

BUILDING BETTER
HOMES, TOWNS
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whakamāhorahora

THINK PIECE

**WHANAKE MAI TE MAURI ORA:
AN EXPANDED WELLBEING
FRAMEWORK AND URBAN SCIENCE
DATA TOOL FOR INTEGRATED
WELLBEING GOVERNANCE**

Think Piece / Mauri Ora and Urban Transformation

Think pieces are designed to both prompt and present thought. This think piece has been tested through hui with a Māori reference group with whakaaro Māori, urban governance, and regeneration expertise. The paper examines how a holistic, indigenous, more-than-human wellbeing concept might guide the analysis, planning, and associated action of urban governance. Further, the paper questions whether wellbeing-led governance tools might enable transformative urban analysis and policy in the Anthropocene, a time of climate and ecological emergency. This think piece builds a foundation for future co-creative enquiry processes into wellbeing-led governance.

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About

Research | Mauri ora and urban wellbeing: A Holistic Approach to Neighbourhood Transformation

For Māori, ora is wellbeing, health, and life. Mauri has been described as an integrated life-force connecting, for example, rivers, rocks, trees, and people. It is summatively te Ao (the world) as an indissoluble “network of interacting relationships” (Durie, 2001). Mauri ora is the vitality and wellbeing of this life as a network or field. The climate of this research is the Anthropocene, an epoch of human-led harm to planetary wellbeing, a time of climate and biodiversity emergency. The city is our primary research site – cities both contribute to the Anthropocene epoch and are subject to its disruptions. Cities are sublimely complex socio-cultural assemblages of geographies, climates, economies, ecologies, and technologies; they are ‘wicked’ problem fields where complex interdependencies mean that the positive resolution of one issue may effect a negative outcome elsewhere. This research employs transcultural, transdisciplinary, and transversal (connecting across a range of urban conditions) methods as a means of engaging with urban complexity. Mauri ora, as integrative all-of-life wellbeing, becomes the connective analytic against which all research questions, processes, and outcomes are indexed. We hypothesise that such an integrative all-of-life wellbeing framework can activate a more responsive and coordinated urban analysis, planning, and action for wellbeing necessitated by the ecological crises of the Anthropocene.

Te Puna Wai-Papa-Ora | Emergent Ecologies Lab

Te Puna Wai-Papa-Ora (‘The Puna’) is an urban wellbeing research and activation lab based at the Auckland University of Technology. Indigenous thinking for wellbeing is the tūāpapa, the ground, for the Puna’s urban research and practices. We generate new urban research, and communicate and activate this through publications, collaborations, and art-science activations or design events. System change and anthropocenic (of the Anthropocene) counter-practices are key areas of engagement and activism within our future-focussed, urban ecologies and wellbeing enquiry.

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Ehara taku toa i te toa takitahi,
engari he toa takitini

My strength is not as an individual,
but as a collective

1. Introduction

Diverse crises in wellbeing – including those of climates, economies, and accelerated species extinctions – reveal current governance incapacities in the face of rapid and substantive ecological change. Particularly following the global financial crisis of 2008 and its consequences, various economic theorists and public policy commentators have acknowledged the insufficiency of current governance approaches and have proposed wellbeing concepts to better orientate policy and legislation (Adler & Seligman, 2016; Helliwell, Layard & Sachs, 2012; Layard, 2010; Stiglitz, Sen & Fitoussi, 2009). A paradigm shift may be in process as wellbeing concepts and registers come to influence national, regional, and urban governance frameworks. This paper explores wellbeing governance as a potentially transformative decision-delivery mode. A wellbeing approach maintains a clear and primary focus on the salutary – whether individual or collective, human or more-than-human wellbeing. Wellbeing indices (measurement frameworks or data tools) are discussed here for their capacity to register the effects of our cultural practices in the world and better orient analysis and action. Particularly this paper asks how an indigenous-Māori cultural perspective, that sits largely outside of Euro-American hegemonies, might expand wellbeing discourse with positive effect for wellbeing-led governance.

Governance is the process of governing and involves the framing of institutional rules, laws, and strategies, as well as the relationships between governments and citizens, including resource allocations (Capano, Howlett & Ramesh, 2015). Governance, at its best, coheres and synchronises state-societal interactions and directions: “the governance concept ... is a powerful conceptual tool which can help to order and analyse the multifaceted ways through which policies are coordinated (decisions are made and implemented, and services are delivered)” (Capano et al., 2015, p 319). Governance is concerned with analytics, decision-making, and implementation. This paper attends particularly to national and local urban government policy on socio-economic, infrastructural, and environmental development, as well as key legislative instruments all within a framework of wellbeing. In the context of national and local urban governance, wellbeing occurs at the interface of the personal, the social, and the institutional.

New Zealand is a leader in the emergent field of wellbeing governance, particularly in the context of the first 'wellbeing budget' delivered by its coalition government in May 2019. Radically, this budget was developed by integrating data around human, social, and environmental capital, in addition to the normative financial capital orientation, and aims for a dynamic balancing between all four capitals. The Prime Minister of New Zealand, Jacinda Ardern, profiled New Zealand's 2019 wellbeing budget at the World Economic Forum at Davos in January 2019. She discussed the current relative destabilisation occurring across a range of democracies and how this may be related to a lack of systematic mechanisms to embed wellbeing in budgets, policy, and outcomes (Ardern, cited in Kirk, 2019). Ardern proposed the wellbeing budget as a governance tool that could better connect wellbeing assessment with actions for improved wellbeing.

Currently, the wellbeing tools that support this innovative New Zealand budgetary process – the Living Standards Framework and Dashboard – follow the Organisation for Economic Cooperation and Development (OECD) wellbeing models that focus on a range of data and its effect on human wellbeing. There is a stated aim for the Living Standards work to engage with indigenous-Māori knowledge (Smith, 2018). Whakaaro Māori (Māori thinking) sets a geo-cultural context for wellbeing in New Zealand. Critically, Māori wellbeing concepts sit outside of contemporary industrial-modern frameworks. This think piece attends to mauri ora as an indigenous wellbeing construct. For Māori, ora is life, health, and wellbeing, while mauri is that interpenetrating life force which is "immanent in all things, knitting and bonding them together" as a life-field (Royal, 2003, p. 47). Mauri ora then is the wellbeing of all-of-life, or, of life-as-field. Mauri ora must be understood in relation to a wider Māori ontology and cultural framework. The concept of whakapapa is particularly relevant here: Māori whakapapa are narratives of genealogy, a family tree of sorts. Yet whakapapa is also an ontological (concerning being, existence, and reality) framework that attests to a multi-species lineage where earth, skies, rivers, and mountains, for example, have agency and importance as ancestral entities (Randerson & Yates, 2016; Yates, 2010; Yates, 2008). Māori wellbeing concepts then exceed the human-centric frameworks of Euro-Western wellbeing discourse as they emphasise wellbeing as a concern and referent for all life, not just for human beings. Mauri ora, as a culturally and geographically specific, all-of-life wellbeing construct may enable differentiation and geopolitical specificity in wellbeing governance in New Zealand.

Wellbeing governance has particular currency now in an anthropocenic age of widespread human-caused harm to life-wellbeing (IPCC, 2018; IPBES, 2019). The term Anthropocene is now in wide usage in reference to a formal proposal to recognise a new geological epoch of that name (Working Group on the Anthropocene, 2018). The Anthropocene is defined by globalised human-activity that registers in the very geology of the planet, at the planetary scale. Such is the extent of our impact on

earth systems. The Anthropocene sets a climate and geopolitical context for this discussion of wellbeing governance models, which this paper argues have, to date, been produced largely within Euro-American cultural frameworks. Anthropocenic crisis conditions registering in the urban arena now make the case for the development of an integrative wellbeing framework and data tool that can attend to the range of challenges and opportunities, and, in Aotearoa, this must include an orientation to mauri ora and other indigenous approaches to wellbeing.

2. Industrial-Modernism and the Anthropocene

The Anthropocene is a time of humans operating as a globalised geological force. This is a geo-cultural epoch marked by widespread losses of life and life-vitality. Oil, petrol, and coal, and their combustion by-products, in the form of atmospheric carbon dioxide, have fuelled the Anthropocene since the Industrial Revolution more than two hundred years ago (Steffen, Grinevald, Crutzen & McNeil, 2011). A period of acceleration (Steffen, Broadgate, Deutsch, Gaffney & Ludwig, 2015) of these petrocarbon-fuelled effects occurred in the post-War World II era, with an explosion of economic activity, new technologies, habitat-clearing, industrial-farming, and city building. We are now near the end-game of this unsustainable acceleration, with globalised carbon pollution causing climate chaos, with globalised plastics pollution, and with biodiversity levels collapsing. It is this oil-economy, its atmosphere-warming carbon by-products, and a linear consumer culture that has brought about the radical changes characterised by the Anthropocene.

A breached threshold in atmospheric carbon dioxide is a critical element of the Anthropocene. Before the Industrial Revolution, atmospheric carbon was at some 280 parts per million (ppm) (Earth System Research Laboratory, 2013). We have now close to 415 ppm (NOAA, 2019). It was some 3.6 million years ago, in the Pliocene, that the planet was last at or above 400 ppm, a time that was human-free, with an ice-free Arctic and an ocean five to 40 metres higher than it is today (Brigham-Grette et al., 2013). This breached atmospheric carbon threshold causes complex shifts in climate and average temperature. The term the 'time of emergence' describes anthropogenic climate change and the moment at which a 'new' climate state can be understood to have emerged when temperature diverges significantly from a prior reference state (Lehner, 2017). A new climate state is estimated for the tropical Indonesian city of Manokwari by 2020 – at this time Manokwari will be at the frontline of climate change as it reaches new temperatures consistently hotter than those of the past 150 years (Mora et al., 2013). The 'wet-bulb temperature' (WBT or WT) is another new term and a key anthropocenic indicator for wellbeing; wet-bulb temperature measures both heat and humidity, and at 35°C wet-bulb temperature the human body's cooling systems fail and even the healthy die within six hours (Pal & Eltahir, 2015). The ambient humidity level is critical for human (and mammalian) thermoregulation in

that low humidity enables evaporative cooling while high humidity disables or stops evaporative cooling. Thermoregulation is an important part of bodily homeostasis, and evaporation or sweating is a key method by which we regulate body temperature. A wet-bulb temperature of 35 °C measures the survival limit for human thermoregulation through evaporation. This critical wet-bulb temperature is a meteorological or climactic marking of a transition from the temperate Holocene, in which human civilisation emerged, into an increasingly toxic-to-life Anthropocene. This hard life-limit was nearly breached for the first time in 2015, in the Iranian city of Bandar Mahshahr, as extreme heat (46°C) and 49% humidity created a 34.6°C wet-bulb temperature only just below the critical human-life threshold (Pal & Eltahir, 2015; Schär, 2015). Cities are particularly at risk of such temperature rises due to the urban heat-island effect. In a business-as-usual scenario, research suggests that this key threshold for human life-viability may first be exceeded in the Persian/Arabian Gulf (Pal & Eltahir, 2015), South Asia (Im, Pal & Eltahir, 2017), and the North China Plain (Kang & Eltahir, 2018), which is one of the world's most densely populated areas and an important agricultural region. To survive such elevated wet-bulb temperature events people will need to remain in thermally regulated environments.

The current mass extinction event is yet another example of an epochal anthropocenic event (IPBES, 2019; Ceballos, Ehrlich & Dirzo, 2017). The fifth extinction event was some 66 million years ago (Keller et al., 2018), when a wide range of life, including the dinosaurs, died out. What distinguishes the current mass extinction event is its speed, occurring at around 1000 times the background or normal extinction rate. Critically, for the first time in the some 4.5 billion years of our planet, a mass extinction event is being caused by humans – particularly those living within high consuming industrialised society. Ironically perhaps, this extinction threatens that industrial civilisation. As Ceballos *et al.* (2017) note, the sixth mass extinction is happening now and the window for action to preserve the ecosystem services our civilisation depends on is small, probably only some 20 to 30 years.

Industrialised society has its roots in a paradigm of disconnection and excess. It is a structurally unstable societal model given that it is based on a resource-intensive, endless extraction process situated on a finite planet. It follows a mass production, mass consumption, mass dumping process (Courvisanos, 2012; Hämäläinen, 2015). As a carbon-fuelled model, it lacks a systemic capacity for wellbeing. Disregarding the circular, cycling limits of a finite planet, this model has a linear trajectory that begins with unsustainable harvesting and ends with mass dumping of resource. These deficiencies render it inherently unsustainable:

The problems ... stem from various sources, such as the globalization of production systems and accelerated structural change in national and local economies, changing skill requirements of new technologies, unsustainable use of natural resources, aging of populations, decision making and governance problems in

the face of increased uncertainty and economic complexity, changing values and demand patterns of citizens, as well as outdated regulatory frameworks. These problems have made the current societal model of industrialized countries unsustainable economically, socially, ecologically, and in terms of individual wellbeing. (Hämäläinen, 2015, p. 31).

Industrial culture's conceptual substrate of separation from 'nature' produces the structural failure of linear over-consumption: here culture is framed as outside of the environment, the very nature from which it is composed and through which it produces. This is the silo culture of modernity (Latour, 1993). A dualist (Grosz, 1994) conceptual machinery processes everything into disconnected, superior-inferior binaries: life/death; mind/body; subject/object; culture/nature; human/non-human; urban/rural. Such disconnected thinking impacts cultural practices in economics, design, and technology that, untethered by global limits and ecological cycles, transcend planetary limits.

Most critically for wellbeing governance discourses and for the purposes of this paper, 'life' is thought of in this modernist binary model as in opposition to 'non-life' (Povinelli, 2016). While life is considered vital, individuated, and mobile, that which is not life (sky, ocean, rock, and earth, for example) is rendered inanimate, inert, and somehow also limitless, such that it can continue to be mined from and dumped into. A further binary here is in respect to death. Life is thought here in opposition to death; living things die and this is the end of this linear-binary process, they become non-life, static, inert. It is this industrial-modern thinking of life – as exclusionary, as isolate, as linked oppositionally with inertia, stasis, and death – that most enables the toxic-to-life materialisations of the Anthropocene. This is a linear, short-term conceptualisation of life and death. However, we live in a circular world where a finite material resource is ceaselessly cycling in a molecular flow through different forms: molecules move from the earth to become tree, from fruit to become human cells, from body to become earth. The life/non-life concept describes an individuated, disconnected, short-term thinking of life that disregards life's actuality as an interconnected process in ceaseless flow, generation and regeneration.

As Gerardo Ceballos, Paul Ehrlich, and Rodolfo Dirzo note in their paper on the current biological extinction crisis, life can only survive in relation to other life: "Earth's capacity to support life, including human life, has been shaped by life itself." (2017, p. 7-8). Thus, the current extinctions threaten individual human lives and human civilisation as a whole. Dr Christiana Paşca Palmer, UN Biodiversity leader, describes biodiversity as the 'infrastructure' of life on Earth: the current mass bio-annihilation threatens not only other existents but also our own capacity to live. The Executive Secretary of the Convention on Biological Diversity, Paşca Palmer, describes the need to enact major structural changes – valuing biodiversity, recognising closed system limits – in the global economic and development model. Further, she suggests a fundamental reorientation of cultural concepts, away from modernist disconnects:

. . . at the intersection of the political reality and culture, is the dominant concept of human separation from and supremacy over nature. This misconception underpinning in large measure the modern views and attitudes towards nature is at the root of people's disconnect from nature and the fragmentation we see in environmental governance and policy-making. Significant changes are required in our mentalities – as decision-makers, producers, and consumers. Awareness and education are essential for building a common, widely internalised understanding that our planet's resources for supporting life are finite. (Palmer, cited in Hance, 2018, p. 4)

So, what might wellbeing-led governance approaches or tools look like? And may they, through a focus on the salutary, begin to orientate us away from industrial-modernity's reductive and harmful frameworks?

3. Wellbeing Indices as Governance Tools

There is a wide range of governance measures currently available, with Rotberg and Bhushan, for example, identifying some 93 different governance indexes (2015). These indicators can be useful for analysing decisions or policy, and prioritising approaches dependant on their area of assessment (Gisselquist, 2014). Some have a singular, economic focus like the gross domestic product (GDP) measure, others group a wide range of different components to give a complex, multifactorial summary, like the World Bank's Worldwide Governance Indicators (WGI), while others have particular granulated emphases, such as Transparency International's Corruption Perceptions Index.

In the aftermath of the 2008 financial crisis, an influential 2009 report for the French Government by the Commission on the Measurement of Economic Performance and Social Progress suggested a fundamental change from "measuring economic production to measuring people's wellbeing" (Stiglitz et al., 2009). Such a focus on wellbeing represents a very significant shift in focus, from assessment via pure economic indicators, such as a country's GDP, to a broader and aspirational accounting of current health and wellbeing status now and into the future. Increasingly, wellbeing or happiness concepts and indices are used at national, regional, and urban scales to assess status and orientate governance towards more salutary conditions (Musikanski, Polley, Cloutier, Berejnoi & Colbert, 2017; Mumaw, Maller & Bekessy, 2017; Musa, Yacob, Abdullah & Ishak, 2017).

There are now a range of multidimensional wellbeing indexes or frameworks in operation where wellbeing is both index and goal. These include the UN Development Index, Happy Planet Index, World Bank World Development Indicators database, Gallup-Healthways Wellbeing Index, the United Kingdom's Measuring National Wellbeing Programme, and the OECD Better Life Index. The OECD index relies on a

concept of intergenerational wellbeing that makes futurity a key aspect of the model. While individual wellbeing can be conceptualised as a function of the present moment, intergenerational wellbeing necessarily invokes a future horizon. The OECD model addresses both the now of human wellbeing via metrics to do with health status, work-life balance, income, and civic governance, while bringing in a broader consideration of four capital stocks (natural, economic, human, and social) that can deliver wellbeing over time. Commentators suggest that some of the success of the OECD model rests on its integration with an economic framework and measurements; for example, Conal Smith (2018) notes that the OECD framework is significantly better at predicting life satisfaction than other measures, such as, for example, the UN Human Development Index.

There are a number of countries now integrating wellbeing indicators into economic governance activities. Sweden has introduced a new measures of wellbeing framework that brings together 15 indicators that complement the economic GDP measure with social and environmental data (Government Offices of Sweden, 2017). The declared aim is to better assess trends in human life-quality and economic sustainability, and improve governance for wellbeing. Indicators include GDP per capita, employment, unemployment, household debt, government debt, air quality, water quality, natural environment protection, chemical body burden, greenhouse gas emissions, low economic standard, individual health, educational level, interpersonal trust, and life satisfaction. Italy, through its 2017 Economic and Financial document, is the first European Union country to integrate wellbeing indicators into its economic policy-making (Ministero dell'Economica e delle Finanze, 2017). The initial supplementary indicators are for average income, an inequality index, labour force participation rate, and CO₂ emissions.

While countries experiment with the introduction of wellbeing data into policy-governance activities, it may be that the more medial scale of regions or cities, with their localised economic and material activity, could be more productive test spaces. Regional and city government already utilise wellbeing data within their everyday and long-term governance, but there is the opportunity to significantly transform contemporary civic governance through an overarching wellbeing framework. Following a series of devastating earthquakes in 2010 and 2011 in the Canterbury region of New Zealand, a Canterbury Wellbeing Index was formed to track social responses to, and recovery from, the earthquake events (Canterbury District Health Board, 2016). Key sections include multi-dimensional datapoints in economic wellbeing, knowledge and skills, safety, housing costs, health, mental wellbeing, and social connection. A temporal dimension draws attention to pre and post-earthquake registers with an aim to chart how recovery processes are registering in different measures. The 2016 results show notable improvements in indicators for subjective wellbeing. Housing stress remains, though affordability data shows some relief in costs in the last year of the study (Canterbury District Health Board, 2016). After a review process, the index has

now been redesigned as an on-line tool that captures high-quality information about regional wellbeing (Canterbury District Health Board, n.d.). In Australia, the City of Port Phillip has also compiled a wellbeing index as a summation of community wellbeing. There are multi-component measures for community, education, employment, finances, housing, health, safety, early years, youth, families, older persons, gender equity, transport, and environment. Stated aims focus on providing a snapshot of community life, and enabling comparisons with other cities (City of Port Phillip, n.d.). They describe the index as a useful urban database for community-based research, as well as mapping areas in need of service and policy development.

In the USA, the City of Santa Monica has developed a wellbeing index as part of a larger exploration into wellbeing governance. The city has established an Office of Civic Wellbeing, has a Chief Civic Wellbeing Officer and has begun a 'Wellbeing Project' focussed on defining and evidencing what makes a city thrive. Here wellbeing measurements are employed to integrate "the practice of government with [the] science of wellbeing" to coordinate around a "common wellbeing agenda" and test out responses or solutions in city-wide or neighbourhood interventions, including events, community workshops, or citizen-led activities funded through micro-grants (City of Santa Monica, 2017, p. 5). The Wellbeing Project asks, how are the people of Santa Monica doing? In 2015, the city released its first wellbeing index, which has subsequently been expanded in 2017 to include more sustainability data. The index is structured via six key elements: outlook (vox populi via social media), community (social connections and networks), place and planet (how residents feel about their city), learning (formal education and learning), health (individual physical health), and economic opportunity (individual finances). Overall, in 2017, Santa Monica residents reported life satisfaction of 7.4 (on a 0-10 scale), which is higher than the American average. Community cohesion and connection is an important measure of resilience – there is a high degree of trust with 84% of people saying they trust their neighbours. Place and Planet measures include items like air pollution and sustainable transport. In the 2017 index 50% of residents noted a desire for more community gardens as civic amenities. In terms of physical health, residents are less likely to have chronic health conditions (coronary heart disease for example) than the national average. Economic opportunity measures find that almost half of Santa Monica residents spend more than 30% of their income on housing. Reviewing the data via gender and ethnicity revealed significant differences with women reporting more stress and economic hardship and lower life satisfaction than men, and African Americans having significantly less access to formal education (City of Santa Monica, 2017).

4. Wellbeing Governance in Aotearoa/New Zealand

In Aotearoa/New Zealand, the Labour-led coalition government has signalled a major shift, with wellbeing becoming an umbrella framework for national governance. This is evident, for example, in the focus on the 'four wellbeings' (social, economic, environmental, and cultural) for local government mandated in the *Local Government (Community Well-being) Amendment Bill* (New Zealand Parliament, 2019). This reorientation is particularly apparent in the 2019 Wellbeing Budget. The budget utilises updated Treasury Living Standards Framework metrics that measure social, human, and environmental capital alongside produced capital measures, such as GDP, that have been the reductive standard to date (The Treasury, 2018a). This 'four capitals' approach broadens the governance horizon, emphasising a balancing between exclusory capitalist economic frameworks and the value of human happiness, ecological vitality, and future capacity. Further, a proposal for a New Zealand Living Standards Dashboard has recently been published (The Treasury, 2019; 2018b). The dashboard is intended to support the application of the Living Standards Framework, with aspirations for current and intergenerational wellbeing, to public policy. The dashboard draws together an initial series of wellbeing indicators following the model of the OECD 'Better Life Initiative' and 'How's Life?' analysis (Smith, 2018). In parallel, Statistics New Zealand is developing a set of wellbeing data, *Indicators Aotearoa New Zealand – Ngā Tūtohu Aotearoa*, that will further support wellbeing-led governance activities (2019).

The agency of wellbeing measures and frameworks comes largely from their capacity to measure life-wellbeing, based on a range of measures, and to aid in policy and budgetary planning for sustained wellbeing into the future. Further, integrating wellbeing across the vast differences and modalities of a governance system requires holistic or connected capacities that enable a more nuanced reading of the system. This is a movement from siloed to connective thinking and practices. Yet these approaches remain fundamentally entrained to industrial-modern dualist thinking in that humans are still thought of as separate from 'nature' or the environment. The definition of 'wellbeing' in these governance frameworks may be defined or conceptualised in a variety of ways but they are still always about humans. For example, Amartya Sen's (1993) influential approach emphasises that wellbeing policy should aim to extend the capabilities of people to live their values, Richard Layard (2011) assesses wellbeing via levels of (human) happiness, while Camfield and Skevington (2008) use a quality of (human) life approach. Despite the multi-factorial, more inclusive four 'capital stocks' constitution of much of this wellbeing analysis, the conceptualisation of wellbeing remains oriented primarily to humans. Situated within an economic model, the value ascribed to the non-human is instrumental and commodity-based. In their recent discussion paper on the Living Standards Framework, Te Puni Kokiri and Treasury note that the Living Standards Framework has real significance as it aims to move past this narrow economic model of national wellbeing. More emphatically, they make a case for incorporating indigenous wellbeing thinking: "wellbeing considered from an

indigenous perspective moves the public policy discourse beyond Western constructs of wellbeing and enables an improved lived experience of wellbeing for everyone.” (Te Puni Kokiri, 2019, p. i). Particularly they note that while their discussion paper focusses on Māori wellbeing, the expanded wellbeing construct they present has broad relevance to all Aotearoa New Zealand populations, as well as international indigenous groups. Critically, they note that in te ao Māori the environment is valued not just in financial terms but more deeply in relation to whānau and spiritual connection (Te Puni Kokiri, 2019, p. i).

While we still work from a human exceptionalist position, where human wellbeing is the singular driver and the non-human is valued for its commodity status only, we remain perilously close to the transcendent, un-grounded thinking and practices that have produced the Anthropocene. This human-oriented wellbeing is a culturally induced blind-spot as it fails to register the fact that human life cannot be lived in separation from the planet from which we arose. We, currently at least, only have this one planet to live on, and the ‘ecological amenities’ of the planet arise out of the interchanges of this particular web-of-life. Without this life-field, our human lives cannot be supported. At this point in our cultural trajectory, human life is inextricably bound up with a larger life-field, and consequently we need an expanded analytics for holistic wellbeing. The final section of this paper addresses a fundamentally different thinking about wellbeing, one that begins not from a position of anthropocentrism but rather from an understanding of whakapapa as the layering and inter-relatedness of all life including oceans, sky, earth, trees, insects, birds, whales, lizards, and so on. This conceptualisation includes humans as an integral part of a greater whole. Here, in mauri ora, wellbeing is the vitality of a more-than-human collective, a life-field.

5. Mauri Ora as All-of-Life Wellbeing

Scholar-theologian Māori Marsden describes mauri as that interpenetrating force which is “immanent in all things, knitting and bonding them together.” (Royal, 2003, p. 47). Huhana Smith, says that mauri is the “ultimate vitality of ecosystems and resources” (2012, p.21), while Hohepa Kereopa emphasizes the inherent connectivity and inter-relational nature of mauri (Moon, 2003, p. 94). Mason Durie describes mauri as an indissoluble “network of interacting relationships” (2001). Mauri is vitality, life-force, and life’s essential connectivity as life-field. Mauri is one of a series of interrelated Māori concepts. It should be understood in relation to, for example, kaitiakitanga (stewardship) and, particularly in the context of this think piece, to whakapapa as multi-species lineage. Cosmogonical whakapapa narrate our familial lineage back to our primal parents, Papatūānuku Earth and Ranginui Sky (Yates, 2010; 2008; Randerson & Yates, 2016). In this family tree humans are tēina (junior) to many environmental entities and related to all.

For Māori, ora is life, wellbeing, and health. This is an indigenous thinking of life that is ontologically distinct from the dualisms of modernist thinking with its life/non-life and life/death oppositional framework. Here, life is pervasive, te Ao – the world – is alive and relationally connected. Brought together, in mauri ora we have an emphasis on both life's connectivity as a field and an ethical attention to the wellbeing of not just humans but all of the interactive network of life. Mauri ora is a radically extensive thinking of life that accords well with ecological science's findings on biodiversity and the enmeshed connectivity and interdependence of the web-of-life as a global ecosystem. 'Ecological wellbeing' is another workable translation for mauri ora then, once one has registered with a more-than-human indigenous attention to the vitality and agency of a mountain-entity, the wellbeing of the sky-entity, or an ancestral river 'personage', for example.

One may ask what is the value of a concept of 'life-field wellbeing'? How is this different to ecological thinking as the holistic analysis of the various entities (biotic and abiotic) of an ecological system? In the context of this paper – urban governance frameworks and tools for the Anthropocene – the focus here is not on difference but rather relationality and accordance. In a life-systems-critical global emergency, questioning is rather more sensibly directed towards how these culturally-different-but-accordant models may relate and together co-create more viable governance practices. Working with a concept of ecological wellbeing and all-of-life wellbeing has value as it provides a conceptual map that guides away from the human-centric and towards the more-than-human, Earth-oriented thinking that is so necessary at this time.

A further query might be whether a mauri ora wellbeing-led framework is any different from existing Euro-American wellbeing frameworks in terms of outcome? How might it produce any difference in the real world? An all-of-life wellbeing concept requires a coordinated attention to how wellbeing, in its broadest sense, is conceptualised, analysed, registered, and enacted. Such a holistic wellbeing construct asserts that wellbeing comes from connection – and, indeed for example, contemporary urban science is showing that human wellbeing is enhanced through engagement with an ecologically rich environment, i.e., 'nature' (Capaldi, Passmore, Nisbet, Zelenski & Dopko, 2015; Huynh, Craig, Janssen & Pickett, 2013). This think piece supports any approaches to urban governance that can incorporate, value, and take action for improved wellbeing broadly (human and nonhuman, environmental and biotic) but aims also to make a case for the value of locally specific, culturally attuned approaches to urban governance. In Aotearoa New Zealand, there is a case, and a legal structure in Te Tiriti o Waitangi, for engaging in a culturally-relevant manner. At this time of climate and ecological crisis, this paper argues that it is appropriate, indeed necessary, to engage with different cultural models as disruptive exemplars.

In the context of wellbeing governance and an expanded wellbeing framework then, the very significant cultural difference of mauri ora and whakapapa rests in the framing

of wellbeing as a collective and relational wellbeing of te Ao (the world) rather than in a reductive humanist focus. How might humanist and more-than-human thinking of the world be brought together? In her journal paper on environmental governance frameworks and cultural difference, Anne Salmond (2014) describes the braiding together of seemingly incommensurate approaches as human-centred modernism interfaces with ancestral Māori collective-connected thinking. In the case of Te Awa Tupua, the river-ancestor of the Whanganui river, Salmond describes a multi-generational effort by Whanganui iwi (extended kinship group) to maintain river wellbeing and acknowledge its status as a discrete entity rather than the divisible natural 'assets' of a modernist legal framework. Here the river is understood as an ancestor to Whanganui iwi, its wellbeing inherently entwined with the wellbeing of these river peoples. A local whakataukī (proverb) denotes this intersectional identity: "ko au te awa, ko te awa ko au", "I am the river, the river is me". In 2017, the Te Awa Tupua (Whanganui River Claims Settlement) Act marked out new ground in Iwi/Crown relations as the river was accorded the legal status of a person (New Zealand Parliament, 2017). The agreement is highly significant in that it transforms, in this specific situation, the ontological foundations of the modernist New Zealand legal framework, with the river now defined as a living personage and unique entity. Crucially, 'ownership' of the riverbed is now vested in the river itself. Discussing this achievement, lead iwi negotiator Gerrard Albert noted that they sought to find an "approximation in law" capable of communicating and enacting the Māori perspective that the river is venerated kin and an indivisible living entity (Roy, 2017). As legal scholar Catherine Magallanes (2015) comments, while the legal definition of 'ownership' does not coincide with Māori understandings, it does achieve the desired protection and reinforces the indivisibility of the river-entity. This Act and Te Pou Tupuna, the office that acts on the river's behalf, together form an interwoven governance framework that acknowledge radically different framings of 'reality'. This governance approach establishes legal and institutional tools for interacting with the river as an indivisible living entity whose wellbeing must be maintained.

Might a similar intersectional approach enable transformations in governance at a larger national or urban scale? May an expanded conceptualisation of wellbeing, such as that of mauri ora, better enable wellbeing governance in the Anthropocene? We have reached or breached multiple ecological thresholds. We have lacked holistic and highly interactive feedback systems between our governance and that which is governed. We have created national or urban legislation that has only been assessed largely in respect to anthropocentric economic data, such as the GDP. Moving to a focus that largely emphasises human wellbeing, as in the Euro-American examples, is transformative and important, but reorienting the thinking of wellbeing further, as a broad, integrated, more-than-human wellbeing framework begins to shift deeply held cultural precepts and conscious and unconscious biases around human exceptionalism towards an understanding of life as a relational field.

6. An Urban Mauri Ora Integrated Wellbeing Tool

The multiple crises of the Anthropocene are evidence that contemporary city cultures, including those of urban governance, must change. The Te Awa Tupua (Whanganui River Claims Settlement) Act is the meeting of a legislative instrument with iwi and ancestral entity. In the proposed urban mauri ora wellbeing tool, a data instrument meets indigenous wellbeing thinking. There is complex politics involved in proposing such an index as an umbrella governance tool. This can be a cultural transformation tool and urban decolonisation instrument – if it can contribute to a shift towards a holistic thinking of all-of-life wellbeing. Yet the politics of colonisation require sensitivity to issues of cultural appropriation. How then to balance across this shifting ground?

In addition to this legislative example, there are a number of indigenous conceptual framework exemplars that may be instructive. In some exemplars, a cultural philosophy or tool is presented for wide-spread uptake, in others the instrument requires a process of engagement between Māori and non-Māori. Mason Durie's Whare Tapa Whā model registers nationally in the New Zealand health system (Ministry of Health, 2017) and influences the design and delivery of curricula in the New Zealand school system (Ministry of Education, 2016). Exemplary in its conceptualisation, explication, and reach, Durie's (1994; 2001) model describes a multi-dimensional and integrated Māori wellbeing philosophy of hauora, incorporating four key elements: te taha whānau (family health), te taha hinengaro (psychological health), te taha wairua (spiritual health), and te taha tinana (physical health). Emphasis is on an understanding of wellbeing as a psycho-social-spiritual-physical matrix whose connectivity is its strength. With an environmental focus, Te Kipa Kepa Morgan's Mauri-o-meter is a web-based decision-making framework that enables environmental sustainability assessments (*Mauri-o-meter*, 2013). The model is designed for usage by the public, and combines quantitative measurements with the indigenous concept of mauri as the "life supporting capacity of an ecosystem inclusive of people who are an inseparable part of it" (Morgan, 2014). Further, at a rural-level, Desna Whaanga-Schollum's Kaitiakitanga Plan proposes a culturally integrated farm-management tool that brings quantitative science data together within an indigenous mauri ora led framework (Whaanga-Schollum, 2018). And as a final urban example, Nga Aho's Te Aranga Māori Design Principles communicate a cultural framework and best practice guide that links iwi Māori and iwi Pakeha in urban design practice. The Te Aranga Principles have been widely adopted and incorporated into Tāmaki Makaurau/Auckland Council governance and design practice (Auckland Design Manual, n.d.). Distinctively, the principles activate a partnership model to increase agency for mana whenua within an urban development space – engagement with the principles requires collaboration and exchange between urban planners, designers, policy makers, and tangata whenua (people of that place).

How might these examples guide an urban mauri ora wellbeing data tool? The tool would ideally encompass both the partnership strategy of the Te Aranga principles

and the open platform model of the mauri-o-meter. The aim here is towards a web-based data tool with a summative visual interface – a dashboard – for use at a local government level. Like the mauri-o-meter, this tool would be intended for use by a cross-cultural grouping of users. Potential users for this local government focussed tool would range from urban planners and designers, to policy makers and city councillors, with the need for either highly detailed, granulated data, or a wider more relational ‘dashboard’ communication. As a data instrument the tool sets out an informational landscape for usage by iwi Māori and non-Māori. Multi-component numerical indexes can’t be comprehended holistically at speed – the complexity reduces easy activation of the data and these kinds of numerical lists inherently lack a holistic or summative reading. Those models that use visualisations to communicate, for example, the OECD index, offer a quick way of understanding major patterns.

So, what might such a tool encompass? The index would be multifactorial, combining ecological, socio-cultural, and economic data. It would bridge cultures as it brings together contemporary Euro-American wellbeing approaches with matauranga Māori, contemporary science with ancient cosmogony. It would appropriately reference the existent or in-development wellbeing tools that have been outlined here, including that of the OECD, the Living Standards Dashboard, and the Canterbury region and City of Santa Monica indexes. A dedicated data stream would be co-created by tangata whenua. Specifically, urban-level measures would be referenced in ecological, infrastructural, economic, and social-cultural wellbeing. These would include many of those indices found in the OECD, the Living Standards Dashboard, and Indicators Aotearoa New Zealand – Ngā Tūtohu Aotearoa, but with a particular emphasis on what is evidenced to actively bring wellbeing. And a set of global limits of critical ecological registers would be included that frame our urban practices in relation to our finite planet.

In terms of these global limits, a recent paper by leading scientists Will Steffen, Johan Rockström, and others (Steffen et al., 2018) suggest we are at the edge of a planetary threshold that, if breached, could shift us from the self-cooling planet of the Holocene Epoch into a self-warming ‘hothouse’ world that will be profoundly inhospitable to many forms of life. When one considers not just human wellbeing but the wellbeing of the ocean or forests, for example, the temporal register shifts to an intergenerational, geological framework that extends past short-term human and political-electoral timeframes. The recent Special Report by the Intergovernmental Panel on Climate Change (IPCC, 2018), entitled *Global Warming of 1.5°C*, confirms the global crisis in wellbeing and emphasises a vanishingly short 11-year time-frame for action. We are already at some 1.1°C above pre-industrial levels (WMO, 2018), with significant impacts already documented. The report emphasises the need to stay at or below 1.5°C in order to potentially avoid further catastrophic effects. Such a goal will require extraordinary transformations at urban, regional, national, and international scales as we move to a low and then zero-carbon energy system, with consequent shifts in economic frameworks and investments, and in energy, building, land-use (including agriculture and forestry), transport, and industrial

infrastructures. The tool should, therefore, reference critical global indices, given that these global shifts in climate have very significant effects on local urban-wellbeing. The Stockholm Resilience Centre's (2015) Planetary Boundaries framework is a valuable data visualisation here, as it brings together critical information on nine key areas, including climate change, biodiversity, ocean acidification, and air pollution.

Connection – whether social or ecological – is key to urban wellbeing. Social connection is shown to be tightly linked to wellbeing (Leyden, Goldberg & Michebach, 2011), while loneliness is acknowledged now as a public health 'epidemic' that directly affects physiology (for example, inflammation levels or immune function), increases risk for mental illness, and diminishes adherence to health-related behaviours (Holt-Lunstad, 2017). Walkable urban space enhances connection and consequent wellbeing (Leyden et al., 2011). Shared or integrated services in housing developments can increase sociability (Sanguinetti, 2014). Papakāinga (iwi-based housing development) can be transformative in terms of whānau wellbeing, as Te Puni Kokiri (2018) describe in an account of a Hastings papakāinga housing project providing healthy affordable housing for rent. Enhancing human contact with ecologically diverse environments, i.e., 'nature', is a potentially powerful tool for enhancing urban wellbeing. For example, there is a large body of data now that shows how treed spaces in cities positively enhance or affect mood and cognition (Huynh et al., 2013), heart health (Kardan Gozdyra, Misic, Moola, Palmer, Paus & Berman, 2015), reduce stress (Capaldi et al., 2015), and increase physical activity at population level (Richardson, Pearce, Mitchell & Kingham, 2013) with flow on effects for overall wellbeing. In terms of environmental level effects, treed spaces clean air of pollutants and cause localised cooling, thereby reducing energy draws for air-conditioning (Kardan et al., 2015).

At the global scale, an urban mauri ora data tool could have a set of indices that register collective or global wellbeing through indices assessing air health (atmospheric CO₂, estimated time of emergence [a new hotter 'climate'], 35°C or higher WBT risk, and degrees of warming [+1 through to +4 and above]), ocean health (degrees of warming, oxygenation, acidity, pollution, and biodiversity), and earth wellbeing (carbon sequestration, soil fertility, and biodiversity). National and regional components of wellbeing could be measured through a variety of indicators including exposure to sea-level rise and storm surge, intensified storms due to climate change, climate-change induced perturbations to agriculture and food security, ecological diversity (numbers of extinctions and incipient extinctions), and risk of local eco-system collapse (with accompanying failure in ecological 'amenities').

The tool could measure the urban environment in terms of wellbeing characteristics: low-carbon energy (buildings and transport); low-carbon public transport; ecological diversity, edible landscapes, and park environments; papakāinga and intergenerational or collective housing environments; third-space community-oriented public amenities (for example, libraries, festivals, and playgrounds); walkability; and air-quality, water-quality, and urban heat-island effect. These would collectively assess the extent to

which the city aids or harms (for example, through greenhouse gas emissions and other pollution, or through social disconnection) local and global ecological wellbeing.

A tangata whenua specific set of data, co-created by local iwi, would register more detailed Māori specific information enabling coordinated wellbeing strategy and practices. Measures around urban culture would be a further and important feedback register. These could include civic engagement (for example, voting and volunteering), civic voice (vox populi via social media), cultural identity/ukaipōtanga, personal safety, gender and child equity and justice, and ethnic equity. Individual human wellbeing indices might include the following registers: financial security, food security, energy security, and housing security; social connection, environmental connection, subjective wellbeing, and work-life balance; health status (nutrition, chronic disease status, and physical activity); education and skills. A mana whenua specific set of data, co-created by mana whenua, could register more detailed Māori specific information enabling coordinated wellbeing strategies and practices.

To activate the kind of holistic thinking required at this time, the tool would need to visualise the data in a way that synthesises across the range of conditions – from global to urban infrastructure, to civic culture, and to iwi. The tool could visualise global and local data, indicating trends, showing interrelationships between local and global effects, and depicting critical factors. Further, it could have components that register in real-time as live feedback. Such a live wellbeing index – linked to real-time air-quality assessments, weather stations, sea-level monitors, to urban ecology stations, and to data on human wellbeing – would in effect create a ‘live’ sensory registering of governance effects on life-systems. Such an interactive, action-response feedback system might become a means by which we can approximate the extraordinarily complicated planetary feedback-responses that are now being superseded by the accelerating toxicity of the Anthropocene. Summatively, the visualisation may remind us that mauri is a connective field that links all, that the local is the global, and our cultural practices here affect global seas, sky, and earth.

A key question in this enquiry is whether our governance, our legislation, our urban strategies and actions might transform if we shared a coordinated and expanded wellbeing agenda that led us to ask first: How might any given policy enhance all-of-life wellbeing? Particularly, this think piece sets out the grounds for a mauri ora urban wellbeing index. Indexes by default manifest the conceptual apparatus of their culture. They are conceptual tools as well as data devices. The significant difference of the mauri ora data tool from other wellbeing indexes rests in a conceptual foundation that exceeds a narrow human wellbeing focus to instead emphasise life-field wellbeing based on whanau-ancestral connection and a longer-than-human timeframe. Here global registers of wellbeing are linked with local urban conditions as part of a holistic model. A human-centric economic model of value is enhanced here by attention to an inherent ethic or impulse to preserve the mauri of local and global life, of ancestral awa (rivers) and maunga (mountains), for example. Attention to critical life-viability indexes – in, for example,

greenhouse gas emissions or land use policy – make the data tool necessarily future-focussed, with an intergenerational lens capable of registering and drawing attention to future effects – in temperature, in sea level, in biodiversity – of current policies, strategies, economies, and technologies.

7. Conclusion

Mauri ora is the vitality and wellbeing of life as a collective, connected field. As a wellbeing concept this is ontologically distinct from the human-centred wellbeing of Euro-American frameworks discussed in this paper. Modernist binary thinking of life/death, nature/culture, and human/non-human, creates a cultural blindspot this paper suggests, through an assumption that we humans and our wellbeing can be separate from the rest of life on a finite, systemically-integrated planet. A first great challenge in assessing, governing, and improving wellbeing rests upon our reconfiguring a more holistic understanding and integrative governance discourse for life and life-wellbeing. As Paşca Palmer (Hance, 2018) and Ceballos et al. (2017) affirm, the very viability of our globalised modern human civilisation relies on our ability to develop cultural practices that attend to the wellbeing of all life, including environmental 'entities', as an inseparable global ecology.

As wellbeing governance approaches are increasingly sought out under anthropogenic pressures there is the potential for a cultural paradigm shift: we may move away from a thinking of modernist siloes, separations, and linearities. We may come to emphasise ethics for life-wellbeing, a thinking of life as a related field within a global relational culture that we could summatively describe as circular and connected. The governance frameworks of such a culture might not think of wellbeing solely in respect to the human, but as a radically holistic 'all' – earth, sky, sea, rivers, plants, microbes, and animals (including the human). Such a governance discourse may be something that is globalised but also, potentially, specific to its particular local cultures and situations.

Mauri ora, within its related whānau (family) of concepts, is regionally and culturally situated thinking of integrated life-field wellbeing. Mauriorangatanga (practices for wellbeing) and whakapapatanga (at an ontological level, the practice of more-than-human ecological connection) describe relational thinking and practices that accord well with current ecological and wellbeing science emphasising the connectivity of life. This is a vital way to think of life – as connection – in the Anthropocene. This emphasis on the wellbeing of all related life – ora – is essential in the toxic-to-life Anthropocene, when the limits (conceptual, ecological, and economic) of industrial-modernity have been reached. In New Zealand, there is the potential to extend the bi-cultural governance approach for Te Awa Tupua, the Whanganui river entity, to urban or national legislative and policy frameworks. As Salmond notes, this kind of interleaving of cultural difference in governance frameworks enables difference and

avoids a situation where “only one reality is possible and only one set of assumptions about the world can prevail” (Salmond, 2014, p287). Critically, in the Anthropocene, a mauri ora wellbeing framework, as a coherent conceptual schema, and an associated urban science data tool, as a decision/delivery instrument manifesting the framework, could enhance analytics and actions for life-field vitality as it brings emphasis to more-than-human wellbeing.

Governance is a way of ordering reality (Capano et al., 2015). The toxic-to-wellbeing Anthropocene is, this think piece suggests, the reality enacted by a governance framework blinded to life’s collectivity and insensate to all-of-life wellbeing. This think piece has explored the potential of another way of ordering reality through an expanded wellbeing governance framework and data tool that attends to human wellbeing as the connected vitality of all life – life-as-field. This work sets a context for further urban wellbeing enquiry.

Toitū te whenua, whatungarongaro te tangata
The land remains when people have disappeared

Figure 1. Test for mauri ora integrated wellbeing framework spatial map

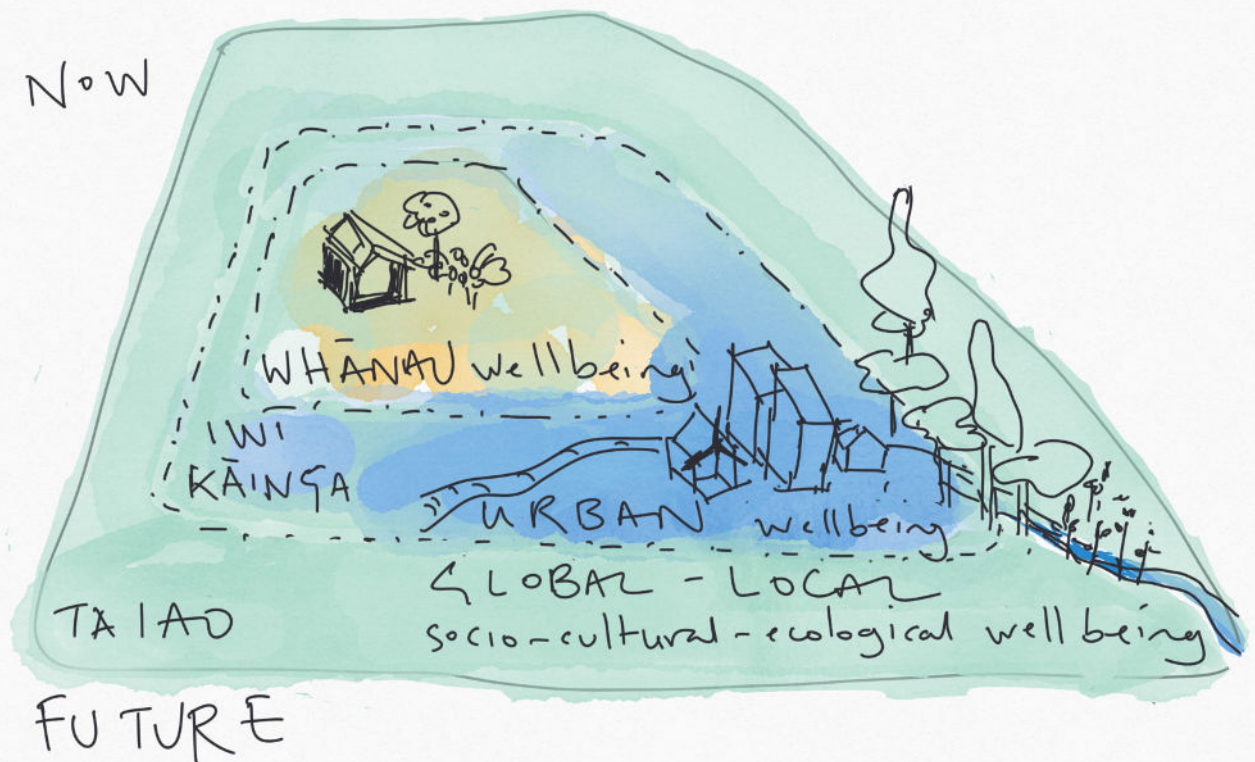


Figure 2. Test for data tool web-based dashboard visualisation



Pre-industrial revolution
reference: 280ppm*



Maramataka: te hopu tuna [eels are running]



Zero-carbon
renewable energy



Carbon banking



More plant-based diet



Biodiversity initiatives

LOCAL – URBAN (click to access detailed data index)

Urban infrastructure wellbeing

- green and blue infrastructure
- low emissions local energy
- low emissions transport
- etc.

Civic wellbeing

- civic voice
- voter engagement
- youth justice
- ethnic and gender equity
- etc.

Whanau + individual wellbeing

- health measures
- psychological wellbeing
- housing security
- financial security
- food and energy security
- etc.

Tangata whenua

- to be determined by TW

GLOBAL (click to access detailed data index)

Carbon + climate change

Biosphere + biodiversity

Biogeological cycles [N+P]

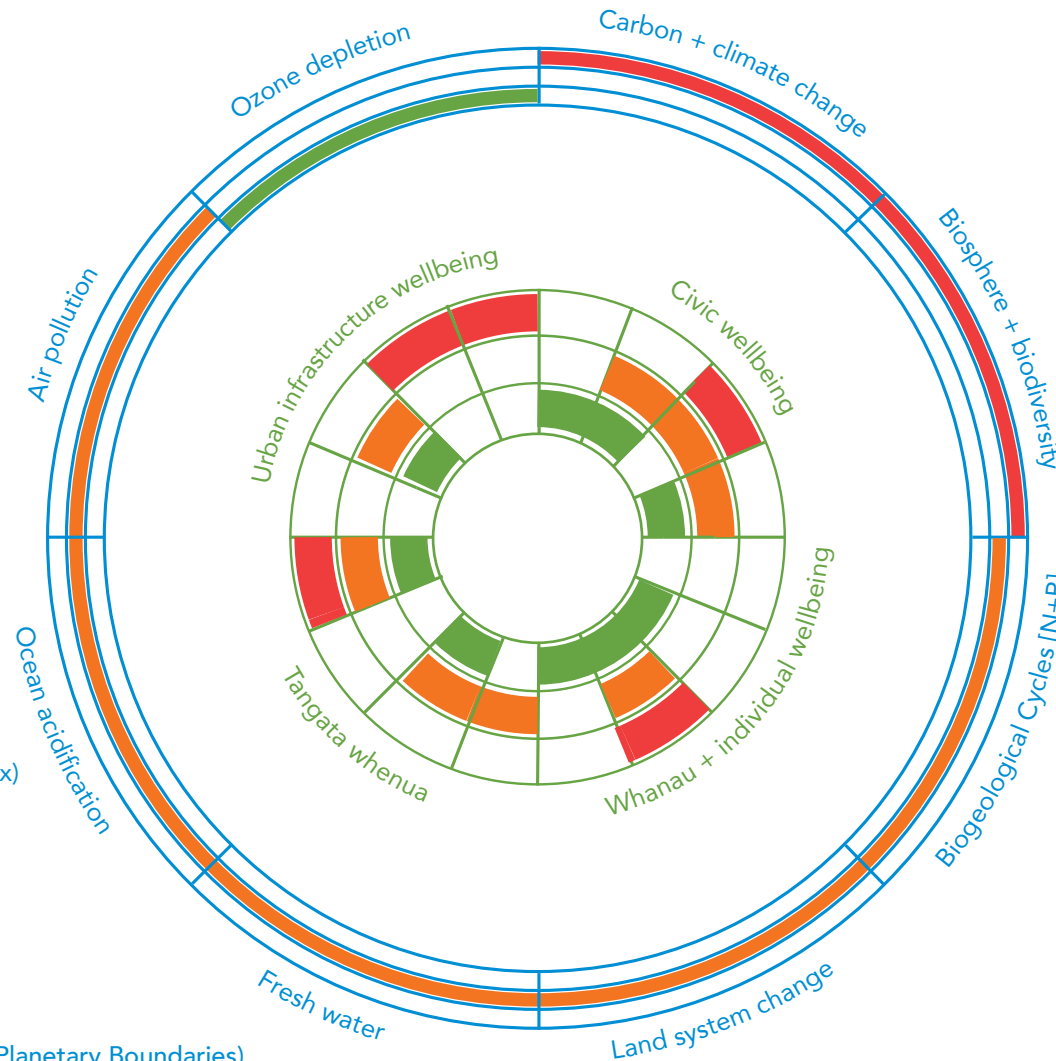
Fresh water

Ocean acidification

Air pollution

Ozone depletion

(Reference: Stockholm Resilience Centre / Planetary Boundaries)



LIMIT global heating to 1.5 C°
(IPCC 2018)

Daily carbon count: 415 ppm*

+1.1C NOW: CLIMATE CRISIS

X6: 6th mass extinction event: BIODIVERSITY CRISIS

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