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Chapter Twelve. Huritanga mo te mauri ora: Braided rivers and pluriversal planetary wellbeing

ABSTRACT

Wellbeing concepts are increasingly central to ecological regeneration and urban discourse. In industrial modern or settler contexts, wellbeing is normally framed anthropocentrically as relating to the human. Taking a pluriversal approach, this chapter explores place-based Indigenous-Māori wellbeing concepts. The aim here is to decolonize and indigenize wellbeing thinking to give force to Indigenous voice and actions for the salutary. The chapter explores how an indigenous-Māori ethic of mauri ora [more-than-human wellbeing] can interface productively with a planetary 'boundaries' model to draw attention to and frame actions for planetary wellbeing. The chapter asserts the importance of place-based wellbeing concepts and links human and non-human wellbeing together as an indissoluble whole.

Introduction

The recent 2021 United Nations Climate Change Conference of Parties (COP26) concluded with a flurry of urgent statements about multidimensional ecological emergency. Planetary wellbeing – understood here as a condition of ecological thriving *and* social justice (Brand et al. 2021) – is indeed in critical decline, but COP26 delivered little in the way of urgent and transformative action. Universalizing and industrial-modernist approaches – COP26 can itself be understood as an example – continue to have undue influence in politics and discourse on ecological and urban regeneration. Unilinear, homogenizing and colonizing approaches often tragically *accelerate* social, cultural and ecological crises rather than intended 'sustainable' growth-based development or conservation (Kothari

et al. 2019). The current complex planetary wellbeing emergency will not be resolved by the colonizing approaches and anthropocentric logics that caused the crisis (Yates 2019, 2021). There are now, however, more examples of diverse and place-based approaches that disclose how politics and cultures of place can enable transformative models for local and planetary wellbeing (Demaria and Kothari 2017; Dionisio et al. 2021; Kothari et al. 2019; Yates 2021).

Pluriversal or place-based approaches can help to achieve a shift in wellbeing thinking and practice, effecting a pivot from the anthropocentric to the ecological. The 'pluriverse' is a world where many worlds meet, it is a transformative activism focused to ecological and sociocultural wellbeing (Kothari et al. 2019). Pluriversal approaches to wellbeing are important as they enable diverse wellbeing concepts and practices grounded in the specifics, the ecologies, the cultures of place. Pluriversalism aims at bringing forward diverse ancient indigenous and contemporary ecological knowledges.

In Aotearoa New Zealand governance, environmental, urban and legislative frameworks are based on colonial ontologies and epistemologies. At this time of ecological crisis the challenge and opportunity is to swiftly change, ecologize, pluriversalize our cultural frameworks. He awa whiria is a place-based strategy for working across different cultures. In this chapter the he awa whiria or braided rivers model provides a methodology for interfacing between settler and indigenous knowledges, with a strategic political intention to centre indigenous knowing and improve the wellbeing of indigenous communities – human and more-than-human. For Māori wellbeing is about the vitality of diverse entities in relationship – the connected vitality of earth, sky and water entities, of birds and insects, of mists, of ancient rock, of people living all in relation. Mauri ora is an Indigenous-Māori concept of more-than-human connected wellbeing and an ethic for social, cultural and ecological justice and holistic wellbeing. Here wellbeing is more-than-human, it is the wellbeing of planet and people, whenua and whānau, always indissolubly connected.

This chapter takes a pluriversal approach as it explores a place-based planetary wellbeing model for social, cultural and ecological justice and holistic wellbeing. I 'braid' between different cultural knowledges as I introduce mauri ora [holistic wellbeing] into the widely discussed and applied

planetary science model, the planetary boundaries (Rockstrom et al. 2009; Steffen et al. 2015) to test the effect of shifting from a technical biophysical ecological decline approach to a holistic and relational wellbeing model. The central enquiry of this chapter, and the associated body of research,¹ is whether centring an Indigenous-Māori ethic of mauri ora – as human and more-than-human connection and wellbeing – can help to activate system change for wellbeing at this time of ecological emergency.

The pluriverse and planetary wellbeing

In their book *Pluriverse: A Post-development Dictionary* Kothari et al. propose place-based approaches to current complex and geographically diverse crises: such approaches are capable of ‘recognising the diversity of people’s views on planetary well-being and their skills in protecting it’ (Kothari et al. 2019: xix). Such a strategy is already transformative as it critiques and disables the globalizing normative of industrial modernity in favour of a political commitment to cultural diversity and to differentiated practices. A pluriversal approach necessarily acknowledges a range of ontological schema, allowing these to co-exist productively across difference.

In examples such as *buen vivir*, a South American wellbeing or good-life social philosophy that aims at achieving harmony between human and the larger more-than-human world, or *swaraj*, a form of participatory or direct democracy in India (Kothari 2014), ancient ontologies or cultural practices are providing a decolonizing impetus. As Demaria and Kothari affirm, these are complex conditions. *Buen vivir* or *swaraj* extend from ancient cultural ontologies or politics while also arising as contemporary political responses to colonialism, systemic sociocultural inequities and ecological dis-ease, ‘they are ancient, they are re-emerging in original or

1 This chapter is part of a larger Urban Wellbeing research programme, funded by the Building Better Homes Towns and Cities National Science Challenge.

modified forms as part of the narrative of movements that are struggling against [colonizing] development and/or asserting alternative forms of well-being' (Demaria and Kothari 2017: 2592). As place-based models these break with dominant colonial logics – andro and anthropocentric – rupturing the centrality of industrial capitalism and instead organizing culture through earth-oriented ontologies that centre ecological and social connection. These situated approaches can be a powerful means by which to initiate a necessary cultural shift, from anthropocentric to ecocentric, and system change – from linear to circular and earth-oriented – necessary at this time of ecological emergency (IPCC 2018, 2019, 2021; IPBES 2019).

In indigenous² contexts any discussion of wellbeing quickly becomes a conversation about relationships, about the interconnectedness of – everything, of life. This is the case in *buen vivir*, which emphasizes ecological and community connection and co-existence (Chuji, Rengifo and Gudynas 2019). Wellbeing is in this sense a profoundly ontological and place-based matter as it begins to disclose what 'livingness' is here, in this particular place, in this situated cultural system. 'Livingness' in these place-based contexts is not anthropocentric nor individuated but rather a radical more-than-human co-existence (Yates 2016). Pluriversal approaches aim at achieving an ecological civilization 'grounded in a relational logic: a world where everything is connected to everything else' (Kothari et al. 2019: xxix).

Indigenous knowing and braided rivers

In indigenous ontologies, wellbeing is more-than-human. Potawatomi academic Kyle Whyte defines the indigenous as a spatially diverse group with shared ecologies and temporalities, particularly a prior state of self-determining sociocultural-ecological governance systems, and a later state

2 Indigenous academic Kyle Whyte defines the indigenous as a spatially diverse group with a shared temporality, a prior state of self-determination within sociocultural-ecological governance systems, and a later state of 'imperial invasion, colonial exploitation and occupation, and settlement' (Whyte et al. 2018: 154).

of ‘imperial invasion, colonial exploitation and occupation, and settlement’ (2018: 154) with accompanying settler ecologies and governance systems (2018: 158). For indigenous cultures governance – what Whyte terms indigenous planning – is not a dry procedural or legislative matter but rather a matter of relationships, of ancestral ties with *whenua* [land] or *awa* [river], and of ethical obligations to the wellbeing of the more-than-human. Whyte describes activities of place-based future-focused indigenous collectives that develop speculative future scenarios, build capacities and strategy for current and future holistic wellbeing (2018: 155). Importantly, in an indigenous context, ‘collectives are not anthropocentric’ (Whyte 2018: 155) but are instead heterogenous groupings of active agents that include ecosystems of environmental entities – climate, ocean, earth, for example – and animal, plant, fungi and microbial beings. As Whyte outlines, the agency of such more-than-human collectives includes ethical relationships and ‘reciprocal responsibilities’ between human and other non-human beings, and a more-than-human, water entities, animals and plants for example, ‘knowledge bearers’ (2018: 155).

How can place-based more-than-human wellbeing knowledge begin to shift colonizing frameworks? In Aotearoa, Māori *iwi* [kin groups] are developing wellbeing-led *iwi* governance or ecological plans (Te Rūnanga o Kaikoura 2007; Te Tatau o Te Arawa 2020) and co-creating new wellbeing-led tools and models (Dionisio et al. 2021; Yates 2021). *Iwi* plans and tools lever space for indigenous cultural knowledge and practices alongside settler-colonial structures or shift the ontological foundations of those settler structures. Aotearoa’s Te Tiriti³ document affords *tino rangatiratanga* – sovereignty – to Māori over our governance, but in practice settler-colonial legislative frameworks structure how both Māori and settler societies live and make place. Recently hard-sought legislation has been passed that affords protection for specific ancestral rivers or land as legal personages. These were part of restorative Te Tiriti settlements to *iwi* from the New Zealand Crown (state) to redress historic land confiscations. The Te Awa

3 Te Tiriti o Waitangi is Aotearoa’s founding document. It was signed in 1840 by the British Crown and Māori representatives for *iwi* and *Hapū* [kin-groups]. There are two documents – one written in English, the other in Māori.

Tupua (Whanganui River Claims Act) 2017, for example, confers legal personage to the Whanganui river-ancestor to better protect its wellbeing as an indivisible entity. 'Ownership' of the river is now held by the river (Charpleix 2018; Collins and Esterling 2019; Hutchison 2014). Previous legislation associated with Te Tiriti settlement claims had reinscribed settler norms as rivers or land were treated as resources. The Te Awa Tupua legislation better acknowledges a kinship relationship to the river (Salmond, Brierly and Hikuroa 2019). The emphasis on the wellbeing and integrity of ancestral rivers or land as indivisible entities and personages is transformative, as it brings more-than-human ethics into the legislative framework of the land. Currently the Resource Management Act, Aotearoa's primary legislative tool for 'land use' conservation and development, is under reform with a stated aim to improve how a new natural and built environments act will better register with Māori approaches to kaitiakitanga [ecological care practices] and mauritanga [holistic wellbeing practices]. If such ethics of care could start to transform settler legislative contexts and indigenous knowledge could start to register in a more just and interactive manner. An urgent question at this time is how mauritanga [holistic wellbeing practices] and kaitiakitanga [ecological care practices] can more quickly and deeply influence extant governance approaches at this time of ecological emergency.

The he awa whiria [braided rivers] model is of interest here as it enables a strategic framework for interaction and allyship across indigenous and non-indigenous knowledge streams (Macfarlane, Macfarlane and Gillon 2015). Braiding more-than-human wellbeing knowledge streams with settler streams can be a powerful way to interface, innovate and affect cultural change. Ngā awa whiria [braided rivers] are important ecological entities in Te Waipounamu (Aotearoa's South Island). These are fluid water-landscapes, formed of shifting sands, gravels, wide but shallow flows of water, thin channels, all interweaving, overlapping, changing in a day's heavy rain, through seasons, over years and into deep geo-hydrological time. These braided rivers powerfully model a responsive, highly connected and heterogenous territory. They are a fluid multiplicity, a political metaphor or sociocultural imaginary of a space where the agency of earth, water, fish, insects, people, industry, boats, algae, bacteria and plants are

tightly interwoven. Unlike other forms of awa [rivers] characterized by a singular dominant channel, awa whiria are distinctive for their different but interacting streams. The he awa whiria model draws attention to the modelling of different knowledge streams, and the space of intermittent connection where knowledge streams merge and new knowledge, new processes and practices may be enabled (Macfarlane, Macfarlane and Gillon 2015). It emphasizes the transformative potential of displacing the colonizing singularity of Western knowledge in favour of a model that brings forward indigenous knowledge streams and multiplicity. This braided knowledge model can start to shift colonizing cultural frameworks, enabling more culturally varied and woven knowledge and practice. What is transformative here is the way that the he awa whiria brings indigenous knowledge to the surface, affording mana [agency, energy] (Superu 2018). Durie's Interface Research Framework is also of value here as it too describes the aim to create new knowledge at the interface of settler and indigenous knowing – with an aim of benefiting Māori who live between both worlds (Durie 2004). Durie writes of how deeply relevant indigenous knowledge is at this time and how interfacing between settler and indigenous research can be a 'source of inventiveness' (Durie 2004: 8). Such research is neither purely matauranga Māori research nor solely science research, but rather an interface practice whose aim should be to produce gains for Māori communities who mostly live in that space-between. I would note here that, with mauri [holistic wellbeing] and whakapapatanga [more-than-human kinship] in mind, those communities should be understood in their broadest sense as always already more-than-human as I disclose in what follows.

More-than-human wellbeing – mauri ora

Mauri ora is more-than-human wellbeing. Mauri is the vitality of all of life, it is the connectivity between earth, atmospheric, riverine and oceanic entities and other life beings including humans. Like *buen vivir* mauri ora is both ontology as it models 'livingness' as a connective more-than-human field, and also social practice, an ethical exhortation to maintain

life-field vitality (Yates 2016). Hence mauri-ora is the vitality of life lived *in more-than-human connection*. This life or ora-oriented ontology is deeply embedded into the cultural-ecological fabric of its ancestral place in Aotearoa.

Wellbeing is a structural concept that pervades through matauranga Māori [indigenous knowledge systems] as a fundamental ethico-ontological constant. Why? Indigenous ways of knowing emphasize how vitality or wellbeing is inherently a function of connectivity, how wellbeing is a condition of relationality. How does this land on the whenua-ground? This is a highly relational ontology where livingness is understood primarily as a matter of connection: whakapapa [more-than-human kinship] is one key concept; mauri ora [vital life-field] and analogous concepts of hau ora [non-environmental entity life-energy], wairua [spiritual vitality] or mana [agency, power] (Penehira et al. 2011).

Engaging with whakapapa involves a grounding into a place where the earth is ancient geologic kin, where the atmosphere has agency, where water lives, where we humans are teina (junior) relatives within a multispecies and ecological-entity whānau [family]. The word whakapapa encompasses this relational ontology. Whaka is an action, a practice, while papa is a layering, a sequencing, a tūāpapa ground, a living earth Papatūānuku, both ancient geology and primordial parent. Whakapapa is abbreviated as ‘ancestral lineage’ but this is a multispecies more-than-human family tree. More than this though, whakapapa is an ongoing relational process, an iterative sequencing of connection, a constant becoming earth: with each breathe we take in (billions of molecules of air, wind-borne earth, dust, moisture) we become atmosphere; with each exhale we deliquesce into air; as we eat we become earth; as we die, we return into the matter of ancestral ground, into the deep time of a living soil, of rock, of tree roots, of mycorrhizal fungi, of exchanges of minerals, carbon, photosynthesized sugars and percolating waters, from which new life will then regenerate (Yates 2019, 2021). While on this living planet we can only ever live in exchange with the life-field – our wellbeing is interlinked, inseparable from planetary wellbeing.

A planetary model

Rockstrom et al.'s planetary boundaries model has a socio-ecological context as it considers the interactivity between human actions and planetary ecosystem viability. The complex systems model identifies critical planetary processes, conditions or 'boundaries' that, if adhered to, enable the Holocene-like planetary conditions necessary to the continuance of our human civilization (Rockstrom et al. 2009). Key boundaries include climate regulation processes and biosphere integrity (Steffen et al. 2015), planetary biogeochemical cycles – including freshwater, nitrogen, phosphorus – as well as the status of critical ecosystem elements such as the ozone layer, or the ocean. The model takes the form of a visualization that presents these key coordinates of global planetary health, mapping whether these are in the green, a safe register; in a space of increasing risk of disturbing the stability of the connected Earth system; or in a state of high risk of destabilization.

Introduced in 2009 the model has been widely circulated, critiqued and discussed within government, industry, academic and non-governmental organizations (Cooper and Dearing 2019; Leach, Raworth and Rockstrom 2013). Combining complex analysis and data in a visualization has helped to draw focus to the parlous state of many aspects of Earth's connected life-system and offered a conceptual framework by which to understand the global-scale effects of human actions. Recent work on the planetary boundaries model has aimed at identifying interactivity between boundaries as a means to refine the tool's value for sustainability governance (Lade et al. 2020). In Lade et al.'s paper there was found to be a dense interaction network between planetary boundaries, and these interactions were found to be pathologically amplifying (Lade et al. 2020: 122) such that interactions caused further detrimental effect. This tight connectivity has real relevance for planetary wellbeing. With detrimental interactions the 'safe operating space' for humanity on the planet shrinks markedly. Of particular concern is the potential for reinforcing interactions – global heating causing further habitat loss and extinction event, for example – to set in motion cascading destabilizations of Earth systems.

The planetary boundaries model shows that current human activity transgresses key biophysical planetary boundaries and is situated beyond a 'safe operating space'. The interactivity or close-coupling of planetary boundaries – climate change with ecological diversity, for example – does offer a potential for action through governance practices that emphasize synergies and co-benefits (Lade et al. 2020). Transformative actions in animal-agriculture and shifts to plant-based diets, for example, could significantly reduce boundary transgressions for climate change (Lade et al. 2020) and could also enhance the land-use/biosphere integrity boundary because of the networked interactivity between these. The current challenge is to shift existing cultural practices sufficiently to bring us back into that 'safe operating space', that zone of planetary functioning or wellbeing.

This chapter explores how the planetary boundaries model might shift when brought to ground in Aotearoa. Why engage with a model that is not of this place? Why braid knowledge streams? The planetary boundaries model has been very effective in bringing wide-ranging international focus to planetary systems at this time of ecological emergency. In braiding between contemporary Euro-Western science and ancient indigenous ecological knowing I'm exploring a pragmatic process of making pluriversal allies, linking between models or initiatives that are signalling ecological depletion with an aim to activate cultural change. I'm aiming to widen the reach and enhance the flow of Māori knowledge streams that have been blocked by settler-colonial impositions. I'm hoping that an indigenous planetary boundaries model could both activate local urban wellbeing initiatives and build wider transformative communities of change. Such a braided approach could both link with international initiatives but also reorient them to align with indigenous ontological frameworks already directed towards holistic wellbeing (human and more-than-human wellbeing). So how might this model change if braided into relationship with *mauri ora* as radically connected social-cultural-ecological wellbeing? In what follows I outline current work in progress on a planetary boundaries Mauri model.

A pluriversal planetary model

The planetary Mauri model emphasizes the connectivity of the planet's life and life-support system. Mauri as a connected holistic life-field is visualized as a mesh background. The mesh is ontological, it speaks to a fundamental understanding that life exists not as atomized individuals but as a connected holism. The new Mauri 'boundaries' are visualized within this mesh. They are revised as a graphic of nested concentric rings rather than the separate radiating boundary segments of the planetary boundaries. The nested circles emphasize an immanent earth-oriented centre. The encompassing holism of the nested circles emphasize the holistic interconnection and real-life outcomes for planetary more-than-human wellbeing (which encompasses human wellbeing). The nested circles now reference Māori cosmogonical whakapapa, acknowledging more-than-human kin, those elemental entities of rain, rivers, mists, climate, clouds, ocean, mountains, forests. In so doing the model aims at unsettling colonizing modernist models that separate culture from nature, agential human actor from an assumed 'inert nature' (Yates 2008, 2010, 2016, 2021). Here the Mauri model aims to performs the agency of earth-entities and other kinds of more-than-human kin to the thriving of the living-world.

Simplifying the planetary 'boundaries' signals critical planetary wellbeing factors and the changes needed to effect transformative holistic wellbeing. There are fewer global boundaries or concentric rings in this Mauri model as the original planetary boundaries have been clustered into relational connected groups, ordered by systemic or material affinities. Sociocultural factors are now included in addition to the biophysical conditions of the planetary boundaries model. The outermost nested ring depicts ecological diversity status. The next ring in shows ecosystem integrity – signalling degrees of pollution and disruption to planetary material systems. The third ring in visualizes one aspect of the climate emergency, planetary temperature; while the next shows another manifestation in disrupted planetary water cycles. The innermost ring signals disruptions and crises in human communities. There is a zero-tolerance approach to ill-health here so that a significant transgression in holistic wellbeing is

temperature, can stand as a proxy for the loss of mauri. At sustained elevated heat and humidity (wet-bulb temperature) the human body’s evaporative cooling capacity fails leading to thermal damage, the cooking, of cells. This humid death zone is a new product of the Industriocene. It now appears that areas of the planet have recently reached humid-heat levels that exceed human physiological limits (Raymond, Matthews and Horton 2020). This novel humid death zone is a definitive and ominous marker for mauri mate or failing life-systems.

The innermost boundary, the water cycle boundary, visualizes the inter-relations of Ranginui [sky], Tāwhirimātea [weather], Tē ihoranga [rain], Hinewai [rain], Hine-pukohu-rangi [mist], Hinemoana and Tangaroa [ocean], Parawhenuamea [rivers] and other atmospheric or water entities. This boundary presents disruptions to the water cycle – floods, droughts, sea-level rise – as major disruptors to ecological wellbeing and human thriving. The innermost ring images social-cultural community wellbeing – this again in the red, in diverse registers across a range of community or public health indices from obesity, to loneliness, to precarities in access to affordable housing, energy or food, to the outcomes of the current pandemic.

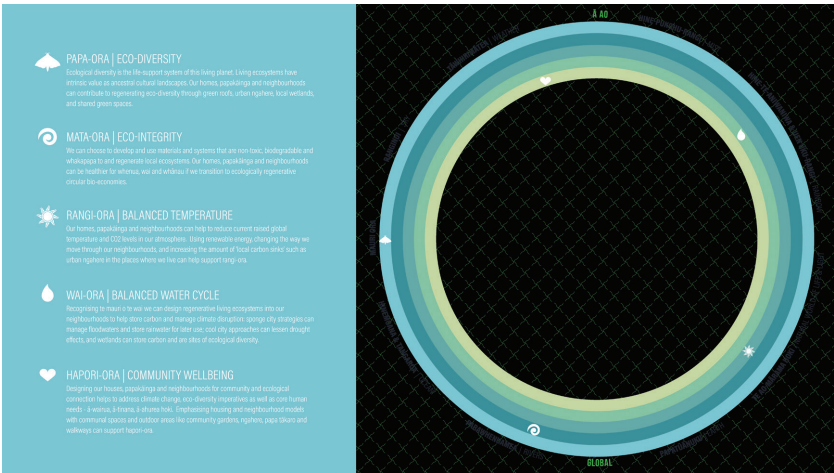


Figure 12.2. Planetary mauri model – mauri ora

A planetary *wellbeing* model

Visualizing mauri ora [holistic wellbeing] – rather than mauri mate or ill-health as the planetary boundaries and the planetary mauri mate model do – is transformative as it orients attention and scaffolds strategies towards holistic wellbeing (Figure 12.2). This is the power of Indigenous-Māori ontologies that centre wellbeing and vitality as normative (Yates 2016). Because of this place-based emphasis on wellbeing the planetary mauri model exists in two states, the red mauri mate version and a green mauri ora, planetary thriving variant.

The green mauri ora model differs from the planetary boundaries model as it represents not excess, decline or failing planetary health but rather a propositional, anticipatory and ethical state of planetary thriving. As established, mauri ora-oriented ontologies are founded on an understanding of livingness as a state of meshed vitality and wellbeing, akin to the *buen vivir* of South America. Ora is a vital, thriving life; mauri ora is both the vitality of a connected sociocultural-ecological life-field, and an ethical exhortation to care for that vitality (Figure 12.3). In this context the outer band shows a vibrant and diverse planetary ecosystem, with the next nested circles showing a state of ecological integrity with no polluting materials or processes. The next two concentric rings show balanced planetary temperatures and water cycles; while the innermost disc shows a state of community wellbeing.

These planetary wellbeing rings are linked to transformative urban actions shown in the centre. I've written of these urban actions for wellbeing in other papers (Yates 2019, 2021) – suffice it to say here that linking local urban actions with global planetary wellbeing outcomes allows for a more holistic and relational understanding, a reminder that we live always in relation to a larger life-field. When the planetary and local urban wellbeing actions are put together they can create a navigation tool, a transformative compass that sets coordinates and directions for more ecologically engaged culture. The green, thriving planetary wellbeing model visualizes a speculative future where modernist industrial cultures have shifted sufficiently to land a co-existent, kaitiakitanga or care-oriented model for a

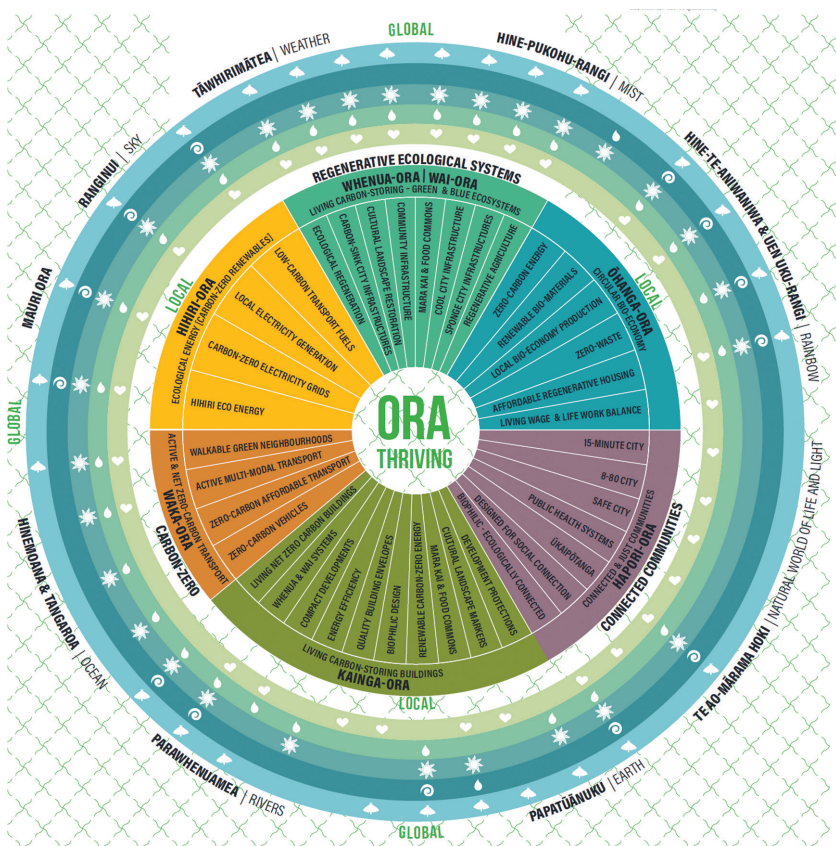


Figure 12.3. Mauri Ora – planetary and local wellbeing

more ecological community. Here local culture and practices are framed by a context of planetary wellbeing.

Conclusion

Wellbeing concepts differ radically across industrial and indigenous cultures reflecting deep ontological differences. Ontological difference matters. Ontologies embody and construct ‘livingness’ or reality through cultural structures and practices, whether ecological or anthropocentric. This chapter argues for a dislocation of contemporary Western theories of wellbeing away from the inaccurate anthropocentric and atomistic cultural narratives that have produced the Anthropocene (Yates 2019, 2021). At this time of planetary ecological emergency wellbeing is definitively a matter of ecological connectivity and co-existence. Wellbeing is more-than-human and occurs as/through a radical relational co-existence. Thinking and acting for more-than-human and planetary wellbeing – ecological and sociocultural vitality and justice – is critical to our civilizational continuance now and thus to the wellbeing of individual humans.

At this time of diverse crises – in climate, in biological diversity, in cultural diversity, in social affordances of affordable housing or protection from viral pandemic – it is vital that we have effective and accurate wellbeing models that can enable wellbeing-led transformations instead of reinscribing industrial inequities. Pluriversal place-based approaches bring a sociocultural and political critique to wellbeing emphasizing that sustained human or planetary wellbeing relies on eco-ontological care practices rather than supposedly neutral ‘acultural’ technical or managerial fixes. Now is the time to be practising ancient or newly synthesized ecologies, eco-ethics and ecological more-than-human communities in place.

Place-based wellbeing models already enhance mauri or holistic wellbeing in contemporary Aotearoa. There have been notable successes where *mana whenua* [people of the land] have initiated hard-won structural change for more-than-human *whanaunga* [kin] wellbeing. This has required a multigenerational investment of time, political action and attention to the *mauri of awa* [rivers] or *whenua* [land] as our more-than-human *whanaunga* [kin]. For indigenous-Māori it is now time to more broadly

ground indigenous ethics of more-than-human care in the landscapes and urban spaces of Aotearoa. Mauri ora is a condition of radical connectivity that can't be siloed into Māori enclaves within colonial cities and settler states. Rather mauri ora or holistic wellbeing, the wellbeing of people *and planet*, must at this time of crisis be central to our cultural practices. If we can achieve this shift then industrial modernism will be decentred and displaced. This is pluriversalism's transformative potential to bring forward diverse ecological cultures oriented to holistic wellbeing.

The ecological costs and sociocultural inequities of ecological crisis are well known and make transformative action imperative. The wealthy can defer or buffer negative consequences in the short to medium term. Indigenous peoples are evidenced to pay a steep price for the damage caused by colonial-modernist methodologies and practices – including in cultural and spiritual losses as more-than-human whanaunga [kin] extinction events accelerate. For this reason, there is much at stake for Indigenous-Māori in strategically 'interfacing' and 'braiding' across knowledge streams. This is a process of shifting settler knowledge streams, disrupting industrial-modernist directions, establishing new/old ecological channels. Braiding, in this activist transformative context, can be understood as a strategic process of wider culture change, initiated for the benefit of our more-than-human whanaunga [kin] and the wellbeing of this living planet. The planetary mauri ora model described here positions planetary wellbeing as the central frame for cultural practices of this time. It acknowledges connectivity with the more-than-human. The model visualizes planetary wellbeing knowing that this too is inherently, indissolubly, our own human wellbeing.

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References

- Brand, U., et al. (2021). 'From Planetary to Societal Boundaries: An Argument for Collectively Defined Self-limitation', *Sustainability: Science, Practice and Policy*, 17 (1), 264–91.
- Ceballos, G., Ehrlich, P., and Dirzo, R. (2017). 'Biological Annihilation via the Ongoing Sixth Mass Extinction Signalled by Vertebrate Population Losses and Declines', *Proceedings of the National Academy of Sciences of the United States of America*, 114 (30), E6089–96.
- Charpleix, L. (2018). 'The Whanganui River as Te Awa Tupua: Place-based Law in a Legally Pluralistic Society', *The Geographical Journal*, 184 (1), 19–30.
- Chuji, M., Rengifo, G., and Gudynas, E. (2019). 'Buen Vivir'. In A. Kothari, A. Salleh, A. Escobard, F. Demaria, and A. Acosta (eds), *Pluriverse: A Post-Development Dictionary*, pp. 111–14. New York: Columbia University Press.
- Collins, T., and Esterling, S. (2019). 'Fluid Personality: Indigenous Rights and the "Te Awa Tupua (Whanganui River Claims Settlement) Act 2017" in Aotearoa New Zealand', *Melbourne Journal of International Law*, 20 (1), 197–220.
- Cooper, G. S., and Dearing, J. A. (2019). 'Modelling Future Safe and Just Operating Spaces in Regional Social-Ecological Systems', *Science of The Total Environment*, 651, 2105–17.
- Demaria, F., and Kothari, A. (2017). 'The Post-Development Dictionary Agenda: Paths to the Pluriverse', *Third World Quarterly*, 38 (12), 2588–99.
- Dionisio, M.R., Macfarlane, A., Walker, D., Macfarlane, S., Derby, M., Caldwell, R., Pani, J., and Waru, R. (2021). 'Ngā Mātāpono e Rua: Stories of Co-creation for Bicultural Spatial Governance in Aotearoa New Zealand', *New Zealand Geographer*, 77 (2), 76–89.
- Durie, M. (2004). 'Exploring the Interface Between Science and Indigenous Knowledge', paper presented at the APEC Research and Development Leaders Forum, Christchurch.

- Hutchison, A. (2014). 'The Whanganui River as a Legal Person', *Alternative Law Journal*, 39 (3), 179–82.
- IPBES. (2019). 'Nature's Dangerous Decline "Unprecedented": Species Extinction Rates "Accelerating"', <<https://ipbes.net/news/Media-Release-Global-Assessment>>, accessed 20 August 2022.
- IPCC. (2018). *Global Warming of 1.5°C: An IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty*, <<https://www.ipcc.ch/sr15/>>, accessed 20 August 2022.
- _____. (2019). *Climate Change and Land: An IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems*, <www.ipcc.ch/report/srcl/>, accessed 20 August 2022.
- _____. (2021). *Climate Change 2021: The Physical Science Basis*. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, <<https://www.ipcc.ch/report/sixth-assessment-report-working-group-i/>>, accessed 20 August 2022.
- Kothari, A. (2014). 'Radical Ecological Democracy: A Path Forward for India and Beyond', *Development*, 57 (1), 36–45.
- Kothari, A., Sallen, A., Escobar, A. Demaria, F., and Acosta, A. (2019). *Pluriverse: A Post-Development Dictionary*. New Delhi: Tulika Books.
- Lade, S. J., Steffen, W., de Vries, W., Carpenter, S. R., Donges, J. F., Gerten, D. and others. (2020). 'Human Impacts on Planetary Boundaries Amplified by Earth System Interactions', *Nature Sustainability*, 3, 119–28.
- Leach, M., Raworth, K., and Rockström, J. (2013). 'Between Social and Planetary Boundaries: Navigating Pathways in the Safe and Just Space for Humanity'. In *World Social Science Report 2013: Changing Global Environments*, pp. 84–9, <https://www.oecd-ilibrary.org/social-issues-migration-health/world-social-science-report-2013_9789264203419-en>, accessed 16 December 2021.
- Macfarlane, A., Macfarlane, S., and Gillon, G. (2015). 'Sharing The Food Baskets of Knowledge: Creating Space for a Blending of Streams'. In A. Macfarlane, S. Macfarlane and M. Webber (eds), *Sociocultural Realities: Exploring New Horizons*, pp. 52–67. Christchurch: Canterbury University Press.
- New Zealand Parliament. (2017). 'Innovative Bill Protects Whanganui River with Legal Personhood', <<https://www.parliament.nz/en/get-involved/features/innovative-bill-protects-whanganui-river-with-legal-personhood/>>, accessed 20 July 2018.

- Penehira, M., Tuhiwai Smith, L., Green, A., and Aspin, C. (2011). 'Mouri Matters: Contextualizing Mouri in Maori Health Discourse', *AlterNative: An International Journal of Indigenous Peoples*, 7 (2), 177–87.
- Raymond, C., Matthews, T., and Horton, R. M. (2020). 'The Emergence of Heat and Humidity Too Severe for Human Tolerance', *Science Advances*, 6 (19).
- Rockström, J., Steffen, W., Noone, K., Persson, A., Chapin, F. S., Lambin, E. and others. (2009). 'Planetary Boundaries: Exploring the Safe Operating Space for Humanity', *Ecology and Society*, 14 (2). <<https://www.jstor.org/stable/26268316>>.
- Salmond, A., Brierley, G., and Hikuroa, D. (2019). 'Let The Rivers Speak: Thinking About Waterways in Aotearoa New Zealand', *Policy Quarterly*, 15 (3), 45–54.
- Steffen, W., Richardson, K., Rockström, J., Cornell, S. E., Fetzer, I., Bennett, E. M. and others. (2015). 'Planetary Boundaries: Guiding Human Development on a Changing Planet', *Science*, 347 (6223), 1259855.
- Superu, (2018). Bridging Cultural Perspectives, <<https://thehub.swa.govt.nz/assets/Uploads/Bridging-Cultural-Perspectives-FINAL-o.pdf>>, accessed 20 August 2022.
- Te Awa Tupua (Whanganui River Claims Settlement) Act (2017). <<https://www.legislation.govt.nz/act/public/2017/0007/latest/whole.html>>, accessed 16 December 2021.
- Te Rūnanga o Kaikōura. (2007). *Te Poha o Tohu Raumati*, <<https://ngaitahu.iwi.nz/wp-content/uploads/2013/08/Te-Runanga-o-Kaikoura-Environmental-Management-Plan.pdf>>, accessed 20 August 2022.
- Te Tatau o Te Arawa. (2020). *Te Arawa Vision 2050*, <<https://www.tearawavision.nz/>>, accessed 20 August 2022.
- Te Urewera Act (2014). <<https://www.legislation.govt.nz/act/public/2014/0051/latest/whole.html>>, accessed 16 December 2021.
- Whyte, K., Caldwell, C., and Schaefer, M. (2018). 'Indigenous Lessons about Sustainability Are Not Just for "All Humanity"'. In J. Sze (ed.), *Sustainability: Approaches to Environmental Justice and Social Power*, pp. 149–79. New York: New York University Press.
- Yates, A. (2008). 'On Nature, Culture and Sustainable Design'. In C.A. Brebbia (ed.), *Design and Nature IV: Comparing Design in Nature with Science and Engineering*, pp. 191–200. Southampton, UK: WIT Press.
- (2010). 'Micro-Urbanism: Regenerative Buildings and the Architectural Landscape of the Pā'. In K. Stuart and M. Thompson-Fawcett (eds), *Tāone Tupu Ora: Indigenous Knowledge and Sustainable Urban Development*, pp. 23–27. Wellington: Steele Roberts.
- (2016). 'Mauri-Ora: Architecture, Indigeneity, and Immanence Ethics', *Architectural Theory Review*, 21 (2), 261–75.

- _____. (2019). *Think Piece – Whanake Mai Te Mauri Ora: An Expanded Well-Being Framework and Urban Science Data Tool for Integrated Well-Being Governance*. Tāmaki Makaurau/Auckland: BBHTC. <https://www.buildingbetter.nz/publications/urban_wellbeing/Yates_2019_wellbeing_framework_urban_data_tool_think_piece.pdf>, accessed 20 August 2022.
- _____. (2021). 'Transforming Geographies: Performing Indigenous-Māori Ontologies and Ethics of More-Than-Human Care in an Era of Ecological Emergency', *New Zealand Geographer Special Issue*, 77 (2), 101–13.
- Yates, A. M., and Lenihan, L. M. (2019). *Back to the Future: Whanake Mai Te Mauri Ora – Towards a Sustainable Development & Mauritanga System for Integrated (Ecological-Socio-Cultural) Wellbeing*. Māori Cultural and Design Perspectives for the Comprehensive Review of the Resource Management System.