# South Pacific Post-Colonial Indigenous Praxis for Resilient Sustainable Community Development


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**Abstract** Indigenous communities in the South Pacific maintain traditional cultural practices of sustainable community development, which have co-evolved with local environments over centuries and millennia. The ontology of their praxis provide insight into what maintains their communities' resilient sustainable development. But the centuries of colonization and recent postcolonial endeavours, raise two issues. First, indigenous communities continue to struggle to overcome institutional racism, in terms of lost access to material resources, and socially and culturally in terms of lost agency to maintain their sustainable development. There has however been some success in doing so in the South Pacific, which can be learnt from. Second, the postcolonial struggle is a process that is also positively influencing inherited unsustainable and unjust practices associated with colonialism, which can also be learnt from. Based on community-based research with indigenous communities over three decades in primarily Samoa and Aotearoa-New Zealand, this chapter outlines key features of a methodology and the ontology underpinning it, which continues to be used by indigenous communities to guide praxis in the South Pacific. The ontology and methodology are shown to contribute to social ecological system (SES) theory. The methodology is shown to be able to form a bridge between indigenous knowledge and other methodologies, including evidence-based research and outcome-based management used by the United Nations. The chapter outlines how the methodology ensures evolutionary adaptation to enable transformation SES to avoid disasters, and to maintain continually adaptive sustainable development through maintenance of ecological resilience, social resilience, and psychological resilience. This is shown to be due to a focus on what is essential, namely social well-being and ecosystem health, and recursive adaptation maintained by transformative leadership spread throughout society, producing praxis of continuous learning at multiple levels within society.

**Keywords** Indigenous · South Pacific · Post-colonial · Social-ecological · Transformative leadership · Adaptation

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## 1 Introduction

Youth movements in the South Pacific, for example the Pacific Climate Warriors (RNZ, 2020), are acutely aware that we are entering an emerging storm of crises with epoch-making potential, and that what is currently considered to be development is inevitably going to have to change. Climate change and ecological destruction are forcing change. This process is however a contemporary manifestation of what former and current Western colonies have long known. Not surprisingly, many current narratives critical of what has been termed development are rooted in the experience of the colonized. These narratives are however only one theme. More important are pro-active development narratives, which have always been present, and continue to creatively emerge. These narratives portray development as a methodology of continual creative adaptation and are intrinsic to cultural traditions. In this chapter it is argued that a new epoch of sustainable development can be assisted to be ushered in through learning from the methodology of creative adaptation held and continuing to be created by indigenous communities in the South Pacific.

Narratives that are critical of development that began during the Western colonial era, are a subset of the methodology of creative adaptation. They are subsets that critique ideology, and often use dialectical analysis in search of liberation from hegemonic power. The methodology of creative adaptation held by indigenous communities in the South Pacific is however critical of the notion that liberation from hegemonic power is a dialectical continuation of development, which supposedly started with liberation from traditional societies (Morrison, 2019). It is a critical notion that is widespread. Jackson (2016) for example questioned the hegemonic process of economic growth for development. He concluded that hope lay in wisdom traditions' ability to better frame development. An earlier example is Weil (1952) who argued for the need for cultural roots. Some have shifted from an initial firm dialectical analysis of oppressor and oppressed, to greater recognition of need for cultural traditions to guide development (Freire, 1972). Others have theorised how a wellspring of critical creativity disrupts dialectical analysis, for example Hooks (2009) who argued for recognition of a 'thirdspace', where liberation creatively and freely emerges to transcend and redirect dialectical operation of power.

What makes the methodology of the indigenous South Pacific praxis outlined here significant, is that it provides a sophisticated and coherent methodology to engage in and out of 'thirdspace'. It is a methodology that can provide a path of liberation from the current global hegemonic development creating multiple crises. The hope of Jackson (2016), and more recently the possibility openly proclaimed by Wengrow and Graeber's (2021) reconstruction of archaeology, that development can be framed differently, is nurtured by the methodology. The methodology maintains the immediacy of a horizon of hope, in contrast to a dialectical straight jacket that restricts and puts off hope.

This chapter focuses on two features of the South Pacific Indigenous methodology. The first is how hope is maintained in its immediacy and inclusivity. The second is the recursive and integrated way in which praxis operates. The chapter first

outlines key features and relevance of the ontology of the methodology for enhanced understanding of social-ecological systems (SES). The chapter next considers three disciplines that are influenced by SES theory, and how they are enhanced by the methodology to better achieve the United Nations' sustainable development goals (SDGs). The methodology provides a sophisticated vision of sustainable development that can frame multiple cross-cutting integrative approaches to help in the achieving of all 17 SDGs. The three disciplines focused on in this chapter namely disaster risk reduction (DRR), ecological engineering and ecological economics do not exhaust the possible contributions.

## 2 Indigenous South Pacific Praxis

There is a distinct openness and humanness to development praxis maintained by South Pacific Indigenous cultures. Both the openness and humanness are maintained through the noetic dimension of the underpinning ontology, which has a paradoxical expression of universalism, offering a critique of both hegemonic global development and nationalistic reactions against it. The praxis critiques a notion of globalisation that envisages a patchwork of cultures and nations, where Western culture has privileged oversight over the rest of the patchwork. The methodology sees each cultural tradition as having universal significance and potential global reach, for mutual development of all other equally universal cultural traditions.

The methodology points to global interpenetration between cultural traditions. This is a feature of noetic nature. It is how spirits co-exist. They are not defined within four-dimensional space–time. Cultural traditions are spirits that can potentially influence all other cultural traditions and each human person. Likewise, it is the spiritual or noetic nature of humans that enables human relationships of community, including between persons who participate in different cultural traditions. Furthermore, the ontology of noetic nature also determines a distinct view of sovereignty as a quality of self-determination and potential leadership that all individuals have, but also all levels of community, including families, villages, nations and higher. There is affirmation of universal individual human rights, which resonate with the integrity of villages and nations, rather than existing in tension with them. The methodology has a democratic spirit that affirms universal potential leadership for all persons, villages, and nations. The result is the nurturing of high adaptive capacity, psychological resilience, social resilience, and ecological resilience (Morrison, 2016, 2019, 2021).

An outline of the ontology underpinning the methodology can be given by describing three types of union. One is the unity found in the material reality, and a second is the unity found in spiritual or noetic reality. The third unity is the unity of the first two types of unity. There is a complex dynamic relating the three types of unity, which underpins key principles of the methodology, namely, integrity, well-being, and transformative evolutionary adaptation.

First however a working definition of sustainable development is proffered. It is framed according to the ontology of South Pacific Indigenous cultural traditions and introduces how sustainable development is best understood according to the dynamics of SES.

## *2.1 Sustainable Development and Social Ecological Systems (SES)*

The famous definition of sustainable development in Our Common Future (Brundtland, 1987) remains appropriate: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs". What does require greater focus on however is a definition of development. When engaged in South Pacific Indigenous methodology, an appropriate working definition is: nurturing social well-being and ecosystem health. When development is seen in this way it is also intrinsically sustainable. Moreover, it is a definition that entails the dynamics of SES and community development.

The multi-dimensional aspects of social well-being provided by the ontology of South Pacific Indigenous cultural traditions, include the ecological context, and hence co-evolutionary adaptive processes that can be used to enhance ecosystem health. The multi-dimensionality of these traditions accords with analyses of the social-cultural entities involved in adaptive co-evolutionary processes of SES, which can be defined as a nested hierarchy of levels of cultural knowledge (Morrison, 2016, 2019, 2021; Rappaport, 1999). The nested levels dynamically integrate the material and noetic realities, with the essential dynamic movement defined as enhancing community. Therefore, when engaged in Indigenous South Pacific methodology, the definition of development entails sustainable community development.

The value of SES theory when engaged in Indigenous South Pacific methodology is to provide a bridge with which to incorporate all scientific disciplines that pertain to SES (Morrison & Singh, 2009). The physical and biological sciences are directly relevant, as are features of the social sciences and humanities. The bridge is formed because of the relationship between social well-being and the co-evolutionary dynamics of SES (Morrison, 2019, 2021). From the opposite perspective, a particular value of South Pacific Indigenous methodology for SES theory is that it clearly frames how to maintain necessary adaptive capacity, and how this is achieved through a focus on social well-being and ecosystem health, which is experienced in the immediacy of a horizon of hope.

## 2.2 The Unity of the Material Reality

The main characteristic of the unity found in material reality is that there is one living system. It means that all living bodies are inseparable from the life of other living bodies. There is a dynamic interconnectedness that is analysed at multiple levels. This understanding forms a clear bridge with physics, for example in relation to climate change. Similarly with chemistry in relation to nutrient cycles. Also, with biology in relation to evolutionary dynamics, giving rise to emergent ecological features. But underpinning all these is the 2nd law of thermodynamics.

One form of the 2nd law of thermodynamics is that the rate of dissipation across an energy differential is maximised (Swenson, 1997). Circulation patterns emerge to maximize the rate of dissipation. The emergence of life and its dynamism can be interpreted as sophisticated circulation patterns to maximize the rate of dissipation of energy across the biosphere (Morrison, 2021; Morrison & Singh, 2009). This interpretation enables ecosystem health to be defined as inversely proportional to infra-red radiation (Swenson, 1997). The main point of interest here is that this science implies that there is a complex but singular movement uniting all life, which is also explicit in the ontology underpinning the indigenous South Pacific methodology. To use the Aotearoa-New Zealand *te reo*[1] Maori term, the unity is the *mauri*, or one lifeforce. The term *mauri* is however ambiguous. It also refers simultaneously to two other types of unity, to imply that all the types of unity are united.

As well as referring to the one lifeforce and life movement of the biosphere, *mauri* refers to talismanic features of cultural traditions. Also, the equivalent term in Samoan, *mauli*, emphasizes another meaning, namely the centremost spiritual or noetic heart of a human being, which maintains the integrity of a person, where personal relationships of spiritual interpenetration with others occur, and where a horizon of hope is experienced (Aiono-Le Tagaloa, 2003).

There are several significant complex dynamic features entailed by the unity of the meanings of the term *mauri/mauli*. One refers to the process of evolutionary adaptation that manifests *mauri* as lifeforce. A recursive process is required, which biologically means the necessity of reproduction and death, and in SES, means communication and social change. Moreover, reproduction and communication require indirect[2] emergence through use of code to provide a pattern to follow (Sharpe, 2003). Furthermore, diverse adaptations are necessary, and therefore redundancy and wastage are inevitable, and hence maladaptation co-exists alongside adaptation.

Diversity is achieved by random reassembling of blocks of code (genes in biology, symbolic language constructs in SES). This is because the essential features of an adaptation are reproduced with varying non-essential features piggybacked on, forming the block of code. There is therefore an intrinsic increase in diversity in each generation and in each communication. Evolutionary pressure however removes the least functional adaptive variations, to maintain a requisite level of diversity each

[1] The name for Aotearoa-New Zealand Maori language.

[2] Indirect emergence occurs when the emergence is the manifestation of following a pattern or map. Biologically the pattern is held by the genome, and in SES it is held by rules, protocols, and policies.

generation and in each communication. This ensures the indirect emergent evolutionary adaptation of biological species track the direct[3] emergence of the one *mauri* or life force, to maximise ecosystem health.

For human beings comprised of both material and noetic nature, the indirect emergence of social organisation uses symbolic language to produce blocks of code to indirectly create emergent social ecological system (SES) structures that fine-tune the evolutionary adaptation of human biological populations. Hence there emerges requisite diversity of SES structures to ensure that human populations attune to the one *mauri* or life force. The blocks of symbolic language produce feedforward within SES, as laws, policies, programmes, and designs, whereupon feedback is obtained through maintenance of monitoring regimes. The blocks of symbolic language necessary to ensure requisite diversity are created when seeking to produce integrated laws, policies, programmes, and designs, of which there are diverse possibilities as the system is over-determined. What is essential is defined and included, with everything else piggybacked into the integration in various ways. The methodology defines what is essential by talismanic features, also termed *mauri*, and moreover, perceived by the *mauli,* centremost part of the being of those creating the blocks of symbolic language. The process creates innovative opportunity, flexibility and redundancy, with evolutionary pressure trading off flexibility and efficiency.

Intrinsic to the methodology are cultural practices that repeatedly revisit and continually recreate the talismanic foundations, *mauri*. The cultural practices facilitate repeated regular participation in creative liminal states and *communitas*[4] or *whanaungatanga*,[5] in keeping with what some anthropologists argue is intrinsic to indigenous culture (Turner, 1969). *Mauri*, as talismanic foundations, are repeatedly recreated in *whanaungatanga* to reframe the process developing integrated laws, policies, programmes, and designs, by continually adapting the worldview, which is also argued by some anthropologists to be a characteristic intrinsic of indigenous cultures (Rappaport, 1999).

## *2.3 Unity of Noetic Reality*

The characteristic of unity found in noetic reality is that there is co-presence or community in the same space–time, which is to co-exist as community in the same place. Place is enriched by community engaged in dialogue emerging through time

[3] Direct emergence occurs without being based on a pattern or map. Ecological processes and social movements and transformations are examples.

[4] Communitas is a Latin term chosen by Turner to refer to what he considered to be a universal feature of traditional cultures. It is the experience of what forms personal relationships making community.

[5] Whanaungatanga is the Aotearoa-New Zealand Maori term for the universal feature Turner referred to as communitas. Whanauangatanga alludes strongly to the personal relationships found in family and among relations, which are extended to welcome all into the family feeling, respect, and acceptance.

and space to continually adapt to remain attuned to the one *mauri* life force and flow. This is the experience of *whanaungatanga* nurtured by cultural practices. Noetic reality is manifest in higher dimensions than four-dimensional space–time of material reality. This is explicitly recognised in the ontology, by the term *va* in Samoan (Aiono-Le Tagaloa, 2003). The Samoan concept of *va* includes the dimensions of both noetic and material reality, as well as the divine. *Va* is the co-creative space in between persons, out of which innovation and adaptation emerge. This points to two higher dimensions in *va* beyond four-dimensional space–time.

There is a fifth dimension where dialogue creates possible integrated adaptations, some of which are found to be maladaptive and some viable. One form of maladaptation is manifest by impulsive responses, due to trauma being triggered, which disengages rational decision-making in the fifth dimension (Morrison, 2019, 2021) (see Fig. 1).

There is also a sixth dimension where there is liminal insight into the one *mauri* life force, and where personal interpenetration as *whanaungatanga* occurs. The sixth dimension of *va* is where the unity of the material reality and the unity of the noetic reality are experienced as a higher unity. The sixth dimension of *va* is experienced in the centre of the being of a person, which is the *mauli*, that intuits the *mauri* as one life force, and what inspires the creation of *mauri*, as talisman, to guide and frame social organisation to attune to *mauri,* as life force.

When the sixth dimension is not manifest, the necessary flexibility for adaption is absent due to compulsion to maintain social norms and identities. To avoid such maladaptive compulsion requires openness to the fourth and highest level of cultural

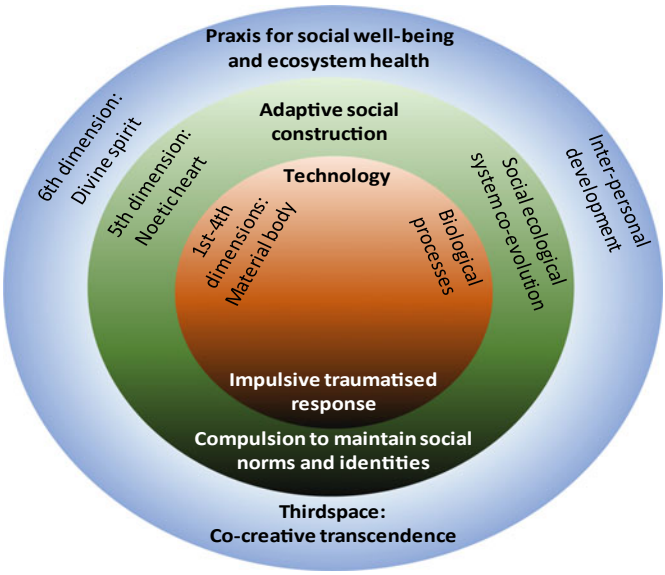


**Fig. 1** Multi-dimensional *va*

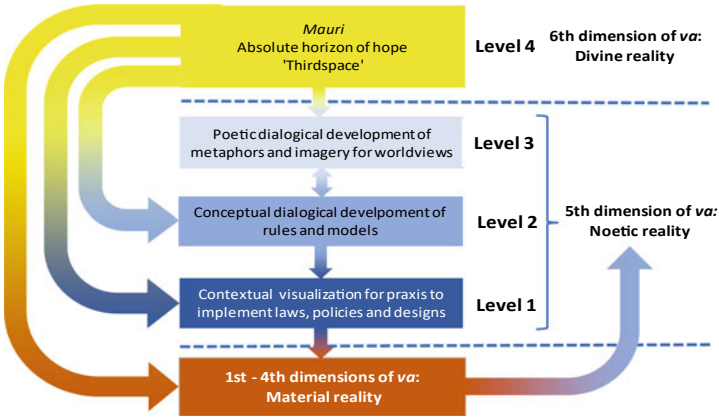


**Fig. 2** The dimensions of *va, mauri,* and the levels of cultural knowledge

knowledge defined by Rappaport (1999), namely the transcendence of conceptual symbols to a horizon of possibility (Morrison, 2016, 2019, 2021) (see Figs. 1 and 2).

The fifth dimension of *va* is manifest through use of metaphors, concepts, and visualisation. They are manifest as the lowest three levels of cultural knowledge defined by Rappaport (1999). At the lowest level there is contextual visualisation of the implementation of laws, policies, programmes, and designs. The praxis implements rules or models co-created by dialogue with concepts at the second level. The conceptual rules or models are framed by worldviews at the third level, which are explored through poetic dialogue creating metaphors. All three levels of activities in the fifth dimension also however manifest the sixth dimension of *va* (see Fig. 2).

At the first level of Rappaport's (1999) model of the levels of cultural knowledge, laws, policies, programmes, and designs are implemented with emotional intelligence through attentiveness to what maintains community relationships. They are implemented with their purpose in mind, which is to enhance social well-being and ecosystem health: rules or models are modified by intuition of *mauri* in the sixth dimension of *va.* At the second level, plausible integrated adaptations of rules or models are created through dialogue and compromises to accommodate differences. What are allowable compromises do not contravene social well-being and ecosystem health. They are also discerned through intuition of *mauri* in the sixth dimension of *va.* At the third level, there is creative exploration through poetic dialogue of new ways to frame situations. Poetic creativity is expression of liminal awareness of *mauri* to maintain *whanaungatanga* in the sixth dimension of *va.* Shining through all these manifestations of the sixth dimension of *va* is what the fourth and highest level in Rappaport's (1999) model alludes to. This is a horizon that inspires metaphors to guide the creative framing of paradigms and worldviews (Morrison, 2016, 2019, 2021; Morrison & Singh, 2009). This is where hope is experienced. Rappaport (1999) emphasized that there are principles that encapsulate the horizon, but such principles only allude to it. The methodology requires the experience of the horizon, which is

the sixth dimension of *va*, through participation in cultural practices that nurture liminality and *whanaungatanga* (Morrison, 2016, 2019, 2021). It is an eternal horizon and so inspires absolute hope. It transcends the horizon of mortality that is intrinsic to the material reality of life and connects to the divine. One reason why experience of the absolute horizon of eternal and infinite hope is necessary, is because otherwise it is difficult to avoid denial of the horizon of mortality intrinsic to material life, which includes perpetual change in the reality of human social organisation. The methodology recognises that attempts to discover and maintain permanence in natural life and social organisation, including cultural traditions, are maladaptive.

There is an implicit fullness of the juxtaposed multi-vocal polysemy of *mauri*, discovered and explored poetically at the third level of cultural knowledge. In Samoa, this is still carried out using a chiefly (decision-making) dialect focused on use of creative imagery (Morrison & Singh, 2009). The meaning discovered is of divine interpersonal unity experienced as flowing out of the sixth dimension of *va* to constitute both the unity found in the fifth dimension of noetic reality, and the unity of material unity in four-dimensional space–time. The implicit fullness of the meaning of *mauri* is that it is both the one direct emergence of the life force in material reality, and the one direct emergence creating multi-vocal polysemy to provide rational coherence of socially constructed symbols constituting the indirect emergence of SES. This experience is encapsulated by further multivocal polysemy, for example by the terms *hapu* and *whanau* in Aotearoa-New Zealand *te reo* Maori. *Hapu* refers to the basic social unit, but also womb. *Whanau* refers to a family of interpersonal relationships, but also birth. The implicit fullness of the meaning of *hapu* is that a society dwells in the fifth dimension of *va* in an ecological place as in a womb; giving birth to *whanau* or families of interpersonal relationships, of *whanaungatanga*, which transcend the fifth dimension of *va* to be reborn, co-creatively transcending, roles and identities into the sixth dimension of *va*; that of absolute hope transcending the adaptive social ecological womb, as community—sustainable community development.

The implicit fullness of the meaning of *mauri* is focused upon in *va*, whereupon what is essential is held onto. This focus on what is essential, and the creating of integrated adaptations that hold onto it, are what paradoxically drives transformational change (Morrison, 2019, 2021). But the non-essential features, piggybacked onto essential features, are what produce transformational change. The non-essential is what can transform. Discernment therefore between what is essential and non-essential is a pre-requisite for pro-active transformative adaptation. It is at the essence of the methodology. Delusory fixation on what is merely projected to be permanent, is unmasked as not truly essential. This is extremely pertinent because trust and reliance on capital by Western development is questioned by the methodology, and the socially constructed framing of capital is critiqued as ideology. Capital is emphasized to be impermanent, and moreover, not the basis for adaptive capacity.

## 2.4 Sovereignty and Leadership

The foundation for focusing on what is essential, namely social well-being and ecosystem health, is the experience of *whanaungatanga.* Creatively exploring ways to practically maintain *whanaungatanga* is the key feature of the methodology. It involves liminal experience of *mauri* in openness to *va*, facilitated by protocols and cultural practices. The experience is also, to use the Aotearoa-New Zealand *te reo* Maori term, the source of *rangatiratanga*, or sovereignty. Every person has *rangatiratanga.* All are potentially *rangatira*, or leaders. Leadership is manifest through the *mauli* being attuned to the *mauri* and expressing *mauri*. The leadership manifest by *mauri* is transformative leadership (Montuori & Donnelley, 2018; Morrison, 2019, 2021). The protocols and cultural practices aim to empower the leadership potential in all, along with the unique contribution each can make.

As well as ensuring inclusivity of all potential leadership, the protocols of the methodology facilitate engagement by leaders with all three lower levels of knowledge. There is a vertical dimension to use of language, simultaneously rising above rules or models to critically reframe them, as well as relativising them through concern for their appropriate contextual implementation. Moreover, transcending symbolic content, nurtured by dance and music, the highest level of the horizon of absolute hope in *va* is opened to.

Potential leadership operates at every level of social organisation. It is manifest within families, in village communities, and in nations, and higher. For example, traditionally, Samoan families have inclusive meditative protocols each evening, before eating, with discussion of issues following if necessary. Also, every Samoan village has a *fono* or council where representatives of every family meet weekly to critically maintain the rules of the village (Morrison & Singh, 2009). Likewise in Kiribati, every village has a *mwaneaba*, which is a dedicated house where free expression to raise issues concerning the village is facilitated, including the meeting of visitors (Morrison, 2021). It also occurs at the national level. A current national Samoan leader, the prime minister, Fiame Naomi Mata'afa, has termed it a whole-of-society approach, and has pointed out that it enables responsiveness to feedback, for example from the UN about how to overcome limitations found in provision of human rights (RNZ, 2021b, Mata'afa, 2020).

The transformative leadership approach also makes nations very open to and capable of participating in regional and global forums, and to learn from their feedback. There have emerged very effective South Pacific multi-national regional organisations for scientific, environmental, and tertiary education collaboration. Moreover, South Pacific leaders, including youth, are proving themselves to be capable global leaders in relation to climate change (Membere, 2021a, 2021c, 2021d). Another clear example of the methodology in response to climate change was expressed by the Samoan minister for Commerce, Industry and Labour, Leatinu'u Wayne So'oialo, at a COP26 side event, stating that people's jobs and well-being are central to a transition to a carbon neutral and climate resilient economy (Membere, 2021b).

## 3 Disaster Risk Reduction (DRR) for Sustainable Development

Disasters are socially constructed. Disasters can be avoided, by avoiding making them. The methodology enables disasters to be avoided. In doing so the methodology enables a cross-cutting integrative means to help achieve multiple sustainable development goals (SDGs). The SDGs the methodology particularly contributes to enhancing when applied to DRR are: Goal 9 *Industry, Innovation and Infrastructure*; Goal 11 *Sustainable Cities and Communities*; Goal 13 *Climate Action*, and Goal 16 *Peace and Justice Strong Institutions*. The methodology does so by understanding what is natural. Unlike disasters, catastrophes are natural and inevitable. Catastrophe theory proves that whenever there is maximization of a state described by more than two variables, catastrophic pathways become possible, either as collapses or unsurmountable walls (Morrison, 2021; Thom, 1989). Given that the one *mauri*, life force, can be characterised by the maximising of the rate of energy dissipation across the biosphere, natural catastrophes are intrinsic throughout life. The methodology realistically recognizes this, which makes it possible to plot pathways that avoid disastrous participation in natural catastrophic changes. Ironically, it is failure to recognize this, as found in the presumption that control of nature is possible and that development requires liberation from traditional cultures embedded in nature, that creates disasters.

The methodology intuits a topology of natural catastrophe surfaces, to determine pathways of adaptation that avoid disastrous participation in naturally occurring catastrophic changes. The methodology does so by avoiding both naive naturalism and presumptive ability to control nature, through a nuanced understanding of what is natural. What is natural wilderness, is different to human nature. Human nature does attune to the *mauri* of natural wilderness through SES that utilize ecosystem services to fulfil the needs necessary for social well-being, but is simultaneously aware that ecosystems naturally manifest catastrophic changes, and so requisite diversity of SES adaptations is necessary to sidestep creating disasters. Human nature can do so because it creates talismanic *mauri* to guide maintenance of social well-being and ecosystem health, through attentiveness by the noetic *mauli* centre of a person. The result is dialogue and collaboration to co-create requisite diversity of integrated structures in SES, so that what is essential, social well-being and ecosystem health, are maintained, and hence disasters are avoided.

To be able to choose paths of adaptation avoiding naturally catastrophic changes however also requires the flexibility to be able to change the direction of pathways. This requires continuous recursive adaptation, to update discernment of what directions to avoid. Continuous recursive adaptation come from the nested dialogue, planning, and monitoring of consequences, from families to villages, to nation, and higher. Discernment comes from transformative leadership similarly nested, where every person is contributing to DRR by producing potentially useful feedforward, and by providing feedback through engagement in monitoring of the consequences of previous decisions.

Through monitoring of ecosystem services, regeneration of ecosystem health is nurtured, and ecological resilience is maintained by helping maintain diverse and redundant ecosystem services. Through participation in cultural practices that nurture liminality and *whanaungatanga*, psychological resilience is nurtured, which then provides the emotional intelligence to maintain social resilience for a coherent and flexible SES.

The processes in the methodology that maintain psychological and social resilience for DRR are sophisticated. Firstly, given that maximisation naturally results in catastrophic change, maintaining psychological and social resilience focuses on moderation coupled with careful and cautious recursive creation of feedforward and monitoring of feedback. Then the instability and impermanence of the natural world exhibiting intrinsic catastrophic change, are seen in the context of the horizon of absolute hope, and so the compromises and sacrifices necessary for social well-being can emotionally be chosen.

Furthermore, the methodology ensures that the ability to choose the compromises, sacrifices and moderation carefully and cautiously is not drudgery. It certainly involves discipline and perseverance, but the methodology also nurtures hope in an extremely resilient SES that resonates joyfully into existence when these choices are made. It is also the optimal sustainable state. As psychotherapy recognises, moderation facilitated by cultural constraints produces optimal sustainable pleasure and freedom (Morrison, 2019, 2021; Santner, 2001; Verhaeghe, 2014). Maximum positive feedback is achieved through careful and cautious perpetual learning to be moderate. But what most reinforces the character of such recursively made choices is noetic consolation from the horizon of absolute hope. It enables the inevitable pain of natural life to be tolerated. It transfigures the horizon of mortality, inevitability of biological death, and impermanence of all human creativity, to become a means by which to participate most fully into the sixth dimension of *va*, through self-sacrificial giving of self for *whanaungatanga.* At this point the methodology nurtures absolute psychological resilience. Such persons are very powerful leaders, maintaining social resilience by their very presence. The methodology even empowers youth into such leadership. As a young Samoan spokesperson, Brianna Fruean, at COP26 stated, the South Pacific youth are "resilient beacons of hope" (Membere, 2021a). This understanding implicit in the methodology is very pertinent to help achieve three further SDGs, namely: Goal 4 *Quality Education*, Goal 5 *Gender Equality*, and Goal 12 *Responsible Consumption and Production.*

The methodology also deals successfully with worst-case scenarios carefully and cautiously, to avoid disasters. In the South Pacific facing climate change this is migration. Perhaps surprisingly, given the strong cultural link to geographical place, even though migration is still considered the worst-case scenario, it is nevertheless accepted as an adaptation option. It already has occurred in several coastal villages in Fiji, and the entire country is being continually assessed to plan for internal migration that may become necessary due to climate change (Morrison, 2016, 2021). The reason why it is accepted is due to migration being constructed as an adaptation option to ensure that what is essential and most important is maintained. There are instances where relocated villages are grateful as their situation has improved. The point is that

their village SES was adapted to ensure their social well-being was enhanced. The same reluctantly positive acceptance of international migration occurs if communities can continue to maintain and enhance their cultural life and communities in their new homes (Morrison, 2016). What is the most serious challenge in relation to international migration is unwillingness of host countries to accept the communities and cultures, by refusing them environmental refugee status. The methodology needs to also be implemented by potential host countries. There is need for leadership from potential host countries to ensure that forced international migration does not become a socially constructed disaster. The disaster can be avoided by implementation of the methodology, to ensure environmental refugees are treated humanely, and their psychological resilience, social resilience and ecological resilience are maintained. This feature of the methodology therefore also directly enhances the achieving of the SDGs Goal 11 *Sustainable Cities and Communities*, and Goal 16 *Peace and Justice Strong Institutions.*

## 4 Ecological Engineering

The methodology enhances the design process by clarifying the goals of engineering design. Ecological engineering focuses upon utilisation of biological structures providing ecosystem services and combines them with physical structures. Whereas ecological engineering adds biological structures to material and digital construction carried out by other forms of engineering, the methodology adds social-ecological structures as well. The methodology ensures that engineering construction is a nested feature of SES. Ironically this emphasizes the universal importance of engineering. But it also emphasizes it is continually evaluated and socially reconstructed. This ensures the potential adaptive capacity of engineering and avoids delusory ideological belief in permanent technological solutions. The adaptive approach of the methodology enhances multiple SDGs. How the methodology inspires ecological engineering provides a particular type of innovation to Goal 9 *Industry, Innovation and Infrastructure*, Goal 6 *Clean Water and Sanitation*, and Goal 7 *Affordable and Clean Energy*, as well as having a direct bearing on Goal 13 *Climate Action.*

The methodology also ensures the goals of engineering design are recognised as feedforward, which are recursively evaluated through feedback from monitoring its implementation, as praxis of continuous adaptive learning. Engineering goals are recognised as intrinsically impermanent and in need of continual assessment to avoid disasters, through focusing on what is essential, namely social well-being and ecosystem health. But what is essential is intangible, and so new representations of social well-being and ecosystem health are also continually required at all levels. For example, the methodology guides national and regional community-based approaches in the South Pacific, both in the development of multi-sectorial integrative approaches, as well as adaptive community-based development of indicators and monitoring regimes (Morrison, 2021). Max-Neef et al. (1991) distinction between

the multiple possible 'satisfers' that fulfil universal needs, and Bossel's (1998) analysis of generic system 'orientors', are similar approaches (Morrison, 2019, 2021; Morrison & Singh, 2009).

The methodology nests engineering design, including coordinated utilisation of ecosystem services, in a decentralised manner throughout the whole community, at multiple levels. The methodology ensures recursive dialogue and transformative leadership guide engineering. The methodology ensures the features of adaptations carried out by ecological engineering are revisited and redesigned at each recursion, whenever and wherever transformative leadership is expressed, in families, villages, the nation, and higher. But the horizon of *va* in which it is carried out, and the principles of social-well-being and ecosystem health remain the same to guide the process in *whanaungatanga.*

The methodology ensures that ecological engineering is an adaptive process, and by doing so reframes how adaptive capacity is usually understood. Generally, adaptive capacity is presumed to be provided by access to capital. Even though capital can be of different types, what is common is that it is something available at hand and kept in some sort of storage. For example, ecosystem services are natural capital that is waiting to be used when required. Capital therefore provides options, and hence adaptive capacity is enhanced by having access to the available storage. The methodology however critically reframes this view of capital and adaptive capacity.

In the methodology, adaptive capacity is understood to be a focus on what is essential, which frees up unnecessary concern for what is not essential. Even though what is non-essential is still addressed, it is done so by maintaining requisite diversity of adaptation options. It is not sought to be addressed by ensuring there is adequate capital. Rather, adaptive capacity is understood to derive from continually re-creating requisite diversity of adaptive SES structures, which is, as already pointed out, a process that is very resilient. The usual relationship between capital and adaptive capacity are therefore reversed by the methodology. Capital is framed rather as consequent on adaptive capacity. Adaptive capacity that is gained from capital is seen in the methodology as a secondary and derived adaptive capacity, and potentially a delusory maladaptive fixation that obscures what is truly essential.

An example of the methodology is the planned 'public model' for provision of potable water, stormwater services and wastewater treatment in Aotearoa-New Zealand (RNZ, 2021a). It has been driven in partnership between the government and Aotearoa-New Zealand Maori communities insisting that all communities in the nation have access to and equal quality of service. Infrastructure is planned to be removed as a capital asset used exclusively to benefit those who own the capital. Through the infrastructure becoming a public asset it is planned to be continually reconstructed and adapted to ensure social well-being and ecosystem health are maintained. Even though the planned transformation of services has been criticised as centralisation and robbery from local ownership, the reliance on transformative leadership will paradoxically ensure that local councils and communities remain the operators of the services, and moreover will be empowered to do so in a way that is

neither constrained by access to capital, nor forced to lose focus on social-well-being and ecosystem health because of pressures to obtain capital and bring a return on invested capital.

## 5 Ecological Economics

The fields of both microeconomics and macroeconomics are implicated in the methodology. The methodology contributes to both fields, in ways that help integrate the two fields. The contributions come from the focus on what is essential, namely social well-being and ecosystem health. Firstly, because participation in cultural practices and protocols to nurture inclusive transformative leadership operate by establishing, nurturing, and affirming continual recursive careful and cautious moderation, maximization of consumption is avoided. Moreover, maximization of self-interest, even in relation to essential needs, is tempered by the focus on social well-being and ecosystem health. Guidance is provided to help achieve SDG Goal 12 *Responsible Consumption and Production.*

In terms of microeconomics, a nuanced understanding of economic agency is maintained. The economic agent is the extended family. It is an economic agent that has secure capability to maintain its well-being because families are intrinsic to a SES and a place. Families are agents in *va.* In short, access to resources is a birth right, and still maintained in many South Pacific islands. It does not need to be bought. The effect of this is to make the interaction between families creatively competitive, but without desperation. More often, collaboration is the norm, and paradoxically facilitated through a strong cultural imperative to give whatever is being asked for, along with an equally strong imperative of reciprocity. The result is that families proactively seek to assist all families to become successful independent economic agents (Morrison, 2008; Morrison & Singh, 2009). Due to the use of emotional intelligence to respect how others are feeling, along with regular village community discussions with representatives from each family, the concern for others is sincere. The noetic consolation of social well-being in absolute hope is maintained, and hence strong social resilience and ecological resilience of the village community resonates. The strength of a village is recognised by its ability to maintain its adaptive integrity and sovereignty in this way. Once again, seeking the SDG Goal 11 *Sustainable Cities and Communities* is enhanced.

In terms of macroeconomics, the methodology gives hope that there is freedom from a supposed inexorable law demanding economic growth. The methodology gives an alternative to progressive taxation redistributing inequitable flows of capital (Piketty, 2014), and to supposed 'green' growth that would make it possible to sustainably avoid reliance on progressive taxation, through an ever-increasing pool of capital (Jackson, 2016). The methodology cuts at the core of the problem, by framing SES as continually socially reconstructing capital. Capital is seen as a mutable feature of a SES that is made temporarily available for the community, and the availability is continually re-evaluated. The methodology assures access to ecosystem services

for all families, but the degree of access is determined by what maintains social well-being and ecosystem health. It means that progressive taxation is helpful to enforce the cultural mandates in the methodology, but it rejects, in keeping with overwhelming evidence, that sustained growth is possible (Jackson, 2016). The methodology counters the cause of the supposed inexorable inequitable flow of capital, green or otherwise, by not socially constructing capital in a way that enables it to accumulate into a store for those who own it. The methodology shows how it is possible to decrease consumption, resulting in not only short-term economic recession but even sustained economic depression, to enhance ecosystem health as well as social well-being. This feature of the methodology is very pertinent to achieving the SDG Goal 8 *Decent Work and Economic Growth.*

Where microeconomic concerns and macroeconomic concerns meet, the methodology can help transform global crises. COP26 in Glasgow saw least developed countries in the South Pacific, who are the most vulnerable to climate change, arguing for compensation for climate change loss and damage from the countries who have caused climate change (Membere, 2021b, 2021d). The call was not heeded, but the methodology shows why it would have been wise to do so. The methodology at the microeconomic scale ensures village resilience through facilitating economic independence and well-being of each family. This can also be applied to economically struggling nations. Not only compensation for loss and damage from climate change, but also global restructuring of SES to remove debt that is destructive of social well-being and ecosystem health, would benefit the global community and its resilience. The SDG Goal 16 *Peace and Justice Strong Institutions* can be enhanced by use of the methodology, to ensure every country is able to prosper.

Maladaptive social construction of capital is part of the global SES in need of transformation. The methodology gives hope that it is possible and shows how. It is not through dialectical revolution, using power, but rather through democratic transformative leadership spread throughout the whole community. It occurs through respecting universal human rights, and through facilitating the integrity of families, villages, and nations to be able to continually adapt within *va*, attuned to *mauri*. As already outlined, this continual decentralised transformative leadership facilitates SES transformation through recursive incremental evolutionary adaptation focusing on what is essential, namely ecosystem health and social well-being. It can ensure the supposed inexorable flow of capital from the poorest most vulnerable developing countries to the wealthiest is stopped, as well as stopping it within villages and nations, through persons, families, villages, and nations choosing to live within the capacity of their ecosystems and to enhance their health, through careful and cautious moderate use of capital that ecosystems can provide. The methodology indicates that surpluses can and should still be traded, if not gifted, to assist others in need of capital, but it is maladaptive to do so if it compromises ecosystem health and social well-being. This transformative leadership nurtured by the methodology helps achieve the SDG Goal 17 *Partnerships to Achieve.*

Moreover, as also already outlined, adaptive SES are very resilient and are maintained by strongly reinforcing systems. Such SES are therefore possible alternative states that could be chosen to be tipped over into as the current storm of crises begins

to destabilize existing maladaptive SES. It does not need to be falsely assumed that the already existing crises will inevitably lead to worse states. The methodology gives hope and shows how to transform maladaptive pathways into adaptive ones that are very resilient and avoid disasters. Co-evolutionary selection is also likely to ensure such adaptive pathways resonate, as spirits, to influence persons, families, villages, and nations globally, as they have already done so within and between indigenous communities for millennia in the South Pacific. For millennia indigenous communities in the South Pacific have been adapting to ever seek better means to achieve what are now framed as the SDGs Goal 1 *No Poverty*, Goal 2 *Zero Hunger*, and Goal 3 *Good Health and Well-Being*. The methodology shows how this can be done.

## 6 Conclusion

The South Pacific Indigenous methodology outlined here is very pertinent for the SDGs because it opens pathways for collaborative and integrative transformative adaptations to achieve them. Even this briefest of outlines emphasizes how the methodology enables emergence of self-reinforcing very resilient, flexible, and continually transforming SES. The methodology facilitates the possibility for societies to reframe themselves as adaptive SES to achieve the SDGs. Even though the ontology underpinning the praxis of the methodology provides a necessary guiding worldview in the South Pacific indigenous communities, equivalent adaptations can be recovered and developed elsewhere. Also, to have this South Pacific Indigenous methodology already operating, and increasingly globally available to influence and to be learnt from, helps make it possible.

The universal hope the methodology provides is that continuous incremental adaptation with a correct focus on what is essential, can facilitate transformative change to emerge, and moreover gives everyone a meaningful role to play to help. The whole-of-society approach of the methodology provides an authentic postcolonial expression of sovereignty and leadership, which respects universal human rights and is empowering of every person, community, and nation. This methodology nurtures hope and resilience to dwell within the whole society. This is well symbolized by South Pacific youth leaders who, instead of allowing themselves to be framed as vulnerable victims, showcase themselves as global resilient beacons of hope. Everyone, in their family and village, as well as if they have a national role, and regional, or United Nations role, know that they are making a difference to enhance social well-being and ecosystem health to avoid disasters. There is no better way to support the SDGs.

The methodology does however seriously challenge the still dominant Eurocentric and neo-colonial models of development (Morrison, 2008, 2019). The methodology is firmly postcolonial, post-capitalist and post-growth. But it is inevitable that there will come a time when this sort of transformation will be sought as a catalyst, as tipping points in the current storm of crises are reached. What is especially pertinent about the methodology is that the means for transformation through democratic evolutionary adaptation is not inherently threatening to even dominant

nations. Power to overthrow is not part of the methodology. Rather the methodology proactively seeks to integrate with useful methodologies within the current dominant development models (Morrison, 2019, 2021), and to seek collaboration and partnerships. The centrality of recursive adaptation in the methodology, means that monitoring is intrinsic to the operation of the methodology, and so is fully compatible with United Nations evidence-based research and outcome-based management, albeit of community-based forms, to monitor indicators for the SDGs. Moreover, the understanding of sovereignty at all levels, affirms rights-based approaches, as well as sectors targeted by the SDGs. What the methodology however adds to the dominant discourse associated with the SDGs, is the need for integration of the wisdom found and continuing to be discovered and expressed by the humanities, with that found in the continually developing scientific and engineering disciplines. The methodology facilitates dialogue by scientists and engineers with their fellow citizen artists, poets and religious, to ensure that diverse plausible adaptive solutions are continually recreated in the spirit of *whanaungatanga.* Leadership of all sectors of society, with the full range of talents, is required to provide the necessary insight to stay on an adaptive pathway of sustainable development free of disasters.

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