KŌTĀTĀ
INSIGHT
BEHAVIOURAL ECONOMIC & SOCIAL ANALYSIS

Measuring outcomes In Te Tauihu

Wellbeing framework and Indicators

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1 INTRODUCTION

The Te Tauihu Intergeneration Strategy is centred on the idea of "being good ancestors". At the heart of the strategy is a concern about the wellbeing of the people and places of Te Tauihu, with a particular concern for the wellbeing of future generations and the degree to which current generations pass on the taonga of the region in a better state than when these taonga were placed in their care. This means thinking clearly about what wellbeing means to the people of Te Tauihu, which things are the important taonga that need to be protected for future generations, and how these things can be achieved.

Ideas such as wellbeing or taonga might seem qualitative in nature and a long way from the world of statistics, indicators, and data. However, to be good ancestors it will be necessary to effectively manage a wide range of different cultural, economic, environmental, and social outcomes. Effective management implies measurement. Without a good sense of how Te Tauihu is doing, where it is making progress, and where progress still needs to be made, it will not be possible to plan, to target resources effectively, or to hold the region's leadership and citizens to account. Measuring the wellbeing of the people of Te Tauihu and the state of the taonga which underpin that wellbeing in the future is therefore essential to the success of the Te Tauihu Intergenerational Strategy and of the region itself.

This report addresses the wellbeing framework that underpins the Te Tauihu Intergenerational Strategy. The wellbeing framework articulates the broad outcomes against which progress will be assessed for the strategy and illustrates how these relate to the more specific goals and actions that are the more immediate focus. Although developed for Te Tauihu by the people of Te Tauihu, the wellbeing framework presented here is also entirely consistent both with the broad approach taken by national and international organisations such as the New Zealand Treasury and the OECD, as well as in line with economic theory.

While the wellbeing framework provides a clear picture of "what good looks like" for Te Tauihu, simply outlining desired outcomes for the region does not in itself address the issue of measurement. The main focus of the report is to identify a suite of indicators that can be used to assess wellbeing outcomes in Te Tauihu. This involves both identifying the best available measures and identifying gaps that will need to be filled.

Structure of the report

This report is organised in five sections. After this introduction, the second section sets the context for the report. This includes both a brief summary of the background to the Te Tauihu Intergenerational Strategy and also a discussion of wellbeing measurement in general terms. Section two sets out how wellbeing measures can be used to support decision-making and outlines the capital stocks model that underlies most economic analysis of intergenerational wellbeing and sustainability.

The third section of this report presents the Te Tauihu wellbeing framework. This part of the report outlines the framework itself and explains how the different elements fit together. A brief discussion of wellbeing frameworks used elsewhere and how they compare to the Te Tauihu wellbeing framework is provided. The core of the report is contained in section four which sets out a measurement approach for the wellbeing framework. This includes proposing a suite of indicators to measure wellbeing outcomes in Te Tauihu that is both rigorous enough to be meaningful, but which is also practical. Section four also includes a discussion of the available data sources that can be used to fill in the proposed indicators.

The final section of the report considers the next steps once the strategy and wellbeing framework are signed off. This includes identifying gaps in the available data that will need to be filled and outlines the process for maintaining and using the wellbeing framework and indicators. This section of the report also discusses opportunities for using the framework to support

measuring the impact of initiatives in terms of the wellbeing framework.

2 CONTEXT

Being good ancestors: the Te Tauihu Intergenerational Strategy

As noted in the introduction, the Te Tauihu Intergenerational Strategy is centred around the idea of being "good ancestors". This provides a clear vision of the values that underpin the strategy, but also creates a formidable challenge: by clearly establishing a long-term, cross-cutting, and intergenerational scope for the strategy, the idea of being good ancestors also broadens the range of outcomes that will need to be measured to evaluate success. Where a more traditional economic development strategy would be expected to have a relatively narrow set of goals focusing on incomes and the growth rate of the economy, the Te Tauihu Intergenerational Strategy has set its scope much wider and its aims much higher.

Successfully evaluating the Te Tauihu Intergenerational Strategy will require an approach to measurement that captures this wider scope. In practice, this means that the measurement approach must achieve three things. First, it must incorporate the full range of outcomes that matter to the people of Te Tauihu. In other words, it must present a picture of "what good looks like" that resonates with the people of the region. Second, it must be able to support decision-making in an intertemporal context. In other words, it must inform us about trade-offs between now and the future. Finally, the approach taken to monitoring and evaluation must make it possible to go beyond simple averages. How we think about life in Te Tauihu is intrinsically affected by how outcomes are distributed across different people and places.

These three goals – breadth of scope, future focus, and a concern with the distribution of outcomes – were strongly supported in the consultation workshops in and around Te Tauihu that informed the development of the strategy. They are also a defining feature of attempts to measure wellbeing outcomes at the national and international level. The same three features are explicitly identified by the OECD in its How's Life? report (OECD, 2011) and underpin the New Zealand Treasury's Living Standards Framework (Treasury, 2018a and b; Smith, 2018a). *The Report of the Commission on Measurement of Economic Performance and Social Progress* (Stiglitz, Sen and Fitoussi, 2009), led by Nobel laureates Amartya Sen and Joseph Stiglitz also identified these three features and fundamental to meaningful measurement of progress. In this sense, the broad direction of the Te Tauihu Intergenerational Strategy is well-aligned with developments elsewhere.

Why measure wellbeing?

The fact that the Te Tauihu Intergenerational Strategy has a similar scope to work elsewhere is reassuring but does not in itself make a clear case for centring the Strategy around a wellbeing framework. Similarly, the outcome of the consultation carried out within Te Tauihu is important but would not be persuasive if a wellbeing lens brought no useful insights. It is therefore crucial to be clear as to why a focus on wellbeing is important.

Wellbeing is important because it represents one of the key goals of any policy or planning process. Ultimately, goals such as economic growth or efficient regulations are valuable because they are means to the end of higher wellbeing. Put more simply, we value economic development, local services and amenities, and an effective government because these things make peoples' lives better in some way. Measuring wellbeing is ultimately about measuring whether people are living better lives.

A focus on ends rather than means is particularly important in planning and policy processes in that all decision making in these areas involves an element of uncertainty. Although decisions are made on the basis of what theory, evidence, and lived experience tell us will improve peoples' lives, such judgments are not always right. A reasonable proposal may turn out not to work, or to achieve its goal in one area only at the cost of causing adverse consequences elsewhere. Average outcomes might improve but still leave some groups behind.

In all these cases focusing measurement narrowly will misrepresent the impact of the proposal on the outcomes that people ultimately care about. For example, economic growth on its own might improve the wellbeing of people through higher incomes, but if the growth occurs at the cost of severe pollution, the net impact might be negative. We measure wellbeing to make sure that we capture the outcomes that actually matter to people – not just the means to achieve those outcomes – and to make sure that we capture the full range of outcomes – so gains in a measured area do not obscure losses in an unmeasured area.

The need for a framework

While the reasons for measuring wellbeing are fairly intuitive, the case for developing a formal wellbeing framework is sometimes less clear. However, a framework is essential to any effort to measure wellbeing. At the most basic level, a wellbeing framework is necessary because wellbeing itself is a somewhat "fuzzy" concept. While the general idea of wellbeing is intuitive to most people, measuring wellbeing requires being very clear about what it is that needs to be measured.

A wellbeing framework defines the scope of what is to be measured and sets out how the different elements of wellbeing relate to each other. Beyond this, a measurement framework provides a link between the outcomes that matter to people identified through consultation with the wider public and economic frameworks grounded in the best available scientific evidence and economic theory.

Box 1. Using wellbeing measures to support decision-making

Boarini and Smith (2014; see also OECD 2015) discuss the application of a wellbeing framework to policy and identify three broad roles that such a framework can play. These are: *alignment*, *analysis*, and *accountability*. Alignment focuses on the role that an explicit wellbeing framework can play in supporting different groups or agencies in aligning their work with each other and with broader strategic priorities. By providing a common language and frame of reference for discussing the desired outcomes of policy, a wellbeing framework can assist in identifying externalities and issues that spill over from one policy silo to another.

A second way in which a wellbeing framework can be used to assist decision making is through the analysis of the impact of policies. At heart, most analysis of different options is concerned with identifying the effect of different proposals on the wellbeing of the population. An explicit wellbeing framework helps identify the outcomes that are the targets for proposals and supports the measurement of outcomes. This will mean applying the wellbeing framework to analyse the impact of different proposals on wellbeing at the regional, and community levels, and supporting this with relevant evidence of the impact across the different elements of the wellbeing framework.

An explicit wellbeing framework also supports institutional accountability. This occurs at two levels. First, monitoring of the wellbeing and capital stocks can help the public assess whether the region is moving in the right direction. This is supported by incorporating elements of the framework, such as indicators of wellbeing, into formal accountability documents. At the level of specific local agencies or bodies the framework itself can support accountability. Although many of the wellbeing outcomes are too generic to be of direct use as an accountability metric themselves, they provide a common framework for different bodies to anchor their performance measures to.

Beyond the alignment/analysis/accountability framing from Boarini and Smith – which was originally developed in the context of national monitoring – there is a fourth use for a wellbeing framework that ties directly into operational decisions: measuring *impact*. A key question in any operational context is did the intervention or project work? This means knowing not only did the project deliver the agreed output, but did these result in the desired outcomes? A wellbeing framework provides a basis for identifying clearly the outcomes against which impact can be assessed. Further, developing a set of clear measures of those outcomes provides the basis for assessing the impact in quantitative terms.

Traditional cost-benefit analysis (CBA) tools are helpful where the benefits are fully captured by market prices and quantities and provide a useful framework for thinking about inter-temporal trade-offs. However, many of the impacts of highest interest will relate to non-market outcomes and will not be able to be assessed through traditional CBA. Recent developments in valuation techniques for non-market outcomes, including those based on life satisfaction (OECD, 2013a; Fujiwara, 2013) and choice experiments (Benjamin et al, 2014) mean that where good measures of wellbeing outcomes are available, it is now possible to translate these measures into values that can be used in a CBA process.

The economics of wellbeing

The measurement of wellbeing is solidly grounded in economic theory. While economics avoided engaging strongly on issues of wellbeing between the 1950s and the 1990s, it has always had the idea of utility as its core (O'Donnell, Deaton, Durand, Halpern, and Layard, 2014). Going back further, Pigouvian welfare economics (Pigou, 1929) focused on overall 'social welfare', by which Pigou meant what we would now refer to as wellbeing. Building on the existing links to wellbeing embodied in traditional welfare economics and the standard economic model of the individual built around the utility function, there is now a fairly well established body of work – both empirical and theoretical – on the economics of wellbeing (Fitoussi, Sen, Stiglitz, 2009).

What is wellbeing?

A focus on wellbeing does not imply that there is a single recipe for a good life that all people or places should be expected to follow. In fact, the most widely used definition of wellbeing defines it as *the ability of a person to live the king of life they have reason to value* (Sen, 1993). This approach to conceptualising wellbeing leads to a multi-dimensional view of wellbeing in practice. In particular, by focusing on the capability of people to exert meaningful choice in their lives, this approach provides a useful guide to the elements of wellbeing that we might wish to measure. Typically this leads to a focus on those "primary goods" that are necessary to exercise meaningful choice: an adequate income, health, knowledge, personal safety and so on.

The main alternative approach to conceptualising wellbeing on meaningful choice is to focus instead on peoples' subjective perceptions of their lives. This neo-utilitarian approach has been influential in the United Kingdom and sees wellbeing as consisting ultimately of "good mental states". From this perspective measures of peoples' subjective wellbeing such as overall life satisfaction or happiness are taken to capture wellbeing (e.g. Layard, 2006).

In principle Sen's "capabilities" approach to wellbeing and the neo-utilitarian approach are very different. A person with limited meaningful choice in their life – such as a very poor peasant in a developing country – who was nonetheless subjectively happy would count as having low wellbeing under the capabilities approach but high wellbeing from a neo-utilitarian perspective. In practice, however, the two approaches generally lead to the same list of things that are important for wellbeing. The capabilities typically identified as important (e.g. income, health, safety) turn out to be the main drivers of life satisfaction and subjective happiness empirically (Boarini et al, 2013).

No strong judgement is made here about which of the two main theoretical approaches to wellbeing is appropriate for Te Tauihu. The approach adopted to developing the Te Tauihu wellbeing framework (see chapter 3) is conceptually consistent with either in that it focuses on identifying "what good looks like" in terms of the main outcomes that matter to the people of the region. These wellbeing outcomes can be interpreted as either the capabilities for a good life, or as the determinants of good mental states.

The capital stocks model

The standard approach to thinking about intergenerational wellbeing in economics is the so-called "capital stocks model". This is the approach that underpins the Treasury's Living Standards Framework (Smith, 2018a) and also forms the core of the OECD's approach to measuring

wellbeing[1]. Figure 1 below illustrates the OECD conceptual model of intergenerational wellbeing (OECD, 2011), and is a useful basis for outlining the main characteristics of the capital stocks model.

At the core of the model is a fundamental distinction between "here and now" and the future. Individual wellbeing in the OECD model relates to the "here and now": it captures the flow of current wellbeing experienced by people. It is concerned with outcomes that are, in some sense, of intrinsic value in enabling people to pursue the sorts of lives they have reason to value (i.e. "what good looks like"), rather than focusing on goals with a more instrumental focus.

By individual wellbeing, the OECD does not mean to imply that wellbeing is a reductively individualistic concept, but simply that wellbeing is something that is experienced by people rather than by abstractions such as the "economy". The OECD model of individual wellbeing specifically includes aspects related to the social context in which people are embedded.

Measuring wellbeing, in the OECD framework, involves looking not only at the level of valued outcomes, but also at the distribution both across the population as a whole and also across different sub-populations such as age, sex or ethnicity. Finally, it should be noted that current wellbeing is multidimensional. It includes some aspects that relate to market outcomes (material conditions) – income and wealth, jobs and earnings and housing – but also a range of outcomes that go beyond what is traded in the market (quality of life) – health status, work-life balance, education and skills, social connections, civic engagement and governance, environmental quality, personal security and subjective wellbeing.

Figure 1 – The OECD approach to measuring wellbeing
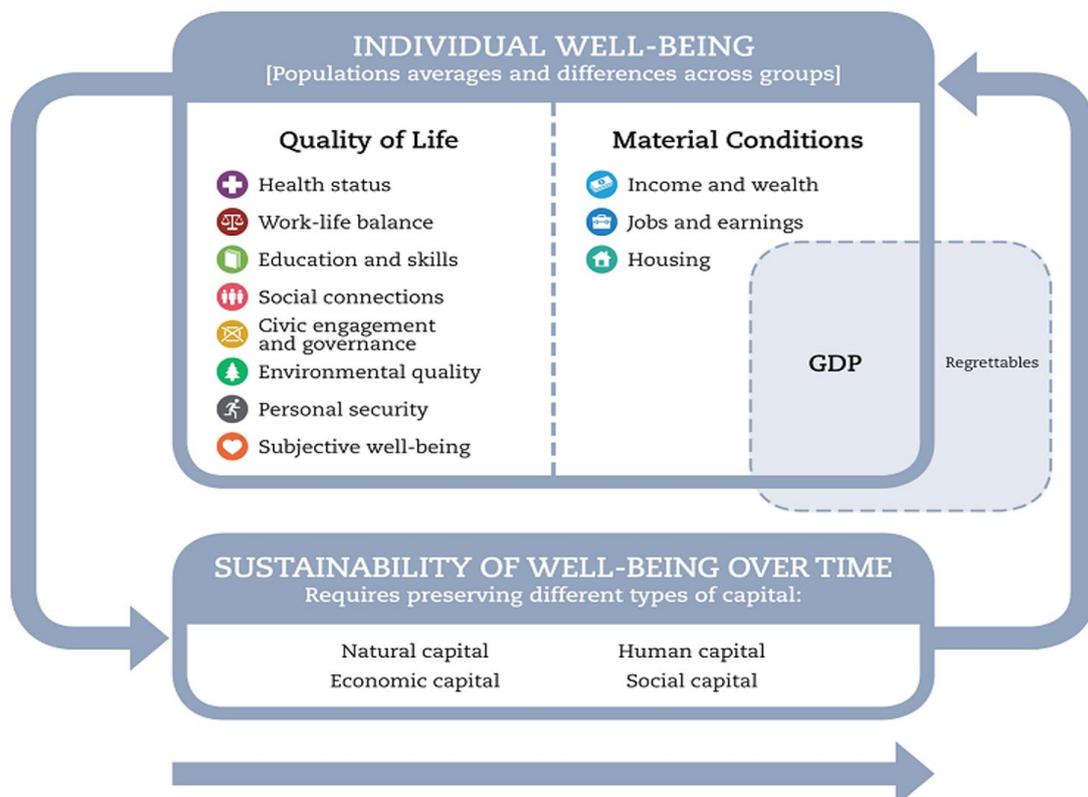
The second crucial element of the OECD framework relates to the sustainability of wellbeing over time. This focuses on preserving the levels of the four capital stocks used to produce wellbeing outcomes: natural capital, human capital, economic capital and social capital. These capital stocks

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[1] See also Arrow et al (2012), Integrated Reporting Council (2013), and UNECE (2014).

should be thought of as capital in the sense that they are resources that are capable of storing value, and which create a stream of benefits over time. However, the capital stocks are not assumed to produce benefits independently of each other. Instead, the capital stocks are considered to be factors of production (resources) used jointly to produce wellbeing outcomes. Each of the dimensions of individual wellbeing is the result of all of the different capital stocks. Investments in the capital stocks will result in the levels of the relevant stocks increasing, while depreciation, resource depletion and pollution or waste may result in capital stock levels declining. The circular arrows connecting the capital stock to wellbeing represent the use of resources in production (the right hand side of Figure 1) and investment in the capital stocks (the left hand side of Figure 1).

The OECD framework as presented in Figure 2 also highlights some of the classic criticisms of gross domestic product (GDP) as a measure of wellbeing. In particular, there may be expenditure that contributes to GDP, but which represents a net negative impact on wellbeing (regrettables). However, this serves primarily an illustrative function rather than representing a core part of the framework requiring measurement.

One of the main strengths of the OECD wellbeing framework is that, like the System of National Accounts, it is grounded in a coherent economic model. This has three main advantages. First, it imposes a set of constraints on the OECD framework by providing a clear set of parameters about what should be included or excluded from the model and where different concepts fit. Without a framework of this sort there is a risk that attempts to add fundamentally different things or incorporating useful concepts in the wrong place can undermine the framework as a measure of wellbeing. This is almost certainly part of the reason why many early attempts to produce wellbeing indices historically underperformed GDP as a measure of people's wellbeing (Delhey & Kroll, 2013).

A second advantage of basing the measurement framework off an economic model is that it can help in applying the framework to specific issues. Measurement of wellbeing is not an end in itself, but a means of improving the quality of decision-making. By formalising the relationship between different parts of the measurement framework, an economic model can help to identify trade-offs, synergies or causal relationships between different parts of the measurement framework that may be relevant to policy.

The final advantage of grounding wellbeing measurement in an economic model lies in the ability to integrate the wellbeing measures with existing economic reporting. By choosing to measure intergenerational wellbeing through existing economic frameworks rather than starting again from scratch, reporting on current wellbeing and sustainability can be linked to the same set of core concepts. This both helps avoid double-counting between the wider sphere of wellbeing and traditional economic reporting as well as making it clear how the concepts used in the wellbeing framework relate to existing measures.

Applying the capital stocks model to decision-making

The capital stocks model, which underpins economic analyses of wellbeing, highlights two key types of question:

- Does the proposed policy *improve wellbeing now* (current wellbeing) *or in the future* (capital stocks)?
- What are the *spill-overs* from the policy to outcomes other than the primary goal of the policy?

The first question directs the analyst's attention to the issue of whether a policy is aimed addressing an issue affecting peoples current wellbeing or whether it is aimed at increasing the stock of resources for the future. In the first case, the policy is conceptually concerned with current consumption, while in the second case the policy is a form of saving. While many policy initiatives will have elements of both goals, it cannot be assumed that a policy that achieves its goal in one sense will necessarily have good outcomes in the other, and identifying these trade-

offs is important.

A capital stocks model also directs analysts' attention towards spill-overs into outcomes other than the primary target of a policy. Policy interventions may have synergies, where a policy targeted at one dimension of wellbeing – such as health – may have spill-over effects on other dimensions of well-being (e.g. jobs and earnings) or impact on the capital stocks (e.g. human capital). Alternatively, a policy that has positive outcomes in one area – such as improving current income – may have negative effects in other dimensions of wellbeing or on the capital stocks (e.g. natural capital).

3 A WELLBEING FRAMEWORK FOR TE TAUIHU

Developing a wellbeing framework for Te Tauihu

The process of developing a wellbeing framework for Te Tauihu is part of the larger process of developing the Te Tauihu Intergenerational Strategy. This means that the outcomes identified in the wellbeing framework are intended not only to support monitoring of wellbeing but were developed as a core part of the process that led to the goals and actions identified in the strategy. Figure 2 below provides a schematic diagram of how the different elements of the wellbeing framework fit together in this context and how they support the development of the narrative and actions in the Te Tauihu Intergenerational Strategy. Strictly speaking, the wellbeing framework itself comprises the wellbeing outcomes column of figure 2, while the goals, theory of change, and actions columns are about moving from the wellbeing framework to the Te Tauihu Intergenerational Strategy.

Figure 2. The elements of the Te Tauihu wellbeing framework

	Wellbeing outcomes	Goals	Theory of change	Actions
Statements	*What does good look like?*	*What do we aim to achieve?*	*What drives change?*	*What are we going to do?*
Measures	*Wellbeing indicators*	*Targets*		*Input and output measures*
Narrative	*Explains the intervention logic linking proposed actions back to the wellbeing outcomes they are intended to change*			
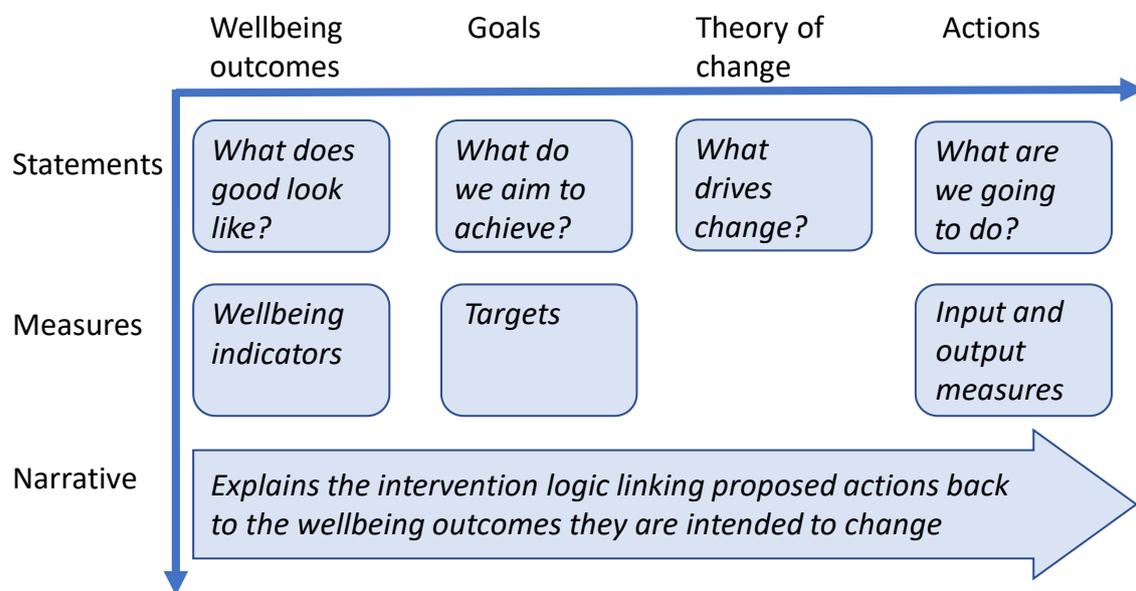
The starting point for developing a wellbeing framework to support the Te Tauihu Intergenerational Strategy is in the top left corner of figure 2. Before it is possible to decide on what to do, it is necessary to have a clear view of what good outcomes look like. This means understanding and articulating the wellbeing outcomes that matter to the people of Te Tauihu. Once there is a clear picture of what "good" looks like it is possible to move across the diagram to the right.

Identifying goals reflects the need to prioritise. If all aspects of all wellbeing outcomes are a priority, then nothing is a priority. The purpose of identifying goals is to single out those aspects of wellbeing in Te Tauihu that are to be the focus of the strategy. This might be areas where Te Tauihu faces specific challenges – such as low incomes relative to the rest of New Zealand – but could equally be areas where Te Tauihu has a relative strength that can be built on.

Articulating a theory of change involves being clear about what drives change with respect to each of the priorities. Although this will not be reflected in measures at any point, any view about how to achieve a specific goal is going to be grounded in an implicit model or set of beliefs about of what causes change. Being transparent about these beliefs expose them to feedback and contributes to the selection of a robust and credible set of actions.

The actions themselves are the proposals that form the core of the strategy. They comprise the suite of things that will be done to achieve the goals articulated earlier in the process. In contrast to the wellbeing outcomes, which are about what the people and places of Te Tauihu *experience*, the actions are about what specific communities, agencies, and local bodies ***do*** in order to achieve better outcomes.

Measurement necessarily cannot be considered until the respective statements for the outcomes, goals, and actions have been agreed. However, once these statements have been agreed it is possible to flesh out the measurement. This report largely focuses on fleshing out the wellbeing indicators that are the fundamental metric of success for the strategy. Targets can then be defined with respect to these indicators. For example, if one of the indicators is median hourly earnings in Te Tauihu then a target might be that Te Tauihu's median hourly earnings are higher than the national average.

Input and output measures flow from the choice of actions. Inputs capture the resources needed to achieve these outcomes: usually the cost of the proposal. Output represents what is directly built or produced by a particular proposal or action (as opposed to outcomes, which capture where an action has impact). Traditional accounting and reporting requirements are structured around the measurement of inputs and outputs, so once the actions are agreed, this aspect of measurement is relatively straight forward.

The narrative is what explains how the Te Tauihu Intergenerational Strategy proceeds from the wellbeing framework and how the proposed actions will translate into better wellbeing outcomes for the people and places of Te Tauihu. While the outcomes, goals, actions, and measures form the building blocks of the strategy, the narrative is what ties these together. A key role for the narrative is also to provide a plain language explanation for the wellbeing framework and strategy that can be used to communicate to a wider audience.

The Te Tauihu wellbeing framework

Figure 3 below illustrates the Te Tauihu wellbeing framework. At the centre of the diagram are the core principles that underpin the framework: equity, legacy, and values. These guide the direction of the strategy and serve as touchstones for how the goals of the strategy will be pursued.

Surrounding the central values are the six key stakeholder groups considered in the strategy (mana whenua, business, workers, government, people/whanau, and consumers). While clearly an individual can have multiple roles among these groups, the aim here is articulate the important viewpoints with which the framework will have to engage. Box 2, below, outlines the process by which these groups were able to contribute to and participate in shaping the Te Tauihu intergenerational strategy. Outside the stakeholder groups are the enablers that will underpin change in Te Tauihu. These are the levers that will be used to drive change towards better outcomes. Taken together these three layers of the circle in figure 3 are whaiao – "transitioning to a new world". In the context of figure 2 they comprise the key elements of a theory of change.

The next layer out – taiao – captures the wellbeing outcomes that matter to the people and places of Te Tauihu. While the word "taiao" in Māori refers to the natural world or environment, it is used here as an encompassing concept taking in the whole world and reflecting that the wellbeing of Te Tauihu is ultimately grounded in the natural world.

Figure 3. The Te Tauihu wellbeing framework
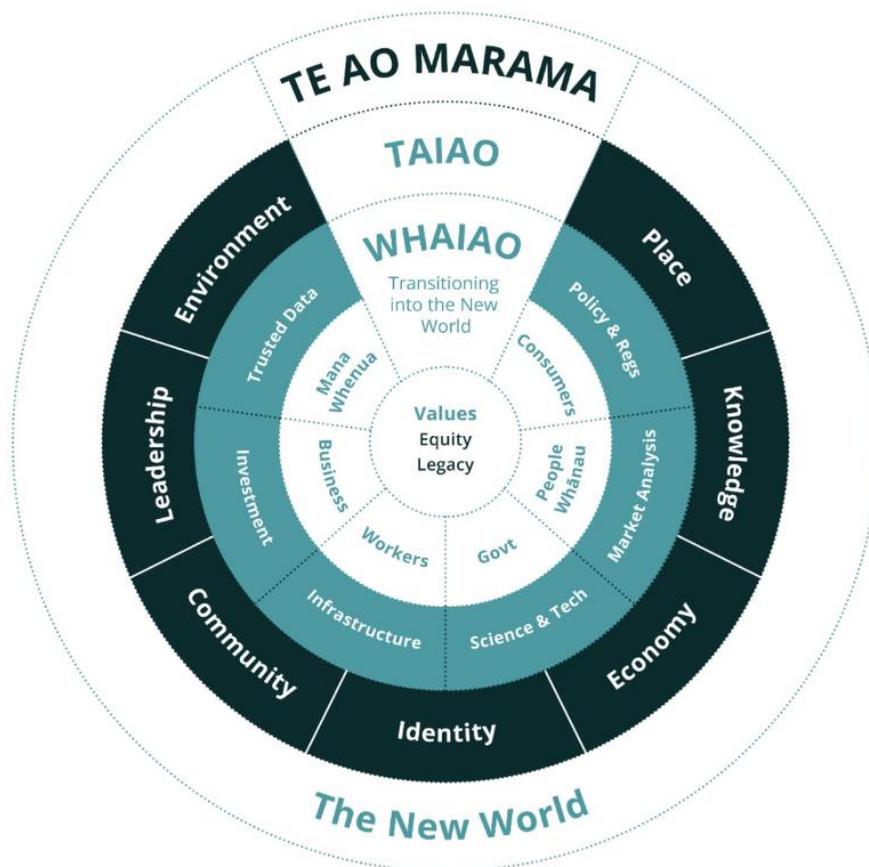
Seven outcome dimensions are identified to describe wellbeing in Te Tauihu. These are environment, leadership, community, identity, economy, knowledge, and place. Taken together the seven outcome dimensions capture the things that matter to the people of Te Tauihu. They are the dimensions against which wellbeing is assessed. An improvement in any of these outcomes is taken to constitute an improvement in wellbeing.

The seven wellbeing outcomes in the Te Tauihu wellbeing framework are listed below. Each wellbeing outcome is accompanied by an outcome statement defining what a good outcome with respect to that dimension of wellbeing means for Te Tauihu. The seven outcome statements are:

Environment

Our relationship with the natural world is healthy.

Leadership

Our decision-making is collaborative, courageous, inclusive, respectful and acts for the long term. We uphold the values and rights of the people and taonga of our region.

Economy

Our resilient economy allows our people, places, communities, and businesses to thrive.

Knowledge

Our people are knowledgeable, curious, and creative.

Places

Our people can access affordable, and quality places to live. Our shared spaces are places where people want to be.

Community

Our people and communities are welcoming, healthy, and safe. Our people are connected across generations, cultures, and distance.

Identity

Our people are proud of their individual and shared identity and feel a strong sense of belonging. We treat each other with kindness and respect.

No attempt is made within the Te Tauihu wellbeing framework to reduce wellbeing from these seven dimensions to a single metric. While people and communities may need to make trade-offs between one wellbeing outcome and another, the domains are taken to be, in some sense, the basic elements of wellbeing. Rather than envisaging wellbeing as an average across the seven dimensions, the Te Tauihu wellbeing framework envisages wellbeing as a space defined by the seven outcome dimensions in which people and communities have the ability to pursue their own lives.

Box 2. Developing the Te Tauihu wellbeing framework

Although the multi-dimensional approach to measuring wellbeing discussed above is widely used, it is essential that the wellbeing framework for the Te Tauihu Intergenerational Strategy is grounded in the things that matter to the people of Te Tauihu. This requirement underpinned the development of the Te Tauihu wellbeing framework. The outcome dimensions were identified through a process involving a core working group with members from Marlborough, Nelson, and Tasman councils, Wakatu Inc., and a number of invited experts. The initial outcome statements were then tested with the project members involved in the wider Te Tauihu Intergenerational Strategy as well as through a series of public engagements with the people of Te Tauihu.

The public consultation was essential to the Strategy for two reasons. First, because it ensured that the wellbeing framework and goals at the heart of the strategy focused on the things that mattered to the people of the region. However, equally important, was that the process of developing the Strategy needed to align with the values that underpin it. A broad and transparent public mandate is essential to the mana and legitimacy of the Te Tauihu Wellbeing Strategy and of the wellbeing framework that supports it.

Between May and September 2019, the working group responsible for developing the Strategy engaged with thousands of people from across the region. At the core of the engagement were **five strategic workshops** that included iwi, the business community, government agencies, local government and the wider community. These were attended by over 200 people from a diverse range of backgrounds and served as the primary means to test the Te Tauihu wellbeing framework. **Six Te Tauihu talks** were held that brought together more than 600 people around a series of "fireside chats". The live streamed audience for the chats exceeded 10,000 people. A **youth summit** and a **large business hui** were held to seek input from these parts of the community, while another **six community hui** took place during August to test the ideas developed by the working group. Social media outreach averaged over 30,000 people per month with more than 12,000 substantive engagements.

The development of the Strategy was overseen by a steering group representing key stakeholder groups from across the region. These included the three Mayors (Marlborough, Nelson, Tasman), representatives from nga iwi o Te Tauihu, the Chairs of the Nelson-Tasman and Marlborough Chambers of Commerce, business representatives, the Nelson-Marlborough Institute of Technology, as well as central government being presented in an advisory capacity.

Comparison with other wellbeing frameworks

While the first priority of the Te Tauihu wellbeing framework is to capture what good looks like for the people of Te Tauihu, it is nonetheless useful to compare the Te Tauihu framework with frameworks developed elsewhere. There are two reasons for this. First, all people share much in

common. Comparing the Te Tauihu framework with those developed elsewhere provides a chance to test whether there is anything identified important by people elsewhere that is missing from the Te Tauihu framework. Although such a difference does not necessarily mean that the Te Tauihu framework needed to change, it does provide a useful check that nothing has been omitted through simple oversight.

The second advantage in comparing the Te Tauihu framework with other frameworks is that it is useful pragmatically if the Te Tauihu framework works well alongside them. This is particularly important for frameworks such as the Treasury's Living Standards Framework, which will have a strong influence on how central government prioritising spending and investment. Although the Te Tauihu framework does not need to be the same as the Living Standards Framework, it is useful if it is possible to translate from one to the other.

The Te Tauihu wellbeing framework is consistent with the wider academic literature on wellbeing and with the approach adopted by many other organisations in applying a wellbeing lens to decision-making. As discussed in section 2, perhaps the most widely used definition of wellbeing – Amartya Sen's capabilities approach – defines wellbeing as the *ability of a person to live the king of life they have reason to* value (Sen, 1993). In practical terms, applying the capabilities approach is usually taken to involve identifying a set of outcomes that are fundamental to a person's ability to exercise meaningful control over their own life.

Such an approach has been adopted in New Zealand by the Treasury in their Living Standards Framework (Smith, 2018a, Treasury, 2018a) and earlier by the Ministry of Social Development in *The Social Report* (Ministry of Social DevelopmentSD, 2003, 2007). Both the Social Report and the Living Standards Framework make reference to Sen and to the idea of wellbeing as capabilities as underpinning their conceptual framework and then measure wellbeing across a number of different wellbeing outcomes. Similarly, in an international context the OECD (OECD, 2011, 2017a) explicitly grounds its approach to measuring wellbeing in Sen. A wide range of other countries including Israel (OECD 2015), the UK, and Slovenia (OECD, 2017c) have also adopted similar approaches.

Not only is there a common approach to what wellbeing "is" that is widely used across different countries and organisations, there is also a strong consensus of the main dimensions or elements of wellbeing found in different frameworks. The lists of capabilities that comprise wellbeing from a perspective grounded in Sen (e.g. Sen, Stiglitz, Fitoussi, 2009, OECD 2011) map very closely onto the main determinants of peoples' overall life satisfaction (Boarini et al, 2012; Fleche et al, 2012). Public consultations in widely varying parts of the world tend to come up with very similar sets of outcome domains. This is perhaps not surprising where there is clear cross-fertilisation from a high-profile international framework to a domestic framework such as in the case of Israel's indicators of "well-being, resilience, and sustainability" (OECD, 2015). However, there are also very strong similarities between outcome frameworks developed entirely independently.

The New Zealand Social Report (MSD, 2003) and Big Cities Quality of Life indicators (Quality of Life Project, 2007) both use outcome frameworks almost identical to that developed by the OECD (2011) despite entirely separate origins. Indeed, the only really substantive differences between the MSD and OECD frameworks are the addition of a cultural identity domain in the Social Report, that housing is treated within the economic standard of living domain in the Social Report rather than separately (although the housing indicators in each report are very similar), and the Social Report has no subjective wellbeing domain (although life satisfaction measures have regularly been included in the conclusion of the Social Report). Both the OECD and Social Report frameworks map very closely onto the wellbeing outcomes identified through public consultation in Te Tauihu (figure 4).

Figure 4. A comparison of wellbeing frameworks
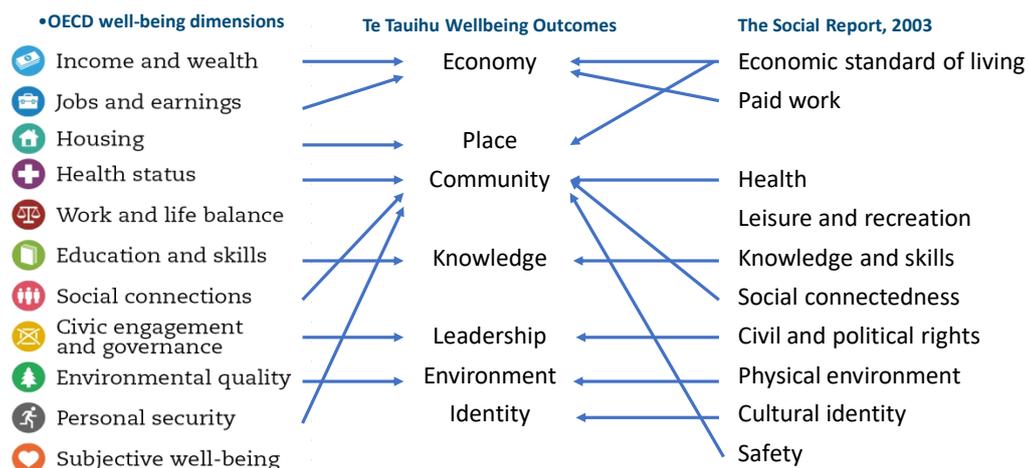
Source: OECD, 2011; MSD, 2003

In addition to the views of experts, public consultation, and evidence from life satisfaction, there is also solid behavioural evidence that the wellbeing domains represented in the OECD and similar models capture the important elements of wellbeing and add significant value to more traditional measures of progress such as GDP. Delhey and Kroll (2013) show that the OECD Better Life Index, which includes all of the dimensions of current wellbeing in the OECD framework, significantly out-performs both real GNI per capita, the UN's Human Development Index, and a range of other indices of progress in terms of predicting average life satisfaction. The key distinguishing features of the BLI when compared to the other indices considered are the scope of the wellbeing domains (which provide a relatively comprehensive description of current wellbeing) and the fact that the BLI focuses explicitly on measuring current wellbeing rather than introducing other ad-hoc adjustments.

The link between measures of progress using the full set of OECD domains and life satisfaction is interesting because life satisfaction is strongly linked to people's actual behaviour. George Ward (2015), for example, shows that changes in life satisfaction predict changes in the vote share of the incumbent government in EU countries, and that this relationship is much stronger for life satisfaction than for economic growth, unemployment, or inflation. Grimes et al (2012) also find that life satisfaction explains real world behavioural choices using migration as an example, while Fleurbaey and Schwandt (2015) reach a similar conclusion on the relevance of life satisfaction from survey data.

Intergenerational issues: addressing sustainability

The capital stocks model used by Treasury and the OECD defines sustainability as a situation where current wellbeing is stable or increasing and the capital stocks (resources) used to produce wellbeing are not decreasing. While the Te Tauihu wellbeing framework is intended to be broadly consistent with a capital stocks model, it does not separately identify the capital stocks in the framework (i.e. the capital stocks do not feature directly in figure 3). There are two reasons for this. First, the capital stocks model is technical and intended to align directly with economic models. However, the main audience for the Te Tauihu wellbeing framework includes the general public and consultation indicated that for many stakeholders in Te Tauihu framing key resources as capital stocks hindered rather than aided communication. For example, the Māori world view that underpins the Te Tauihu wellbeing framework (figure 3) does not make a strong distinction between natural resources and wellbeing partly because wellbeing is not simple something vested in individuals but is a property of community and place.

The second reason for not explicitly including the capital stocks in the Te Tauihu wellbeing framework is a technical one. The capital stocks in Te Tauihu are not a good measure of the resources available to produce wellbeing in Te Tauihu. Important elements of the capital stock for

Te Tauihu are best measured at a national level. For example, Te Tauihu can easily make use of human capital from elsewhere in New Zealand, and the social capital stock that underpins wellbeing in Te Tauihu is as much about norms and values shared at the national level as it is about elements specific to the region. Even the produced and natural capital stocks accessed by the businesses and communities of Te Tauihu are broader than the produced and natural capital stocks directly associated with the region. The transport and communications networks for Te Tauihu (examples of produced capital) are nested within wider national networks and would be of little value without them. Similarly, most of the energy resources used within Te Tauihu come from other parts of the country. The Treasury Living Standards Framework is able to measure capital stocks at the national level precisely because the System of National Accounts and other data sources are able to capture trans-border flows of people and resources, this is not the case at the regional level. Trying to measure the size of Te Tauihu's capital stocks would tell us little about the potential of the region to produce wellbeing or about sustainability[2].

The approach adopted to measuring sustainability for the Te Tauihu wellbeing framework has been to fold indicators of sustainability into the dimensions of wellbeing. Reflecting this, the aim is for each of the seven dimensions of wellbeing in the Te Tauihu wellbeing framework to have indicators relating to the level of wellbeing outcomes achieved in that dimensions, the distribution of wellbeing outcomes in that dimensions across people and communities, and the sustainability of outcomes over time and across generations.

Indicators of sustainability will fall into two broad categories. In some cases they will be measures of the capital stock, similar to those used by the Treasury in the Living Standards Framework. For example, the labour fore participation rate could be included in the knowledge domain as a measure of the available stock of human capital. Capital stock measures of this sort will be used where they are appropriate given Te Tauihu's regional context and where they are not heavily affected by the technical issues discussed above.

These indicators, however, will be supplemented by indicators of investment and reinvestment into the capital stocks where this is more appropriate. Because flow measures of this sort capture what is happening in Te Tauihu with respect to safeguarding the wellbeing of future generations they are potentially less subject to criticism on the technical grounds discussed above. In the knowledge domain the NEET rate (youth Not in Education, Employment, or Training) is an example of a flow measure as it captures the degree to which future labour market cohorts are building skills and knowledge.

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[2] It would be entirely possible for capital stocks in Te Tauihu to be stable or increasing but the net impact of Te Tauihu on New Zealand's capital stocks to be negative if this impact was "exported" to other regions.

4 MEASURING WELLBEING: INDICATORS

Given a clear conceptual outline, the choice of the best available indicators is essentially a technical task. The Te Tauihu wellbeing framework discussed in the previous section fills this role and provides an outline of what dimensions of wellbeing that need to be measured. However, moving from a framework to indicators requires some additional decisions. In particular, it is important that indicators are technically sound and that the process for selecting them is transparent. For this reason, it is useful to select indicators on the basis of formal quality criteria. The first part of this chapter sets out criteria for indicator selection.

In addition to these quality-related criteria, it is also important that data for the indicator are actually available. The second part of this chapter considers available data sources that could be used for indicators of wellbeing in Te Tauihu. However, there is also a risk that too strong a focus on data availability leads to the acceptance of poor-quality information where the available data are not good.

The remainder of this chapter considers each distinct element of the Te Tauihu wellbeing framework from the perspective of measurement. In each case, a brief description of the concept to be measured is provided, building on the high-level outcome statements in the wellbeing framework and consistent with the best available evidence on intergenerational wellbeing. In addition to describing the nature of the measurement concept, this outline also sets out its dimensionality. While it may be possible to capture some aspects of wellbeing reasonably adequately with a single indicator, other aspects may require more than one indicator. After describing the measurement concept, potential indicators are then listed. Where the available indicators do not perform well against the criteria, suggestions for future data collection are outlined.

Indicator selection criteria

Indicators are statistics that provide information on progress towards a particular goal or outcome. They differ from other statistics and measures in that they are not simply descriptive: movement in an indicator has a clear good/bad interpretation with respect to an outcome. For example, the number of people living in Te Tauihu is an important statistic relating to the region, but is not in itself an indicator of wellbeing. It is not possible to interpret an increase in the population as intrinsically good or bad. The mean life expectancy of people in Te Tauihu is, however, a good indicator of health outcomes in the region. All other things being equal, an increase in life expectancy indicates an improvement in population health, while a decrease indicates the reverse.

Five core indicator selection criteria are proposed for the Te Tauihu wellbeing framework. These have been adapted from those used by the OECD in its *How's Life* report (OECD, 2011) and by MSD in the *Social Report* (Ministry of Social Development, 2007). In selecting indicators for these, we want to know that each indicator is:

- directly **relevant** to the concept being measured
- **comparable** with indicators used elsewhere
- **sensitive** to policy interventions and amenable to change
- able to be **disaggregated** to look at the distribution of outcomes, and
- **timely** in that it is available without too long a delay and can provide information on changes over time.

A sixth criterion for indicator selection is applied to the suite of indicators as a whole: **parsimony**. This reflects the fact that, the more indicators that are included, the harder it is to make sense of the overall picture. The purpose of monitoring wellbeing in Te Tauihu is to inform decision-making and assess progress. While there is undoubtedly a place for detailed analysis, the indicators identified below for monitoring the Te Tauihu wellbeing framework are intended as the minimum

set that provide the required information.

Data Sources

Measuring wellbeing outcomes in Te Tauihu depends crucially on the availability of relevant and timely data. As is the case for other regions of New Zealand, data availability presents a significant challenge. Generally speaking, most of the available data from public accounting focuses on the inputs to producing services (budgets and expenditure) and the outputs from those services (i.e. what goods or services were provided). To effectively monitor wellbeing, information is needed on the outcomes achieved rather than the inputs or outputs. The range of data sources that provide robust information on the wellbeing outcomes experienced by people is limited in terms of range of outcomes considered, timeliness, and length of time series.

Statistics New Zealand

Statistics New Zealand is the primary source of statistical information for the New Zealand government and holds a wide range of data on a diverse range of different topics. This includes an extensive range of measures of wellbeing outcomes. While information on economic outcomes, population demographics, and the labour market has a relatively long history, since the 2000s Statistics New Zealand has invested significantly in a range of robust measures of other wellbeing outcomes including measures of social contact, trust in others, subjective wellbeing, cultural identity, and perceived safety.

Recent work by Statistics New Zealand to develop a set of measures to monitor wellbeing and sustainability at a national level – Indicators Aotearoa New Zealand – has further focused Statistics New Zealand on identifying and filling any data gaps relating to the measurement of wellbeing. Reflecting these investments, Statistics New Zealand data is the primary source of information on wellbeing outcomes at both the national and local level. However, the information available at the local level is much more limited than at the national level.

The Census

The Census is traditionally the primary source of social, demographic, and economic data at the local level in New Zealand. Because it is designed to capture information on all New Zealand households, the Census is able to produce detailed information at the regional and local level. This includes information on the distribution of outcomes within a region. However, the Census also has a number of important limitations. The most significant of these relate to timeliness and scope.

Because the census is such a large undertaking it only occurs every 5 years. This means that, at any given point in time, the most recent census data is likely to be several years old. From a descriptive picture this is not necessarily a major issue provided that the outcome of interest does not change to rapidly. However, from the perspective of monitoring change over time and identifying turning point the census is much more limited. If the most recent information indicates that an outcome has deteriorated it is not satisfactory to have to wait another 5 years to see if actions taken to address the issue have worked.[3]

Because of the requirement that a census form is filled out for every New Zealander, Statistics New Zealand is acutely aware of the respondent burden associated with the census. This means that the scope of information collected within the census is relatively narrow. The core of the census is basic demographic information, supplemented by a narrow range of potential outcome measures.

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[3] In practice the situation is worse than this. Identifying a trend would normally require 2 or more data points meaning that it might take 10 years before we can confidently identify a trend in census data and another decade to assess whether or not a trend has changed.

Household Surveys

In New Zealand much of the most useful outcomes information at a national level derives from household surveys run by Statistics New Zealand. The Household Economic Survey (HES), Household Labour Force Survey (HLFS), and New Zealand General Social Survey (NZGSS) provide detailed information on household income and expenditure (HES), jobs and earnings (HLFS) and wider social and wellbeing outcomes (NZGSS). All three surveys are crucial sources of information about people, whānau, and households, and the NZGSS is of particular relevance is it is intended to support the monitoring of wellbeing outcomes (Fleischer, Smith, and Viac, 2016). However, all three surveys are sample surveys with a total sample size ranging from 8,500 (NZGSS) through to 30,000 (HLFS).

With a relatively small population of 150,600 in 2018, Te Tauihu represents only 3 percent of New Zealand's total information. This means that the sample size for Te Tauihu from the main household surveys is itself small – between about 260 in the NZGSS through to about 920 in the HLFS. While this is sufficient to provide aggregated information on Te Tauihu as a whole, it allows for very little in the way of looking at the distribution of outcomes. The larger surveys (the HLFS and the HES) can provide reasonably robust averages for Te Tauihu and possibly some limited distributional information (e.g. male vs female outcomes), while the NZGSS can provide only averages for the whole region, and even this is subject to a relatively large margin of error.

A second constraint with the survey data relates to timeliness. While the HLFS is collected in a quarterly basis, the HES is annual and the NZGSS is undertaken only every second year. This means that wile labour market and economic outcomes can be updated fairly regularly, the situation is much less satisfactory for the non-market outcomes for which the NZGSS is the only data source.

Economic Statistics

While the census and household surveys provide most of the information available on outcomes at an individual level, some key indicators are available from Statistics New Zealand's economic statistics. These include measures calculated from the System of National Accounts (SNA) – which is used to derive GDP – and some measures related to businesses. Although most economic statistics are aggregate (i.e. they relate to places or groups rather than people), a number of important outcome indicators can be derived from them.

From the perspective of measuring wellbeing in Te Tauihu, the most useful economic statistics relate to regional GDP and the various measures that can be derived from it (regional GDP per capita, productivity).

Population Statistics

Statistics New Zealand's population statistics are largely derived ultimately from census data, but draw together information from a number of other sources as well to present a picture of the demographic composition of the New Zealand population. This information is useful in monitoring outcomes at the regional level in two ways. Firstly – and most importantly – population figures serve as the denominator for many other outcomes. In order to know the risk of criminal victimisation in Te Tauihu it is necessary to know, not only how many victimisations there were, but also the number of people in Te Tauihu. In this sense, population statistics are fundamental to any attempt to measure wellbeing outcomes.

Beyond serving as the denominator when calculating rates for Te Tauihu, population statistics also include life tables which provide the basic information from which mean life expectancy is calculated. Since life expectancy is one of the fundamental statistical measures of population health, this represents an important resource for measuring health outcomes.

Environmental Reporting

Although Statistics New Zealand publishes some environmental indicators on its website and updates the System of Environmental Economic Accounting (SEEA), most of the core data on

environmental outcomes is not collected by Statistics New Zealand. In fact, environmental outcome measures are collected by a wide range of different organisations – some private and some public – and vary much more in terms of timeliness, scope, and methodology than is the case for economic and social data. While this partly reflects the fact that environmental outcomes are multi-dimensional in nature (i.e. it is meaningless to develop a single measure encompassing fresh water quality, carbon dioxide emissions, and soil quality), it also reflects the lack of a widely shared over-arching framework for measuring environmental outcomes (Smith, 2018a).

The main sources of data for environmental indicators in New Zealand are the Ministry for the Environment (MfE) data service and the LAWA (Land, Air, Water, Aotearoa) website which presents environmental information drawn from a range of sources including MfE, the Cawthron Institute, Massey University, and New Zealand's regional councils. While both sources have the potential to provide information on environmental outcomes, both also have limits. The MfE data service has a list of datasets that can be downloaded. All of these will require some processing to convert into meaningful regional indicators. Also, the existing datasets vary in terms of timeframe and coverage, and there is little guidance to the cycle for updating datasets with new information.

The LAWA website has information at the regional level on a number of important environmental outcomes. However, there is no way to download data tables from the LAWA website meaning that obtaining regional data is potentially a laborious exercise in copying from fact sheets by hand.

Administrative data and the Integrated Data Infrastructure (IDI)

The IDI is a linked research dataset managed by Statistics New Zealand that brings together unit record information from a wide range of different government agencies. The IDI spine, which serves to link individuals in different datasets, is based on a combination of census data, information from the register of births, deaths, and marriages, and visa data on migration. This is used to link information from a wide range of different central government databases including the ministries of Heath, Social Development, Education, IRD, Oranga Tamariki, and Justice.

A key strength of the IDI is that – like the census – it covers all New Zealanders. In principal, every New Zealander who accesses a government service will leave a record of that interaction in the IDI if the service is linked to one of the IDI databases. This means that the IDI has strong potential to provide information at a regional level. Because it is possible to link different databases in the IDI, even if one data source lacks information on which regional a person lives in, it is likely that this information can be identified from another data source. This ability to compare information between data sources is also a strength of the IDI with respect to things such as ethnic breakdowns.

The wide range of government services covered by the IDI is another strength. Because it covers such a wide range of areas that map closely onto wellbeing outcomes – including education, health, justice, and income – the IDI has the potential to provide information on a range of different aspects of wellbeing and to do so in a timely manner. There are, however, two important limitations to the IDI. The first is related to the nature of the information in the IDI. By and large, most IDI information relates to what government does to a person (i.e. services provided) not the outcomes for the person. The use of IDI data to measure wellbeing outcomes therefore depends crucially on the ability to establish empirically that a particular IDI measure is a good proxy for the underlying wellbeing outcome of interest.

The second main limitation to the use of IDI data to measure wellbeing outcomes at the regional level follows from the first. Significant work is required to create viable outcome measures from IDI data. Currently this work has not been done and, even if an indicator is identified, a process would need to be established around the calculation and release of the measure each time the IDI is updated.

Local Government

Local government bodies have direct responsibility under the Local Government Act (amended in

2019) for promoting economic, social, cultural, and environmental wellbeing outcomes in their area. This gives local governments a direct interest in making best use of their own data to evaluate wellbeing outcomes. In addition, local bodies are directly responsible for much of New Zealand's system of environmental monitoring. For both these reasons, there is considerable potential to make use of local government data to measure wellbeing outcomes in Te Tauihu.

However, there are also significant limitations to local government data. With the exception of the larger cities, most New Zealand local government bodies are relatively small and have limited resources to commit to measurement. The focus of any investment in measurement, therefore, tends to be on operational issues and accounting (i.e. inputs and outputs rather than outcomes). In addition, different local bodies may collect different information making comparisons between different parts of New Zealand difficult.

Existing data

In addition to the various sources of raw data, there are two datasets available specifically intended for monitoring wellbeing at the regional level. These are the SOLGM wellbeing indicators compiled by the Society of Local Government Managers and Infometrics wellbeing dashboard. Both initiatives are similar in that they bring together existing data from a range of different existing sources (mostly those described in this chapter) to present an accessible tool for looking at wellbeing at a regional or local level.

Because the two initiatives draw from similar data sources they have many similar strengths and weaknesses. The main limitation both share is that outlined elsewhere in this chapter. Simply put, the available data is not very good. As a result, both dashboards are relatively strong in areas where the data is better – such as the economy – and weaker elsewhere. In particular, because neither initiative makes use of the available survey data the dashboards are particularly weak with respect to non-market outcomes.

In fact, both products are potentially useful as sources of data for populating some aspects of the Te Tauihu wellbeing framework. However, it is important to keep in mind exactly what each offer. They do not serve to fill gaps in the data available in New Zealand, since this is the same dataset that they draw on. Nor do they make effective use of the available survey data. However, they do offer the possibility of doing a significant proportion of the basic data collection and manipulation required to prepare a range of indicators that are available from the Census, economic and environmental statistics, and local government data. From this perspective either would be a highly useful, but incomplete, contribution to monitoring the Te Tauihu Intergenerational Strategy.

Ratepayer survey

One possibility for filling some of the gaps in wellbeing measures at the regional level are local body ratepayer surveys. All local bodies in New Zealand carry out a ratepayer survey on an annual basis. These surveys are usually structured around satisfaction with services provided by local government and are not seen as sources of data for understanding outcomes more generally. However, there is significant scope to use ratepayer surveys to fill key gaps in the portfolio of wellbeing statistics available at the local level. The opportunities associated with this are discussed in greater depth in section 5 of this report (next steps).

Proposed Measures

This section of the report identifies a proposed set of outcome measures to monitor the Te Tauihu wellbeing framework. Each dimension of the outcome framework is addressed in turn. For each outcome area a short discussion outlines the scope of the wellbeing outcome, including the range of different sub-dimensions required to adequately capture the outcome. Finally, two sets of indicators are provided. The first set lists measures that are currently available and which can be reported on immediately. For each of these there is a description of the indicator, the data source, and the rationale for its inclusion. The second set of indicators identifies measures for which there is not currently a data source able to provide information on Te Tauihu. For this set of

indicators there is a description of the proposed measure, a discussion of potential options for obtaining the data, and the rationale for its inclusion.

Most indicators relate to average outcomes for people in Te Tauihu. However, the distribution of outcomes is also important. For this reason, several indicators are included that capture information on the distribution of outcomes. However, where the dataset supports it, the first best solution is to look at the distribution of outcomes for each indicator. Box 3 below discusses how the distribution of wellbeing outcomes should be reported where adequate data is available.

Box 3. Measuring distribution and inequality

Measuring wellbeing requires looking at the distribution of outcomes both between and within the different domains of wellbeing as well as the average level of outcomes. While preferences over the importance attached to issues of distribution might reasonably vary, from the point of view of describing people's wellbeing, a situation where outcomes are distributed evenly across the population clearly differs materially from a situation where a small proportion of the population has very good outcomes in one of the wellbeing domains and the rest of the population has poorer outcomes by comparison. It is therefore important that the Te Tauihu Intergenerational Strategy considers not just average outcomes for the people of Te Tauihu, but also how those outcomes are distributed across the population.

In describing the distribution of wellbeing, there is a wide range of different ways that we could approach measurement. However, three core concepts are proposed here that it would be desirable for indicators of wellbeing to capture. These are:

- How unequal is the distribution of outcomes overall (a measure of dispersion)?

- Which groups in the population face disadvantage (analysis by population group)?

- What proportion of the population faces severe disadvantage (hardship)?

Each of these three aspects of distribution would ideally be considered for each domain of wellbeing in the Te Tauihu wellbeing framework.

In addition, the joint distribution of outcomes across different domains of wellbeing matters. It is important to know whether disadvantage in Te Tauihu is concentrated among a few people who experience poor outcomes in multiple domains (eg, poor health, low incomes and poor safety outcomes) or whether people who experience poor outcomes in one area are different from those who experience poor outcomes in another area. This involves looking at multiple disadvantages and the joint distribution of wellbeing outcomes (Fitoussi et al, 2009).

The measurement challenge associated with measuring the distribution of outcomes is twofold. First, it requires data sources that are able to be disaggregated. While this is not generally an issue for data at the national level it is a significant challenge at the regional level. This may require the use of different data sources or even different indicators of the same outcome to measure average outcomes /direction of change in outcomes and to measure the distribution of outcomes.

The second challenge associated with measuring distribution is managing the number of indicators. While monitoring the level and direction of change in an indicator requires only a single measure monitored over time, adequately capturing distribution implies multiple measures associated with every indicator (ie, level, dispersal, population groups and hardship). This creates challenges with respect to parsimony.

In addition to indicators of the average level of wellbeing outcomes and of their distribution, it is also important to include measures of the sustainability of wellbeing outcomes over time and across generations. This means including indicators for each dimension of wellbeing that capture information about the level of the human, produced, natural, and social capital stocks available to Te Tauihu or the levels of reinvestment in those stocks. In some cases – such as the environment domain – the outcome measures are in themselves measures of a capital stock. In the case of the environment the size of the natural capital stock is also the best measure of how the environment impacts on current wellbeing. In other domains, however, there may be separate indicators of

current wellbeing and of intergenerational outcomes.

Environment

Our relationship with the natural world is healthy.

The environment as a wellbeing outcome captures the impact of the natural world on peoples' wellbeing. This includes both the direct effect of environmental quality on wellbeing now and the importance of the natural environment for sustaining wellbeing into the future. Because the natural environment itself is multi-dimensional, it is not possible to collapse this outcome into a single focus for measurement. Carbon dioxide emissions, for example, tell us little in themselves about freshwater quality.

Four key sub-dimensions are proposed to monitor the environment as a compromise between the multi-dimensional nature of the natural environment and the need for parsimony in indicator selection. These are land, air, water, and atmosphere. This builds on the LAWA (Land Air Water Aotearoa) framework and the six dimensions of New Zealand's Environmental Reporting framework (Ministry for the Environment and Statistics New Zealand, 2016). Four headline indicators are proposed. Three of these are currently available from existing data, while two are currently unavailable.

Table 1. Available Indicators - environment

Indicator	Rationale	Data Source
Mean PM10 concentration in micrograms per cubic meter	Headline measure of air quality used in MfE/Statistics New Zealand environmental reporting.	MfE data service. Some calculation required.
River water quality: macroinvertebrate community index	Potential headline measure of water quality used in MfE/Statistics New Zealand environmental reporting.	MfE data service. Some calculation required.
CO2 emissions per capita	Headline measure of atmospheric outcomes relating to climate change and an indicator of the sustainability of outcomes.	Infometrics

Currently data for the air and water quality indicators is available via the MfE data service, but results are not published at a regional level. Doing so, however, would be relatively straight forward.

Table 2. Indicators to be developed - environment

Indicator	Rationale	Data Source
Biodiversity	A headline measure of the land dimension is required. A measure of indigenous	None currently available.

species abundance would be appropriate.	

Leadership

Our decision-making is collaborative, courageous, inclusive, respectful and acts for the long term. We uphold the values and rights of the people and taonga of our region.

As a wellbeing outcome, leadership is concerned with the quality of governance, procedural fairness, and peoples' ability to participate in decisions that affect them and to be treated with dignity and respect. It is important to wellbeing because these factors are a core element of a person being able to exercise control over their own life. Poor or arbitrary government disempowers people and restricts their choices. However, leadership is also intrinsically valuable. People appreciate procedural fairness in its own right and are less satisfied with their lives where governance is more centralised and less democratic (Frey and Stutzer, 2000).

In measuring leadership in Te Tauihu two broad sub-dimensions are identified. The first of these relates to confidence in the leadership of Te Tauihu. This can be expressed either through peoples' subjective opinions via measures of trust or revealed by their behaviour such as voting and other forms of engagement with the institutions of governance. The second aspect of trust is related to measures of procedural fairness. A key focus here for Te Tauihu is the degree to which decision-making processes adhere to the principles of the Treaty of Waitangi. Conceptually, measures of corruption would also sit here.

Table 3. Available Indicators - leadership

Indicator	Rationale	Data Source
Voter turnout rate in last local body elections	Headline indicator of confidence in democratic institutions	DIA, local body election statistics, 2016
Mean trust in health, education, and policy institutions	Headline indicator of trust in service delivery institutions	Statistics New Zealand Wellbeing statistics 2018
Mean generalised trust	Indicator of the level of social capital in the community.	Statistics New Zealand Wellbeing statistics 2018

Data is not currently available for a number of desired indicators. Table 4 below proposes measures that it would be desirable to identify data sources for.

Table 4. Indicators to be developed - leadership

Indicator	Rationale	Data Source
Mean expectation of voice in decision-making	Gives a direct measure of resident views on leadership from a	Not available but standard questions exist (OECD, 2017b, qn C5)

	procedural perspective.	
Gender gap and Māori/non-Māori gap in institutional trust.	Measures of distribution of confidence in leadership	Could be calculate from Statistics New Zealand NZGSS questions but sample size is currently too small.

Economy

Our resilient economy allows our people, places, communities, and businesses to thrive.

The economy is important to wellbeing not as an entity in its own right – the economy is not a thing that can experience wellbeing – but because jobs and incomes are fundamental to the wellbeing of people. As a part of the Te Tauihu wellbeing framework the economy captures the contribution of jobs, incomes, and the material standard of living to peoples wellbeing. A lack of income, and the consequent impact of this on peoples' material standard of living and consumption obviously has a negative impact on wellbeing (Jia and Smith, 2016; Boarini et al, 2012; Brown, Woolf, and Smith, 2012). Being excluded from the labour market is obviously a major cause of low incomes. However, unemployment also has major non-pecuniary impacts on peoples' wellbeing (Boarini et al, 2012).

Two main dimensions need to be measured to capture the degree to which Te Tauihu's economy allows the people, places, communities, and businesses of the region to thrive. The first dimension relates to incomes. This underpins the ability of people to maintain an adequate standard of living as well as being essential to the viability of businesses and the ability of places and communities to support themselves and provide adequate services. Incomes can be measured both at the aggregate level and from the perspective of the return to working (earnings). The latter perspective is an important complement to measures of overall income as it is obviously better to earn the same income from a smaller quantity of work (hence leaving more time for other activities).

The second dimension of the economy concerns access to work. While not everyone in society needs to or necessarily wants to work (e.g. the retired, caregivers), being excluded from work potentially limits income as well as having a potential direct negative effect on wellbeing through social connection and self-esteem.

Table 5. Available Indicators - economy

Indicator	Rationale	Data Source
Regional real GDP per capita	Headline indicator of regional incomes	Statistics New Zealand infoshare
Real median hourly earnings	Headline indicator of the return to work	Statistics New Zealand dot.stat incomes
Employment rate	Headline indicator of access to employment	Statistics New Zealand inforshare HLFS Ann Dec
Unemployment rate	Supplementary indicator of access to employment	Statistics New Zealand inforshare HLFS Ann Dec

Indicator	Rationale	Data Source
Median hourly earnings as a percentage of mean hourly earnings	Headline indicator of distribution in incomes	Statistics New Zealand dot.stat incomes
Female median hourly earnings as a percentage of male median hourly earnings	Supplementary indicator of distribution in incomes	Statistics New Zealand dot.stat incomes
Māori median hourly earnings as a percentage of non- Māori median hourly earnings	Supplementary indicator of distribution in incomes	Statistics New Zealand dot.stat incomes

Knowledge

Our people are knowledgeable, curious, and creative.

The knowledge domain is concerned with peoples' education, skills, and knowhow. Knowledge is fundamental to wellbeing both because it is an important driver of other outcomes such as health, a job, or an adequate income, but also in its own right. If wellbeing is considered as the ability to live the kind of life a person has reason to value, then knowledge is essential in that it provides a link between ends and means. If a person lacks the information to make informed choices about how to achieve their goals then they lack the ability to choose their life.

Ideally measures of knowledge would capture both formal qualifications and the skills, abilities, and attitudes that are accumulated over the course of a person's life. In practice, however, measures of the former are much easier to obtain than measures of the latter. The main focus for measurement is therefore on educational participation and attainment. However, broader measures of skills would be valuable if a data source could be identified.

Table 7. Available Indicators - knowledge

Indicator	Rationale	Data Source
School leavers with NCEA level 2 and above	Headline measure of the flow of formal educational attainment	Education counts: indicators - region
School entrants with prior ECE	Headline measure of school readiness	Education counts: statistics - ECE (Dec year)
Students in tertiary education as a proportion of the population	Headline measure of flow of formal educational attainment	Education counts: statistics - ECE (2017)

Labour force participation rate	Headline measure of the size of Te Tauihu's human capital stock	Statistics New Zealand inforshare HLFS
Proportion of 15 to 24 year-olds Not in Education, Employment, or Training (NEET)	Supplementary measure of young people not developing or using human capital	Statistics New Zealand infoshare
Male NCEA level 2 attainment rate as a percentage of female	Indicator of the distribution of knowledge outcomes	Statistics New Zealand infoshare
Māori NCEA level 2 attainment rate as a percentage of non-Māori.	Indicator of the distribution of knowledge outcomes	Statistics New Zealand infoshare

Places

Our people can access affordable, and quality places to live. Our shared spaces are places where people want to be.

The built environment in which we live shapes every aspect of our lives. It is where we spend the majority of our time and – unlike the natural environment – is largely created by people. Within the Te Tauihu wellbeing framework the places dimension focuses on those aspects of the built environment important to peoples' wellbeing. Two important aspects of the built environment are singled out. The first of these relates to places to live, while the second focuses on shared spaces[4].

To adequately measure places to live it will be necessary to capture the availability/affordability of housing on the one hand, and the quality of housing on the other hand. Measuring both of these dimensions independently is important as they are not necessarily strongly correlated. It is possible, for example, to have an inadequate supply of housing that is nonetheless of high quality.

Public places are important and have a large impact on the way in which we live. Urban planning wore generally is strongly concerned with quality of life and how the characteristics of a place affect how people interact. It is more difficult to reduce all the different aspects of shared spaces to a few measurement dimensions than is the case for where we live, but there is considerable scope to use experienced wellbeing measures to inform this outcome if a data source can be identified (e.g. MacKerron and Mourato, 2013).

Table 9. Available Indicators - places

Indicator	Rationale	Data Source
Percentage of	Headline indicator of	MBIE, Housing Affordability measures,

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[4] Clearly many of the places where we live are also shared spaces, so there is some overlap between the two categories.

households spending more than 30% of income on housing	housing affordability	derived
Percentage of the population reporting that their dwelling is cold sometimes or most of the time	Headline indicator of housing quality	Statistics New Zealand Wellbeing statistics 2018

There are important gaps relating to housing outcomes and measures of shared spaces. A possible indicator of household crowding is identified below and a placeholder is identified for shared spaces.

Table 10. Indicators to be developed - places

Indicator	Rationale	Data Source
Household crowding	An important dimension of housing not captured by existing indicators.	Potentially available from Census data and possibly from Infometrics. Statistics New Zealand measure not updated since 2011.
Shared spaces	The quality of shared spaces is a key aspect of place.	Not available from existing data sources and not clear what the measure might ne.

Community

Our people and communities are welcoming, healthy, and safe. Our people are connected across generations, cultures, and distance.

Health, safety, and connection are fundamental to almost all approaches to measuring wellbeing. The *World Happiness Report* (Helliwell et al, 2018) identifies health and social support as two of the "big six" drivers of life satisfaction, while victimisation has been shown to have a negative bivariate correlation with life satisfaction in New Zealand (Brown, Woolf, and Smith, 2013), and forms a core part of Indicators Aotearoa New Zealand's outcomes framework as well as of the Treasury's Living Standards Framework.

Health, safety, and connection are distinct concepts, implying that the community domain of the wellbeing framework will have more than one aspect to it for measurement purposes. Health focuses on both the length and quality of peoples' lives. Ideally measurement would capture both these dimensions, but in practice they are strongly correlated at the aggregate level and a summary measure of health may be preferred both for reason of availability and parsimony.

Safety can include both the impact of victimisation as well as risk of injury from other sources. However, the impact of the latter will – to some degree – be reflected in health outcomes so criminal victimisation becomes the main focus. Ideally measurement would capture both actual risk of victimisation and perceived safety separately as both affect peoples' wellbeing and the two are not strongly correlated with each other.

Social connections capture connections between people, including positive social contact and the ability to engage with others. While social interactions and connection are a complex topic, the

choice of potential measures is limited by the relatively restricted range of available data.

Table 11. Available Indicators - community

Indicator	Rationale	Data Source
Life expectancy	Headline indicator of health status	Statistics New Zealand Subnational period life tables
Gender gap in life expectancy	Indicator of distribution of health outcomes	Statistics New Zealand Subnational period life tables
Maori/non-Maori gap in life expectancy	Indicator of distribution of health outcomes	Statistics New Zealand Subnational period life tables
Victimisations per 100,000 people (violent and burglaries)	Headline indicator of safety	Police data and statistics: victimisation-time-and-place and Statistics New Zealand NZ.stat population estimates and projections

Despite the fact that there are a fairly wide range of measures available at the national level on community, there are some gaps. Two possible additional indicators are listed below.

Table 12. Indicators to be developed - community

Indicator	Rationale	Data Source
Maori/non-Maori gap and gender gap in victimisation rate.	Distributional measures of victimisation are desirable.	May be obtainable from police data but would require some work to produce.
Mean loneliness score.	A potential headline measure of connectedness.	Could be produced from Statistics New Zealand Wellbeing statistics 2018

Identity

Our people are proud of their individual and shared identity and feel a strong sense of belonging. We treat each other with kindness and respect.

The identity dimension of the Te Tauihu wellbeing framework focuses on peoples' sense of who they are, both personally, in terms of connection to Te Tauihu, and in terms of how they relate to others. Two key themes are at the core of identity. The first of these relates to belonging, and the ability of people to feel connect to Te Tauihu and welcome there. This is reflected both in the specific reference to belonging in the outcome statement and in the reference to how people treat each other.

The second theme is that of individual and shared identity. This captures the intangible and cultural factors that are distinctive to Te Tauihu and the people who live there. The distinction between identity and belonging is an important one, as it is possible to do well in one without

necessarily doing well in the other. A strongly homogenous society, for example, might achieve belonging at the expense of allowing people to express their individual or cultural identity.

The Ministry of Social Development's *Social Report* (Ministry of Social Development, 2007) presents a useful way of framing these issues. It captures both belonging and identity, and brings in a third element: taonga. The taonga dimension is reflected in the Social Report by Te Reo Māori and reflects the fact that both belonging and identity rely on access to shared cultural resources.

Table 13. Available Indicators - Identity

Indicator	Rationale	Data Source
Proportion of the population reporting it easy or very easy to express their identity	Best available indicator for individual and shared identity	Statistics New Zealand Wellbeing statistics 2018
Proportion of the Te Tauihu population speaking Te Reo	Indicator of shared identity and belonging	Derived from Census data
Proportion of the Te Tauihu Māori population speaking Te Reo	Indicator of Māori identity and of the intergenerational sustainability of Te Reo Māori.	Derived from Census data

Identity is a relatively new area for statistics and, despite recent developments such as the Te Kupenga survey in 2013, there are still significant gaps at the national level. Table 14 below identifies additional areas where indicators are desirable.

Table 14. Indicators to be developed - Identity

Indicator	Rationale	Data Source
Māori/non- Māori gap in the proportion of the population reporting it easy or very easy to express identity	Indicator of the distribution of identity related outcomes	Question is in the NZGSS but distribution not possible at the regional level due to sample size.
Proportion of the population reporting experience of discrimination in the last 12 months	Indicator of the distribution of identity related outcomes	Question is in the NZGSS but distribution not possible at the regional level due to sample size.

Overall wellbeing

There is no specific outcome domain in the Te Tauihu wellbeing framework that corresponds to overall wellbeing. Nonetheless, from a measurement perspective it is useful to include measures

of peoples' subjective evaluation of their overall wellbeing as a complement to the domain indicators. There are two reasons for this. The first, and most important, is that subjective measures of overall wellbeing provide a useful complement to the picture provided by the domain indicators. Although the domains were developed on the basis of extensive consultation, it is not possible for any wellbeing framework to cover all of the outcomes that matter to every person. Measures of peoples' subjective wellbeing provide a counterpoint to the picture from the domains that can pick up if some outcome not captured explicitly within the outcome domains is deteriorating (OECD, 2013a).

The second reason for incorporating measures of peoples' subjective wellbeing into the measurement framework for Te Tauihu is that, if the measures are available, they are useful in bridging the gap between outcome indicators and practical decision-making. If data on subjective wellbeing is collected for Te Tauihu it can be used to estimate the value of different wellbeing outcomes and services for the purposes of cost-benefit analysis (OECD, 2013a) and to better understand how the characteristics of shared spaces and the environment impact on wellbeing (MacKerron and Mouato, 2013).

Table 13. Available Indicators - Identity

Indicator	Rationale	Data Source
Mean life satisfaction score	Standard headline indicator of subjective wellbeing.	Statistics New Zealand Wellbeing statistics 2018
Gender gap and Māori/non-Māori gap in mean life satisfaction	Captures distribution in overall wellbeing.	Derived from Census data
Mean sense of purpose in life	Complementary indicator of overall wellbeing.	Derived from Census data
Proportion of day with net positive affect.	Affect (experienced wellbeing) measures can be used to link place and activity to wellbeing in a way that is impossible for life satisfaction measures.	Currently not available. Could be collected via mobile app.

5 NEXT STEPS

Developing a wellbeing framework and identifying indicators for it are a means to improving outcomes in Te Tauihu, not an end in themselves. They are valuable only to the degree that they help achieve better outcomes for the region. What is done with the wellbeing framework, and with the indicators of wellbeing is therefore fundamental to the success of the Te Tauihu Intergenerational Strategy. For this reason, the next steps that are taken after the Strategy is published matter. This chapter focuses on these next steps. There are two key areas where further decisions matter. These relate to reporting on wellbeing outcomes and filling data gaps.

Reporting

For wellbeing indicators to matter they need to be reported publicly on a consistent and timely basis. Public reporting is needed for the indicators to fill their purpose in supporting accountability and in communicating to the public. If the indicators are inaccessible or if they require substantial effort to find, then the resource invested in producing them is largely wasted. Beyond accessibility, the process for releasing and updating the indictors needs to be trusted. If there is significant doubt about the credibility of the indicators or the institution tasked with reporting them, then they are unlikely to significantly affect public discourse.

In addition to the credibility of reporting, clarity is also important. While some stakeholders will be technically skilled and able to draw their own conclusions from the data, much of the value of reporting on wellbeing relies on engagement with the wider public or with decision-makers who may not themselves be technical specialists. Even the relatively limited set of indicators proposed here to measure wellbeing in Te Tauihu represent a lot of data and could be presented in a near-infinite number of different ways. For this reason it is important that the indicators are presented clearly and that the presentation assists in highlighting important trends rather than simply presenting a mass of data.

While the precise details of the reporting arrangements are beyond the scope of this report, some general points can be made regarding the information that needs to be presented and the institutional arrangements for producing, updating, and reporting the indicators.

Presentation of the indicators

The reporting arrangements for the indicators will need to highlight four key aspects wellbeing. These are the overall state of wellbeing in Te Tauihu, the distribution of wellbeing in Te Tauihu, whether wellbeing is improving in Te Tauihu, and the intergenerational picture for Te Tauihu. Figures 5 to 8 below present one approach to summarising the relevant data to provide a coherent overall picture of wellbeing in Te Tauihu. Because the data used for figures 5 to 8 is not complete in that a number of indicators are missing, and because of an in-depth analysis of the available data is beyond the scope of this report, the descriptive picture presented here should only be regarded as illustrative. Nonetheless, the picture presented here is based on actual data and is accurate within limits. One key reason for presenting the available information in this report is that it provides a strong visual picture of the major data gaps.

Figures 5, 6, and 8 all use a similar approach to presenting the wellbeing indicators. In each case the indicators are normalised so that the New Zealand mean has a value of 0 (the dotted circle in the picture) and the values for Te Tauihu (the 'spokes' of the wheel) are given as standard deviations above or below the New Zealand mean. This gives a sense of how far the Te Tauihu region is from the New Zealand norm and is useful in identifying areas of relative strength and areas where there is plausible room for improvement. In all cases the normalisation of the indicator also involved adjusting the indicator so that a higher value indicates higher wellbeing and a lower value indicates lower wellbeing (i.e. a higher value for GDP indicates higher GDP, but a higher value for unemployment indicates less unemployment).

Figure 5 below presents a picture of wellbeing in Te Tauihu across the seven outcome areas

identified in the Te Tauihu wellbeing framework and highlights how well the region is doing compared to New Zealand as a whole. This provides a basic summary picture of the wellbeing outcomes that can be taken in at a glance and highlights areas of relative strength and weakness.

Figure 5. Wellbeing in Te Tauihu
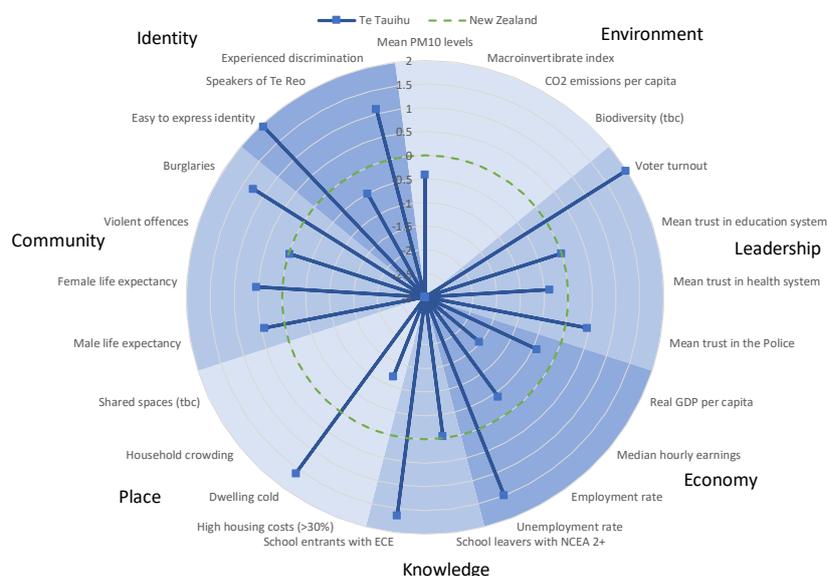
An examination of figure 5 reveals several main points. First, it highlights Te Tauihu's areas of relative strength which include community, identity, and leadership. In all of these wellbeing domains the majority of indicators are at or above the national average. In contrast, the region performs less well with respect to the economy and place. Economic outcomes – with the exception of unemployment – lag well below the national average. With respect to place, adequate housing quality is offset by a shortage of supply resulting in exceptionally high housing costs compared to the rest of New Zealand.

The most striking point to take from figure 5, however, is not the region's performance in different wellbeing domains, but the gaps in measurement. While the available data is relatively good with respect to the community, economy, and knowledge domains, it is less comprehensive elsewhere. Some information is available for identity, place, and leadership, but there are important gaps with respect to some aspects of these dimensions. However, the lack of adequate information with respect to the environment is stark.

Any approach to measuring wellbeing needs to consider the distribution of outcomes as well as the average level. The same level of average incomes for a region will have a very different impact on the wellbeing of the people living there depending on whether it is concentrated among a few very high-income earners or spread more equally. However, the analysis of distribution places much higher demands on the data than simply reporting averages. The outcomes in figure 5 are, in many cases, already based on small sample sizes. As a result, the number of indicators for which it is possible to report measures of distribution is much lower than for average wellbeing. Figure 6 below is similar to figure 5 in conception but highlights how Te Tauihu performs relative to the rest of New Zealand in terms of the distribution of outcomes.

At a substantive level, the scarce available information on the distribution of outcomes in Te Tauihu highlights two points. First, the gap between Māori and non- Māori outcomes is generally smaller in Te Tauihu than is the case for the rest of New Zealand. This is reflected both in market outcomes (earnings) and non-market outcomes (health). However, this Te Tauihu is also characterised by an unusually high level of economic inequality.

*Figure 6. The distribution of outcomes in Te Tauihu*
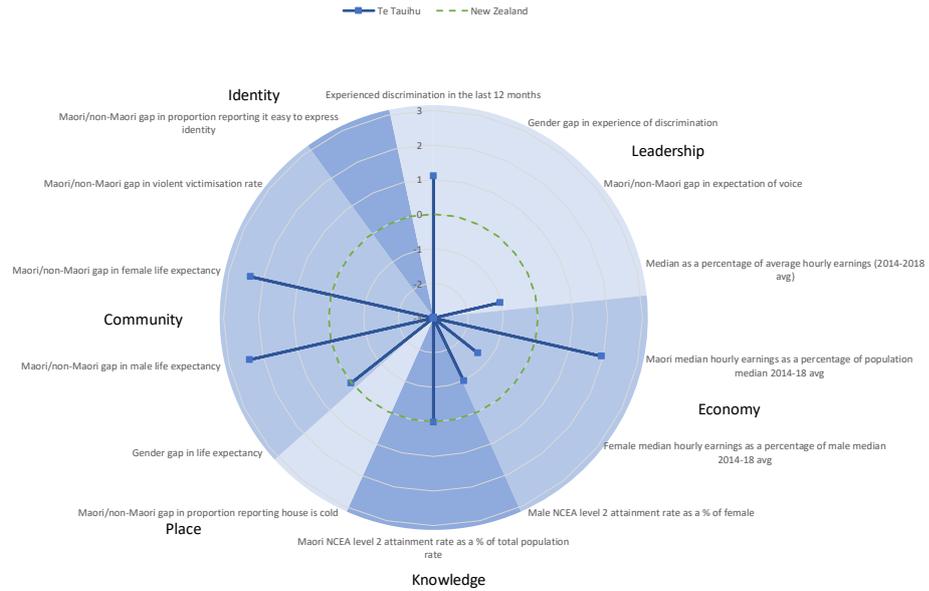
Figure 6 highlights that data limitations have a much stronger impact on the ability to look at the distribution of outcomes than they do average outcomes. Measures of distribution are available for only four of the seven domains in the Te Tauihu wellbeing framework. Environment, leadership, and place are completely lacking measures of the distribution of outcomes.

While figures 5 and 6 present a static picture of how Te Tauihu performs compared to the rest of New Zealand, figure 7 shows a different way of presenting the data. The focus in figure 7 is on trends over time in different indicators. Two indicators – real GDP per capita and the percentage of households with high accommodation costs – are used as an illustration. For each indicator the left-hand chart shows actual outcomes for New Zealand, Nelson, Tasman, and Marlborough between 2014 and 2016. The right-hand chart shows the outcomes indexed so that their value in 2014 is set to 1. This highlights the rate of change in the indicator for each region. For example, while real GDP per capita is lower in Nelson/Tasman than in New Zealand as a whole (left-hand chart), it has been rising there faster than is the case for New Zealand overall (right-hand chart).

Figure 7. Change in wellbeing outcomes
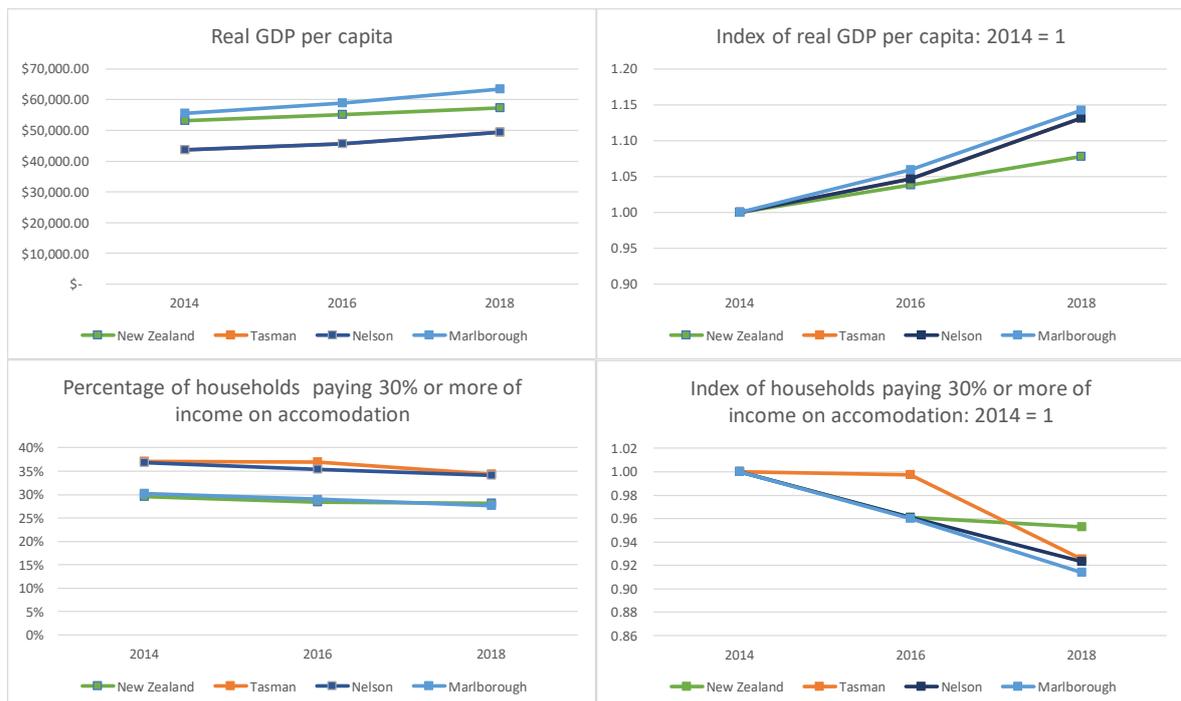
The purpose for including figure 7 here is to highlight the need for any dashboard to present information at the level of individual indicators as well as at the summary level used in figures 5, 6, and 8. It would be possible to show changes over time in the indicators using a similar format to figures 5, 6, and 8, simply by setting the reference value (dotted circle) to reflect the situation of Te Tauihu in a reference year and the current values (the 'spokes' of the wheel) to reflect outcomes for Te Tauihu normalised relative to this reference.

Figure 8, below, is included mainly to highlight the scarcity of information on intergenerational outcomes and sustainability. The data gaps here are so great that it is difficult to generalise from the available indicators about the overall picture. Nonetheless, including the picture is valuable for precisely this reason. The temptation not to show data gaps and only to report where adequate measures are currently available is significant, but this approach would be a mistake. Reporting an "empty space" where data is not yet available serves to both to create pressure to collect relevant data by keeping the gap in the public eye and provides users with a clearer idea of how comprehensive the picture provided by the available indicators actually is.

Figure 8. Intergenerational outcomes
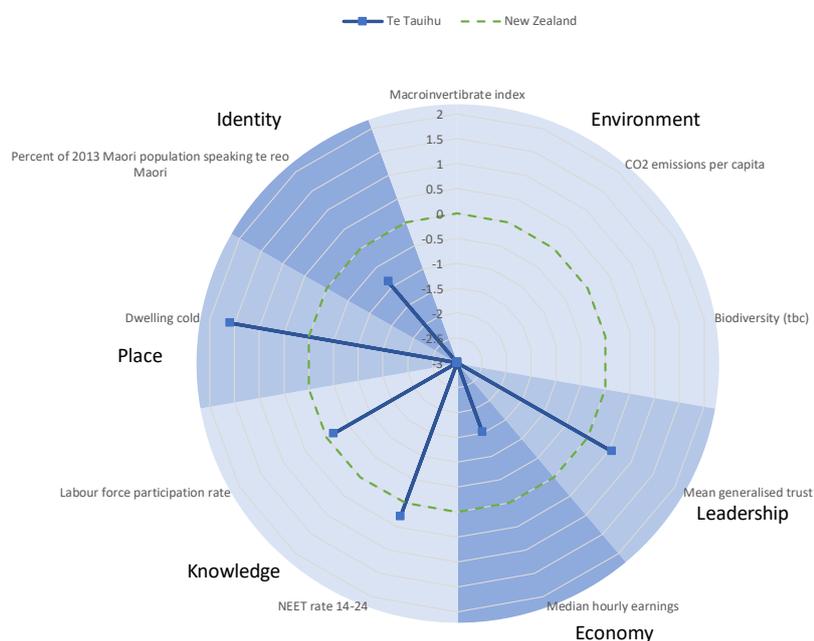
In addition to presenting the indicators graphically, there will also be a need to provide a commentary on the indicators. The aim of this should be to tell the story provided by the indicators and highlight key points. This need not be very extensive but is essential. The indicators selected to measure wellbeing in Te Tauihu are just that – indicators. They are valid to the degree that they summarise more complex underlying trends and have the potential to be misleading if the underlying assumptions on which they were selected have changed. A core reason for writing a commentary on the indicators is that it provides an opportunity to identify any trends that might not be obvious from simply looking at the main indicators.

Data tables

Communicating information on the wellbeing of Te Tauihu through charts and a narrative is critical to the effectiveness of the indicators in supporting public accountability. However, although necessary, it is not sufficient. Alongside the narrative and charts it is essential that the underlying data is publicly available. One core purpose of publishing the indicators is to provide information that is then available for use by civil society groups, businesses, students, or other parts of the community. Downloadable tables of the data should be a core part of any publishing

strategy[5].

Institutional arrangements

Reporting on the Te Tauihu wellbeing framework requires a home. Someone needs to publish the indicators, produce any narrative accompanying the quantitative measures, manage the underlying database, lead work to fill data gaps, and replace indicators with better measures when necessary. Experience elsewhere suggests that the institution responsible for publishing the indicators and producing any narrative should be the same one that is responsible for managing the database (Smith, 2018a). This is because the indicators in any public report and the narrative need to reflect a more complex reality than can be captured through a relatively limited set of high-level measures. Only someone who is involved enough in the underlying data will be in the position to know when the picture provided by the headline indicators may be missing some important detail that affects the conclusions that should be drawn.

The institutional arrangements for publishing the indicators also need to reflect the need to build capability and understanding of the underlying data. This implies a regular publication schedule that goes beyond simply updating the indicators online. There needs to be a minimal publication including some narrative commentary each year. This both provides the basis for ensuring that the indicators receive some profile on a regular basis, but also make it possible to build a work programme for the person managing the indicators database that will build expertise over time. The potential resource implications of this can be managed if the scope of the regular publication is kept limited: the aim is to ensure ongoing engagement and capability building, not to absorb large amounts of resource through an elaborate publication.

Although there are potential synergies between managing reporting on the Te Tauihu wellbeing framework and reporting by the Marlborough, Nelson, and Tasman district councils – particularly in light of the recent changes to the Local Government Act – there are also advantages to embodying the responsibility for reporting in an independent institution. In the absence of strong potential candidate for independent reporting, a joint approach to managing the wellbeing framework between the councils of Te Tauihu would be appropriate. However, if an independent entity were available there would be strong gains to basing the responsibility for reporting here. This suggests two possible options for reporting arrangements. These are:

- A **joint approach to reporting** between the Marlborough, Nelson, and Tasman district councils. This would be based in one of the councils but supported by the other two. The database required to produce wellbeing indicators for any one council is essentially the same as that required to produce indicators for the other two, so there are large efficiency gains to centralisation. This option should be preferred if there is no independent institution capable of filling the roll.
- **Embed reporting in an independent institution** with responsibility for producing a Te Tauihu view of the wellbeing indicators and also meeting the reporting needs with respect to wellbeing of the Marlborough, Nelson, and Tasman district councils under the Local Government Act. An Institute of the Future: Te Ao Marama was proposed during consultation on the Te Tauihu Intergenerational Strategy. If such an Institute is developed it would be an appropriate home for the indicators.

Filling data gaps

Te Tauihu faces significant data gaps with respect to reporting on wellbeing outcomes. Filling these must be a key priority in the implementation of the Te Tauihu Intergenerational Strategy. Broadly speaking, there are four approaches to filling the data gaps. These are:

- Lobbying central government to improve official data collected by Statistics New Zealand

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[5] A good model here is Statistics New Zealand which publishes Excel tables accompanying all *Hot off the press* reports when they are released.

- Further analysis of existing data in the IDI to build synthetic measures of wellbeing outcomes
- Better use of existing data by coordinating within and between local government agencies
- Collecting new data at the local level.

Statistics New Zealand data

Many of the existing data gaps relate to wellbeing outcomes already measured at the national level through the NZGSS. Gaps remain at the regional level despite this because of the small sample size and low periodicity of this survey. Two changes to the NZGSS would go a long way to addressing the needs of Te Tauihu and other regions in New Zealand with respect to wellbeing measures.

First, if the NZGSS were conducted on an annual basis instead of every second year it would be possible to provide meaningful regional information by using a three year rolling average for reporting. This would boost the expected sample for Te Tauihu from about 250 respondents to about 780, which would allow for some limited distributional analysis. At the level of the Marlborough, Nelson, and Tasman district councils it would allow for a sample of about 250 respondents. This is enough for reporting headline averages at the district council level.

Directly increasing the NZGSS sample size to roughly the level of the Household Labour Force Survey (about 30,000 households) would have a similar, but slightly larger impact on the sample size at the regional level. If the sample size were increased and the survey moved to an annual basis, the impact would be transformative in terms of the ability to monitor wellbeing outcomes at the regional level. Although these changes would have a significant cost, this could be partially offset by streamlining the NZGSS to remove low value questions (of which there are a number) and to refocus the survey on a narrower range of core wellbeing measures. There is some support for this across central government agencies and some scoping work has been done with respect to the case for such a change (Smith, 2018b).

Analysis of IDI data

As discussed in chapter 4, there is significant potential to develop outcome measures from administrative data in the IDI. Such an approach would have two elements. The first of these would involve a research programme to construct synthetic wellbeing outcome measures in the IDI by calibrating administrative data against wellbeing measures from the NZGSS. As discussed above, the survey samples are currently too small to allow for regional reporting, but they can be used to validate measures constructed from administrative data. The use of survey data for validation ensures that indicators constructed from administrative data – which primarily captures service use – reflect achieved wellbeing outcomes.

The second element of using IDI data would be to establish a process for regularly updating and publishing the synthetic indicators. This would require an agency with access to the IDI to update and re-run code in the IDI each year to output the relevant indicators.

While the research component of this approach would have some costs associated with it, these would only be one-off. Once the analysis was complete and synthetic indicators identified, the cost of updating the indicators annually would be low.

Existing data

Some data already exists within local government that could be better deployed to help fill data gaps. Although much of the information available to local government relates to inputs and outputs rather than outcomes, local government does hold significant information relating to the environment. In fact, local government is one of the main sources of information in New Zealand on environmental outcomes. It should be relatively straight-forward, therefore, to meet some of the most significant data gaps in the Te Tauihu wellbeing framework from data already held by the Marlborough, Nelson, and Tasman district councils.

Key steps here would be to carry out a stocktake of what information is available across local

agencies. Once this was completed it would be possible to identify relevant indicators and organise a process for regularly providing this information in a common format to the institution responsible for reporting against the Te Tauihu Intergenerational Strategy.

Collecting new data

Chapter 4 mentioned the possibility of using existing ratepayer surveys to fill gaps in outcome measures at a local level. This would be possible, but will require the development of a short form survey module that could be folded into a ratepayers' survey or form the basis of a low-cost standalone survey. Ideally such a tool would need to collect information on wellbeing outcomes in a way that was:

- *Flexible* so that it could be used in a regular monitoring survey, but also adapted to other contexts such as a small-scale evaluation of a community initiative
- *Statistically robust* and grounded in the best available science on the measurement of wellbeing
- *Comparable* with information on other places in New Zealand and on New Zealand as a whole
- *Complementary* to existing information available to agencies in Te Tauihu from other sources including its own data and the IDI
- *Connected* to information on place and activity;
- *Affordable* within the context of Te Tauihu;
- *Reflective* of the wellbeing outcomes and values that matter to the people of Te Tauihu.

This would involve developing a short multi-mode survey instrument that filled the main data gaps relating to wellbeing that cannot be covered from existing Statistics New Zealand IDI or survey data. The instrument would consist of a set of standard questions comparable to those used to collect national data in the NZGSS. These questions would be multi-mode in that they could be implemented in a number of different ways, including a regular rate-payer's survey, through an app for a mobile device or as part of service delivery.

The questions would cover most of the main data gaps at the regional level relating to wellbeing, including measures of:

- Peoples' subjective assessment of their overall wellbeing (life satisfaction)
- Interpersonal and potentially institutional trust
- Identity, belonging, and experienced discrimination
- Perceived environmental quality
- Perceived safety
- Housing quality

Standard measures for all of these outcomes exist and developing and testing a short survey instrument is relatively straight-forward. Once developed the instrument would be fully documented and could be used easily in a wide range of different contexts. Documentation would include not only the question instrument itself, but also instructions for use of the instrument in different contexts, information on the output dataset format, and a standard reporting template. This documentation would allow for the wellbeing survey instrument to be passed onto a potential data collector with relatively little specialist knowledge on the part of the commissioning agency and still allow a high confidence in the quality and comparability of the results to be retained.

BIBLIOGRAPHY

Arrow, K. J., Dasgupta, P., Goulder, L. H., Mumford, K. J., & Olsen, K. (2012). Sustainability and the measurement of wealth, *Environment and Development Economic, 17,* 317–353.

Benjamin, D. J., Heffetz, O., Kimball, M. S., & Szembrot, N. (2014). Beyond happiness and satisfaction: Toward well-being indices based on stated preference. *American Economic Review*, *104*(9), 2698–2735.

Boarini, R., Comola, M., Smith, C., Manchin, R., & De Keulenaer, F. (2012). What makes for a better life?: The determinants of subjective well-being in OECD countries – Evidence from the Gallup World Poll, *OECD Statistics Working Papers*, *2012*(3).

Boarini, R., & Smith, C. (2014). Whispering wellbeing in the ears of princes: Towards an integrated policy framework for better lives, *European Framework for Measuring Progress Deliverable, 11.1,* 135–146.

Brown, D., Woolf, J., & Smith, C. (2012). An empirical investigation into the determinants of life satisfaction in New Zealand, *New Zealand Economic Papers*, *46*(3), 239–251.

Delhey, J., & Kroll, C. (2013). A 'happiness test' for the new measures of national well-being: How much better than GDP are they? In J. Delhey & H. Brockmann (Eds.), *Human happiness and the pursuit of maximization* (pp. 191–210), Springer.

Fitoussi, J. P., Sen, A., & Stiglitz, J. (2009). *Report of the Commission on the Measurement of Economic Performance and Social Progress*, Paris.

Fleche, S., Smith, C., & Sorsa, P. (2012). Exploring determinants of subjective well-being in OECD countries, evidence from the World Values Survey, *OECD Statistics Directorate Working Paper No. 46.*

Fleischer, L., Smith, C., & Viac, C. (2016). A review of general social surveys, *OECD Statistics Directorate Working Paper No. 75.*

Fleurbaey, M., & Schwandt, H. (2015). Do people seek to maximize their subjective well-being?, *CEP Discussion Paper No. 1391*, London School of Economics.

Frey, B. S., & Stutzer, A. (2000). Happiness, economy and institutions. *The Economic Journal, 110(466),* 918-938.

Fujiwara, D. (2013). A general method for valuing non-market goods using wellbeing data: Three-stage wellbeing valuation", *CEP Discussion Paper No. 1233*.

Grimes, A., Oxley, L., & Tarrant, N. (2012). Does money buy me love? Testing alternative measures of national wellbeing, *Motu Working Paper No. 12_09*, Motu Economic and Public Policy Research.

Helliwell, J. F., Layard, R., & Sachs, J. (2018). *World happiness report 2018*, Sustainable Development Solutions Network, New York.

Integrated Reporting Council. (2013). *The International <IR> Framework*, http://integratedreporting.org/resource/international-ir-framework/

Jia, K., & Smith, C. (2016). Subjective wellbeing in New Zealand: Some recent evidence, *New Zealand Productivity Commission Research Paper RN2016/3.*

King, A., Huseynli, G., & MacGibbon, N., (2018), "Wellbeing frameworks for Treasury", *Living Standards Series: Discussion Paper 18/01,* New Zealand Treasury.

Layard, R. (2006). Happiness and public policy: A challenge to the profession, *The Economic Journal*, *116*.

MacKerron, G., and S. Mourato. (2013), "Happiness is greater in natural environments." *Global environmental change 23.5* 992-1000.

Ministry for the Environment & Statistics New Zealand. (2016). *Topics for environmental reporting*. Available from *www.mfe.govt.nz* and *www.stats.govt.nz*

Ministry of Social Development. (2003). *The social report 2003*, Wellington.

Ministry of Social Development. (2007). *The social report 2007*, Wellington.

O'Donnell, G., Deaton, A., Durand, M., Halpern, D., & Layard, R. (2014). *Wellbeing and policy*. Legatum Institute

OECD. (2011). *How's Life? Measuring well-being*, OECD Publishing, Paris.

OECD. (2013a). *Guidelines on measuring subjective well-being*, OECD Publishing, Paris.

OECD. (2015). *Measuring and assessing well-being in Israel*, OECD Publishing, Paris.

OECD. (2017a). *How's Life? 2017: Measuring well-being*, OECD Publishing, Paris.

OECD. (2017b). *Guidelines on measuring trust*, OECD Publishing, Paris.

OECD. (2017c). *Economic Survey of Slovenia*, OECD Publishing, Paris.

Pigou, A. (1929). *The economics of welfare*. MacMillan and Co.

Quality of Life Project. (2007). *Quality of life in twelve of New Zealand's cities 2007*. Available at http://www.qualityoflifeproject.govt.nz/report.htm

Sen, A. (1993). Capability and well-being, *The quality of life,* Oxford University Press, Oxford.

Smith, C. (2018a). *The Treasury Living Standards Framework: Monitoring Intergenerational Wellbeing*, Kotata Insight, Wellington

Smith, C. (2018b). *NZGSS User Needs: the wellbeing agenda and the IDI*, Kōtātā Insight, Wellington.

Treasury, (2018a), *Living Standards Framework*, Introducing the Dashboard, The Treasury, Wellington

Treasury, (2018b), *The Treasury approach to the Living Standards Framework*, The Treasury, Wellington

UNECE. (2014). *Conference of European Statisticians recommendations on measuring sustainable development*, United Nations, Geneva.

Ward, G. (2015). Is happiness a predictor of election results?, *CEP Discussion Paper No. 1343*, London School of Economics.

ASSESSMENT OF WELLBEING INDICATORS

Table A1. Explanation of Indicator assessment criteria

Indicator	Relevant	Comparable	Sensitive	Disaggregated	Timely
✓	A good measure of the overall concept.	Indicator conforms to a standard and comparable data is available	Indicator is able to pick up annual changes with accuracy	Data source supports disaggregation at a regional level.	Available at least annually.
-	A good measure of some aspect of the overall concept.	Indicator conforms to a standard or comparable data is available, but not both	Indicator is able to show a trend over several years but annual data may be affected by noise.	Data source supports disaggregation at a national level.	Part of a regular data collection with a period of more than one year.
X	No strong connection to the outcome to be measured.	No standard measure and comparable data not available	Indicator does not pick up changes over time well.	Data source does not allow for disaggregation.	From a one-off data collection.

Table A2. Assessment of Indicators against selection criteria

Indicator	Relevant	Comparable	Sensitive	Disaggregated	Timely
Mean PM10 concentration in micrograms per cubic meter	-	✓	-	X	✓
River water quality: macroinvertebrate community index	✓	-	?	X	X

CO2 emissions per capita	✓	✓	✓	X	✓
Biodiversity	?	?	?	?	?
Voter turnout rate in last local body elections	-	✓	-	X	-
Mean trust in health, education, and policy institutions	-	✓	-	✓	-
Mean generalised trust	✓	✓	-	✓	-
Mean expectation of voice in decision-making	✓	-	X	X	X
Gender gap and Māori/non-Māori gap in institutional trust.	-	✓	-	✓	-
Regional real GDP per capita	✓	✓	✓	X	✓
Real median hourly earnings	✓	✓	✓	-	✓
Employment rate	✓	✓	✓	-	✓
Unemployment rate	✓	✓	✓	-	✓
Median hourly earnings as a percentage of mean hourly earnings	✓	✓	✓	-	✓

Female median hourly earnings as a percentage of male median hourly earnings	✓	✓	✓	-	✓
Māori median hourly earnings as a percentage of non- Māori median hourly earnings	✓	✓	✓	-	✓
School leavers with NCEA level 2 and above	✓	✓	✓	✓	✓
School entrants with prior ECE	✓	-	✓	-	✓
Students in tertiary education as a proportion of the population	-	✓	✓	-	✓
Labour force participation rate	✓	✓	✓	-	✓
Proportion of 15 to 24 year-olds Not in Education, Employment, or Training (NEET)	✓	✓	✓	-	✓
Male NCEA level 2 attainment rate as a percentage of female	✓	✓	✓	✓	✓
Māori NCEA level 2 attainment rate as a percentage of non-Māori.	✓	✓	✓	✓	✓
Percentage of households spending more	-	✓	-	-	✓

than 30% of income on housing					
Percentage of the population reporting that their dwelling is cold sometimes or most of the time	-	✓	-	-	-
Household crowding	-	✓	✓	-	-
Shared spaces	?	?	?	?	?
Life expectancy	✓	✓	-	-	-
Gender gap in life expectancy	✓	✓	-	-	-
Maori/non-Maori gap in life expectancy	✓	✓	-	-	-
Victimisations per 100,000 people (violent and burglaries)	-	✓	✓	-	✓
Maori/non-Maori gap and gender gap in victimisation rate.	-	✓	✓	-	✓
Mean loneliness score.	✓	✓	-	-	-
Proportion of the population reporting it easy or very easy to express their identity	✓	✓	-	-	-

Proportion of the Te Tauihu population speaking Te Reo	-	-	-	✓	-
Proportion of the Te Tauihu Māori population speaking Te Reo	-	-	-	✓	-
Māori/non- Māori gap in the proportion of the population reporting it easy or very easy to express identity	✓	✓	-	-	-
Proportion of the population reporting experience of discrimination in the last 12 months	-	✓	-	-	-
Mean life satisfaction score	✓	✓	-	-	-
Gender gap and Māori/non-Māori gap in mean life satisfaction	✓	✓	-	-	-
Mean sense of purpose in life	✓	✓	-	-	-
Proportion of day with net positive affect.	✓	✓	-	-	-