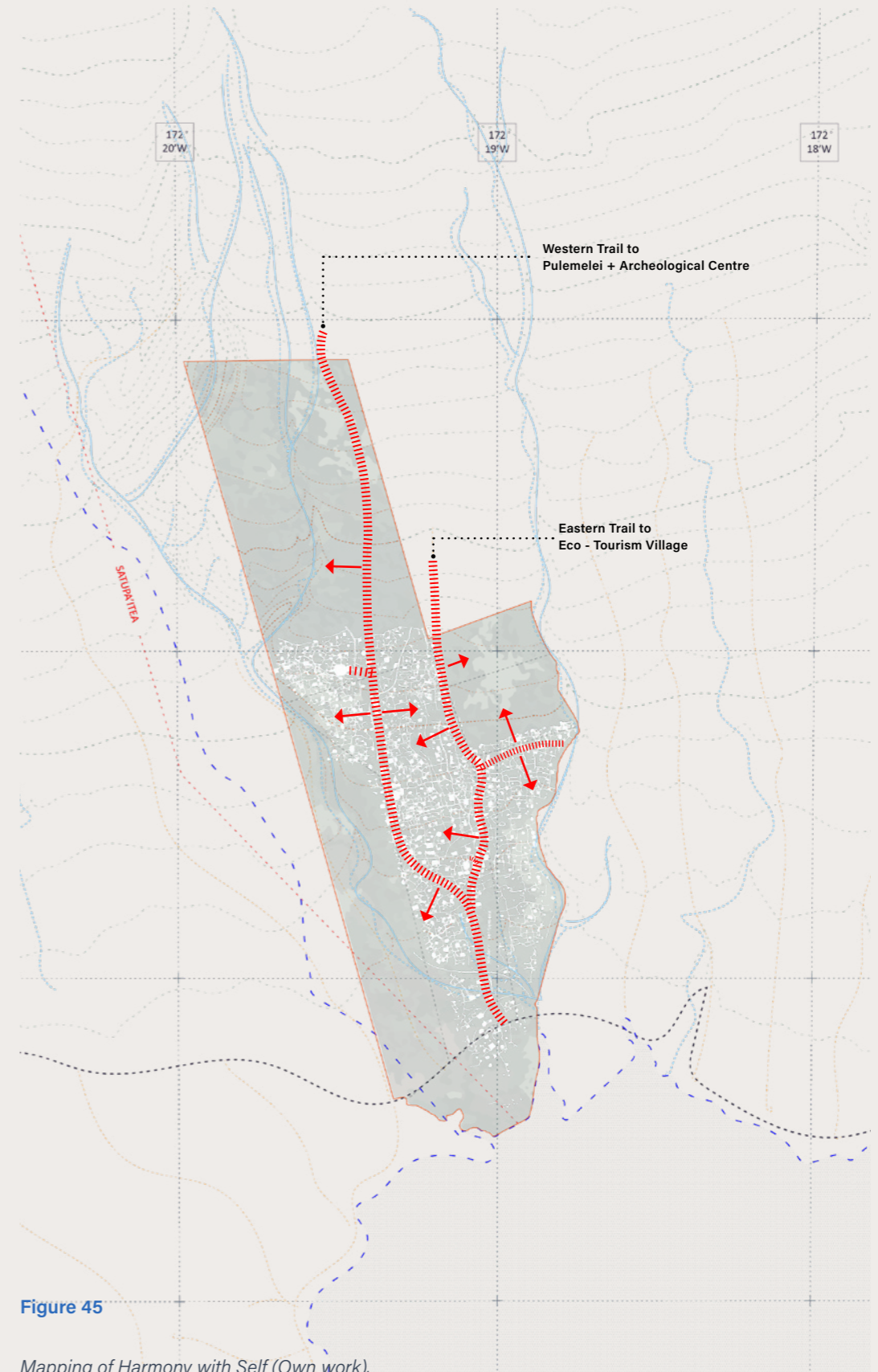


Figure 45

Mapping of Harmony with Self (Own work).

WAO MOANA

Site Application

Purpose

The purpose of the Wao Moana framework is to regenerate biological resource zones and ecosystems across a continuum from mountain to ocean. By adopting holistic approaches, the framework aims to restore biodiversity, enhance ecosystem resilience, and promote sustainable resource management practices.

Identify potential green infrastructure initiatives that can be integrated into the regeneration of the project site.

1. Installation of a Solar Farm
2. Identifying water infrastructure for the cleaning of the river water

Reconnect the project back to watershed management initiatives and how this project would be of value at a Watershed scale.

The Palauli Watershed Management Plan outlines various initiatives to stabilize and regenerate the well-being of the Palauli Watershed. The proposed development should support the initiatives to ensure the health of the watershed, and its impact on the project site, and visa versa.

At a watershed scale, and project site scale, identify the various biological zones, and ensure the project site fulfils its unique role within this ecosystem.

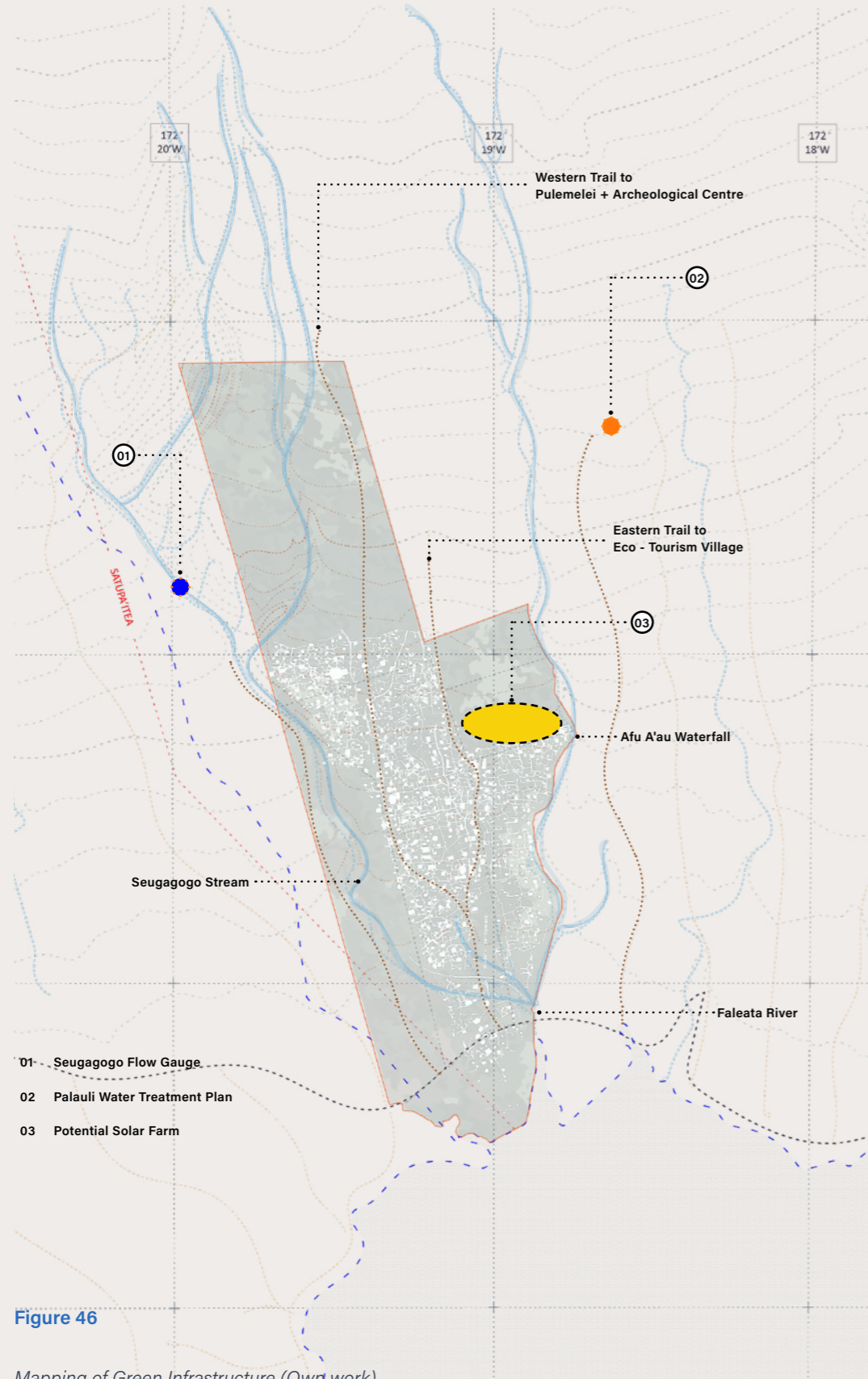


Figure 46

Mapping of Green Infrastructure (Own work).

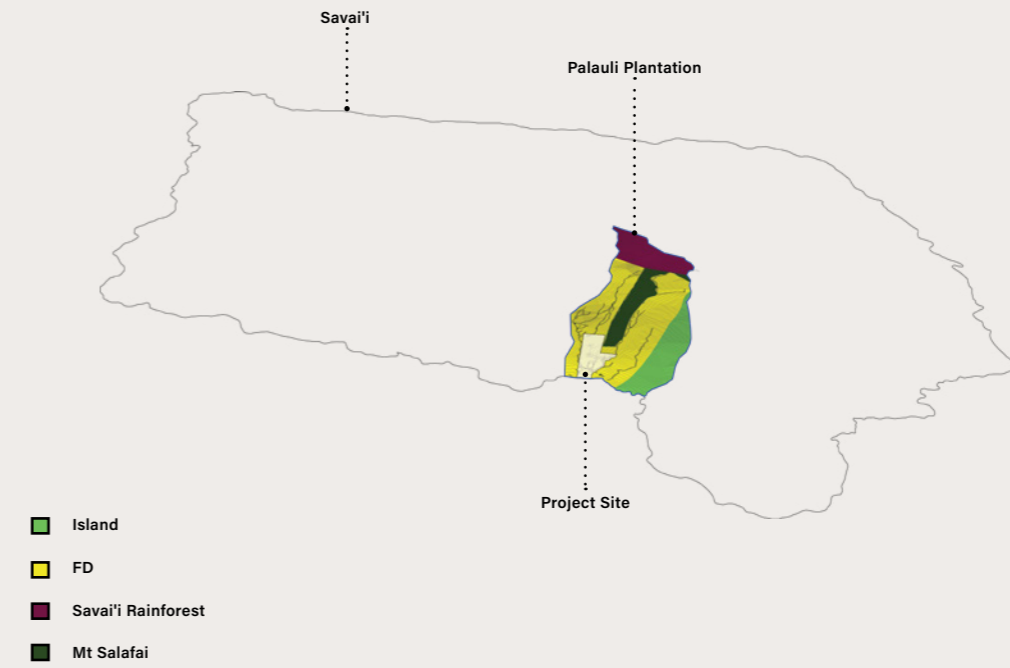


Figure 48

Map of Conservation Zones

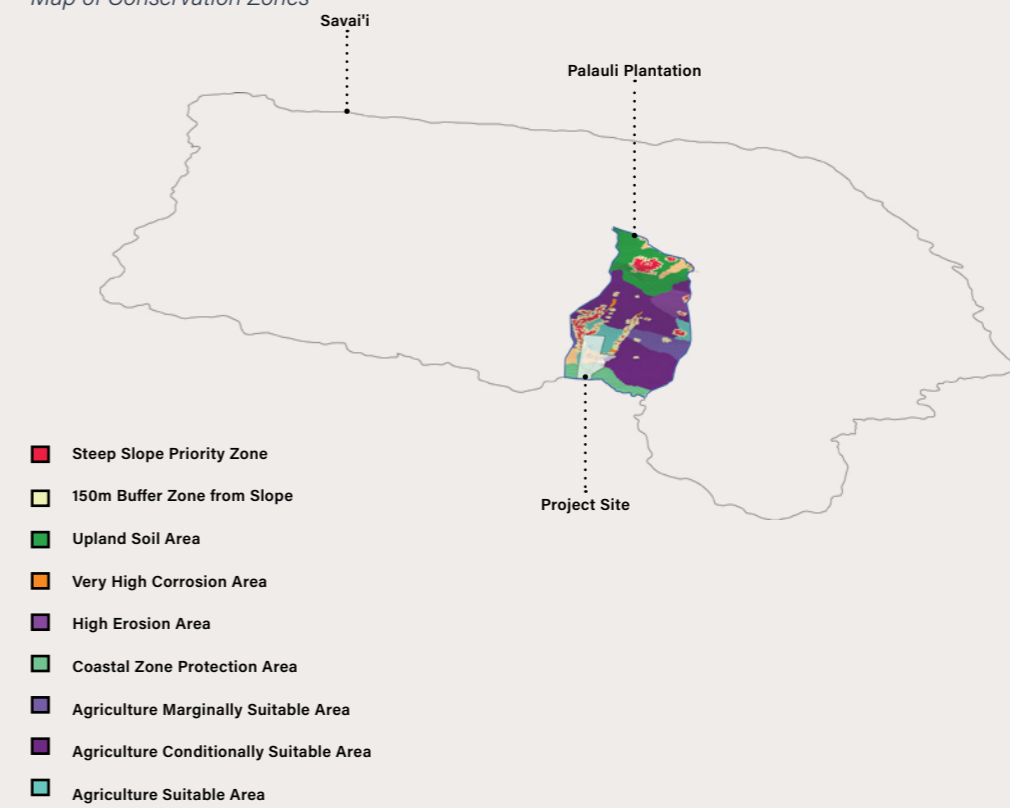


Figure 47

Mapping of Watershed Protection Areas (Own work).

07

Conclusion

In conclusion, Maumoana is a practice-led study that integrated regenerative paradigms with Moananui spatial systems to form a Moananui indigenism. This study addressed two pivotal research aims: firstly, the development of the Maumoana regenerative design framework, which is deeply rooted in Moananui living systems and their intrinsic principles; the second was the practical application of this framework to create a masterplan for the regeneration of Samoan living systems at Palauli Plantation. This masterplan not only proposes alternative land-use strategies but also introduces a regenerative development concept that reimagines Moananui as interconnected living systems that continue to build the capability of people and place.

This inquiry has been conducted through an integrative approach, employing regenerative methodologies to examine the complex interdependencies and connections within Moananui living systems. This analytical framework has deepened our understanding of the socio-ecological dynamics of the region, emphasizing the enduring bond between Moananui peoples and their environments, which they have nurtured and inhabited for over two millennia.

Ultimately, Maumoana's findings underscore the transformative potential of integrating indigenous knowledge with contemporary regenerative practices. By establishing a cohesive framework that aligns with the intrinsic values and structural features of Moananui, Maumoana paves the way for the development of sustainable, culturally resonant solutions for Palauli Plantation and beyond. This approach not only revitalizes traditional knowledge and practices but also fosters a vision of development that is both ecologically restorative and socially empowering. Through Maumoana, we advocate for a future where Moananui communities thrive in harmony with their environment, ensuring that the wisdom of the past continues to inspire and sustain the well-being of future generations.

Fua'iala: Prehistoric Samoan living systems

In Chapter 02, the study presents the fua'iala system as the prehistoric Samoan living system. The term fua'iala, translating to "unfolding pathways" with "fua" meaning to measure or unfold and "iala" referring to pathways or arising, encapsulates the dynamic and vital essence of traditional Samoan spatial and community understanding. Historically, fua'iala described a subdivision within a village but carried a broader significance, emphasizing continuous movement and connections—essential elements in the ongoing process of creation and becoming. This notion contrasts starkly with the contemporary use of nu'u, derived from "na u'u" (meaning to hold or grasp firmly), which connotes a more static and possessive relationship with space, indicating a significant shift in the cultural perception of dwelling spaces over time.

The reinterpretation of Samoan living spaces from fua'iala to nu'u marks a cultural evolution from fluidity and vitality to a more fixed and identity-bound concept of community and place. This shift is explored through seminal works by scholars like Jackmond, Martinsson-Wallin, and Refiti, who have been instrumental in positioning fua'iala within a holarchical framework. Such a framework reveals fua'iala as an indigenous regenerative system, characterized by its dynamic and interconnected nature, where space and community are perpetually evolving entities. Fua'iala not only represents a segment of village life but encapsulates a deeper, more integrated worldview where land is revered not merely as a resource but as a living entity that nurtures and is nurtured by the community.

The concept of fua'iala resonates with similar indigenous systems across Oceania, such as the ahupua'a in Hawai'i, the tapere in the Cook Islands, and the kaainga in Aotearoa. Each system integrates community, land, and resources within a holistic framework, showcasing an indigenous methodology of coexistence with nature. Fua'iala exemplifies a profound connection to the land, emblematic of Indigenous Samoan knowledge and practices. It stands as a model of resilience and adaptability, illustrating how indigenous communities have cultivated sustainable living practices deeply intertwined with their cultural identity and environmental stewardship.

In summary, fua'iala not only challenges contemporary notions of space, property, and community organization but also offers an alternative paradigm for environmental

management and communal living. This system emphasises the importance of connections and pathways rather than static boundaries and individual ownership, contributing significantly to discussions on environmental conservation, sustainable development, and the revival of indigenous methodologies. As such, fua'iala serves as a vital component in the development of Maumoana, embodying a regenerative framework that leverages indigenous wisdom to foster living systems in harmony with their natural surroundings. This indigenous approach, with its deep-rooted principles of balance, reciprocity, and respect for the environment, is crucial for the ongoing revitalization and sustainability of Moananui communities and their ecosystems.

Maumoana: A design framework for regenerating Moananui living systems

In this study, Maumoana emerges as a regenerative design framework that fundamentally reframes Indigenous Moananui spatial worldviews to rejuvenate and regenerate Moananui living systems. As a framework, Maumoana guides communities, institutions, and governments to perceive Moananui living systems with a "new mind", and offer culturally appropriate strategies for revitalising Moananui living systems. This transformative approach encourages the adoption of systemic strategies that enhance resilience, foster self-determination, and instill hope across Moananui communities, making it a pivotal tool in regional development.

Central to the methodology are the indigenous concepts of "Mau" and "Moana," which encapsulate the resilience and identity integral to Moananui. "Mau," signifying perseverance and the steadfast preservation of cultural worldviews, reflects the enduring strength and resilience of Moananui communities. Meanwhile, "Moana," representing the expansive and interconnected nature of the ocean, underscores a shift from traditional Western notions of identity towards a more holistic understanding of the environmental and cultural interconnectivity in Moananui. These concepts together provide a profound foundation for rethinking and reshaping the regional development paradigms, promoting a deeper connection with the cultural heritage and environmental ethos of the Pacific peoples.

By integrating the principles of "Mau" and "Moana" into its core, Maumoana challenges conventional design and development frameworks dominated by Western-centric perspectives. It offers a culturally resonant approach that prioritizes key values and systems indigenous to Moananui, facilitating the regeneration of living systems within the region. This methodology not only aligns with the cultural preservation and creative sovereignty of Moananui communities but also provides a framework for nurturing environments that sustainably support the social, cultural, and ecological needs of these communities.

Moreover, Maumoana evolves as seven crucial spatial frameworks - Vā Moana, Mauri Moana, Mana Moana, Vanua Moana, Ara Moana, Wao Moana, and Mau Moana – these spatial frameworks are essential for the revitalization and restoration of the region's ecological and cultural integrity. These frameworks, enriched by additional spatial concepts critical for their application in real-world projects, ensure that the regeneration initiatives are deeply embedded in the indigenous knowledge systems of Moananui. By weaving these principles into regenerative developments, Maumoana not only redefines the landscape of regional development but also sets a precedent for how indigenous knowledge can lead contemporary practices, ensuring that Moananui communities thrive in harmony with their natural and cultural heritage.

Regenerating Palauli Plantation

Chapter 05 illustrates the practice-led component of the study, detailing the application of the Maumoana framework at Palauli Plantation. The design development aids the Regenerative Feasibility Study (RFS) propelling the objectives of OFN Properties Limited (OFNPL) towards the sustainable protection and conservation of both cultural and ecological heritage. The RFS aims to foster the relationship between OFNPL with neighbouring villages and various stakeholders on national and international levels, aiming to weave a network of partnerships that reinforce OFNPL's financial viability and deepen cultural relationships. Such a regenerative strategy is vital not only for the conservation of Palauli Plantation's tangible and intangible heritage but also for securing its legacy for future generations of Savai'i and Samoa.

The Maumoana Regenerative Design Framework is central to guiding the sensitive development of Palauli Plantation, focusing on rejuvenating its 'mau'—the essence and cultural significance of Samoan settlement patterns and their broader impact on the Moananui region. By embedding these principles into the development process, the approach not only respects but actively enhances the cultural and environmental fabric of the site. This adherence to local cultural values and traditions strengthens the ecological and cultural resilience of the plantation. Although the Regenerative Feasibility Study's initiatives remain in the preliminary stages, they represent a thoughtfully constructed suite of actions designed to mend and enrich the familial and cultural dynamics at Palauli, especially concerning the conservation efforts surrounding the Pulemelei Mound, and surveys conducted by Gregory Jackmond.

Further spatial exploration within the chapter showcases how the Maumoana framework could transform the development of Palauli Plantation. It details practical examples and activities aimed at reconciling relationships and delivering substantial cultural and economic benefits, thereby promoting a development process that is both ecologically sustainable and culturally sensitive. The application of Maumoana not only redefines existing relationships but also pioneers economically sustainable practices that benefit all stakeholders involved. This approach models how Samoa could holistically protect, conserve, and celebrate its living systems, setting a significant precedent in Samoa and Moananui at large.

In conclusion, this study underscores the potential of the Maumoana framework as a critical tool for Moananui leaders, governments, designers, and developers, illustrating its capability to regenerate living systems and revitalise spatial concepts within both village and urban contexts across Moananui. As such, Maumoana not only serves as a practical guide but also as an inspirational blueprint for fostering a legacy that honors and safeguards the cultural values and identities of Samoa, demonstrating a profound commitment to sustainable and culturally integrated development.

Maumoana research evolutions

In the spirit of regeneration, there are several areas for future research evolutions that are pivotal for the continued exploration and revitalisation of Moananui living systems, especially within the context of Samoa and the broader Pacific region. Firstly, there is a pressing need for enhanced engagement with Samoan cultural and thought leaders to deepen our understanding of the fua'iala system. This involves examining the cultural evolution of fua'iala, understanding its hierarchical structures, and exploring its potential contributions to urban and cultural landscape regeneration in Samoa. Such engagement will facilitate a more nuanced appreciation of how traditional systems can be integrated into modern urban contexts, thereby enriching the cultural fabric and ecological resilience of Samoan communities.

Secondly, the exploration of Moananui living systems should be expanded to include a visual mapping that captures their diversity, nuances, and shared heritage, similar to Sean Connolley's land-art projects and Julia Watson's illustrations of indigenous living systems globally. This visual documentation is crucial for educating future generations about the preservation and evolution of these systems. Understanding these living systems in detail will enable more effective conservation efforts and provide meaningful insights into their roles in sustaining cultural identity and ecological balance within the Pacific communities.

Furthermore, recognising the limitations of current research scopes, which predominantly focus on Eastern Pacific cultures, it is imperative to broaden research initiatives to encompass the entire Pacific region. This expansion is essential for capturing the full spectrum of living systems that underpin the world's most diverse indigenous ecosystems. By doing so, researchers can foster a more comprehensive understanding of the interconnectedness of these systems and their critical roles in regional biodiversity and cultural heritage.

Finally, ongoing village engagement and research at Palauli Plantation are crucial. The continuous archaeological and ethnographical discoveries by the NUS Centre of Samoan Studies are unveiling significant cultural landmarks and living systems that enrich our understanding of prehistoric Samoan settlements. The regeneration efforts at Palauli Plantation offer a model for how the revitalization of traditional living systems, such as the fua'iala, can enhance the self-sufficiency and resilience of contemporary Samoan society. Moreover, the successful regeneration of Palauli could serve as a catalyst for the regeneration of other Moananui systems, potentially elevating the resilience of the entire region. This holistic approach not only reinforces the cultural and ecological sustainability of individual communities but also strengthens the collective resilience and vitality of Moananui as a whole.

What is our Mau?

In this exegesis, we have explored the profound legacy of the Mau, a movement emblematic of self-determination and resistance, which has profoundly influenced the course of independence movements throughout Moananui. The Mau is not merely a historical footnote; it is a living, breathing testament to the indomitable spirit of Moananui communities. It symbolises their enduring resilience against external pressures and their tenacious commitment to safeguarding their cultural identity and autonomy. This movement underscores an ongoing narrative—one of communities fervently protecting their way of life and consciously shaping a future that respects their traditions while fostering justice and equity.

The enduring relevance of the Mau in contemporary Moananui cannot be overstated. Today, it stands as a beacon of strength, perseverance, sovereignty, and pride, continually inspiring Moananui communities to assert their identities and navigate the complexities of cultural assimilation. The Mau's essence is woven into the fabric of daily life and collective memory, reminding us of the power of unified action and the importance of cultural and political sovereignty. It challenges us to reflect deeply on our values and the legacies we choose to embrace and carry forward.

As we consider the future of Moananui and its people, the concept of Mau provokes a pivotal question: "What is our Mau?" This question calls on each member of Moananui to identify the core values and principles that define their commitment to community, culture, and place. It encourages a personal and collective introspection on how we might continue to resist the forces that seek to dilute our cultural uniqueness and how we might build pathways towards a more just and equitable society. This question is not merely rhetorical but serves as a call to action—a mandate to fortify our cultural heritage and reassert our sovereignty in an increasingly interconnected world.

In conclusion, Maumoana is a continuing dialogue about identity, resistance, and the future of Moananui. It compels us to ask ourselves how we can contribute to the resilience and vitality of our living systems. It challenges us to redefine and reclaim our Mau in a way that honours our ancestors while innovating for the future. Thus, Maumoana is a guide to fostering a society that truly reflects the values, hopes, and aspirations of all who call Moananui home.



Figure 49

View from the Pulemelei Mound looking over Palauli Plantation (Own work).

Exh.

Maumoana Exhibition.

Title: **Maumoana:** An indigenous design framework for regenerating Moananui Living Systems.

Date: 01 - 10 October, 2025

Location: **Ngutu Kākā Gallery**
Auckland University of Technology
WM Building, Ground Level
40 St Pauls Street
Auckland CBD, 1010



Figure 50

*Image of the Maumoana Exhibition in
Ngutu Kākā Gallery 3, AUT, St Pauls Street.*

- 1 **PALAU LI PLANTATION FLY-THROUGH**
2020, Digital Video, produced by Ben Meredith and T.Lelaulu.
- 2 **MAUMOANA**
2024, print
1500 x 1500mm
- 3 **VĀ MOANA**
2024, print
1500 x 1500mm
- 4 **MAURI MOANA**
2024, print
1500 x 1500mm
- 5 **MANA MOANA**
2024, print
1500 x 1500mm
- 6 **PALAU LI PLANTATION CONCEPT DESIGN**
2024, Digital Video, produced by Phillipp Muller and T.Lelaulu.
- 7 **VANUA MOANA**
2024, print
1500 x 1500mm
- 8 **ARA MOANA**
2024, print
1500 x 1500mm
- 9 **WAO MAOANA**
2024, print
1500 x 1500mm
- 10 **PALAU LI PLANTATION**
2024, CNC Physical Model
1200 x 500mm
- 11 **PALAU LI WATERSHED**
2024, CNC Physical Model
900 x 500mm
- 12 **SAMOA WATERSHED SETTLEMENTS**
2024, CNC Physical Model
1100 x 500mm

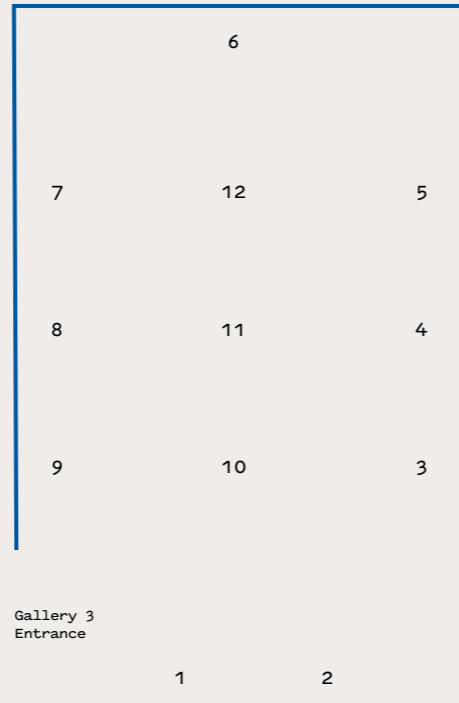


Figure 51

Map of the Maumoana Exhibition.



Figure 52

View of Prints 2, 3, 4 and 5; and Physical Models 10, 11, 12.

Figure 53

Photograph of Print 2; and Physical Models 10.





Figure 54

Prints of the Maumoana Framework; Prints 2 - 9



Figure 55

Digital Screen 1 and 6; Prints 7 -9; and Physical Model Prints 10 - 11.

Figure 56

Print 2; Digital Screen 1; and Physical Model Prints 10 - 11.

Figure 57

CNC model of Palauli Plantation;
Physical Model 12.

Figure 58

CNC model of the Samoa islands,
Physical Model 10; and Print 8.





Figure 59

Belford, Lelaulu, Newton and MAU Studio family celebrate the closing of Maumoana.

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