

Indicators Aotearoa New Zealand –
Ngā Tūtohu Aotearoa:
Key findings from consultation and
engagement



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Purpose and summary

Indicators Aotearoa New Zealand – Ngā Tūtohu Aotearoa: Key findings from consultation and engagement summarises the outcomes from our approach to develop a suite of indicators that measure New Zealand’s progress – using a wellbeing and sustainable development ‘lens’. This document outlines the steps we took to develop the initial set of indicators.

Introduction

Internationally, there has been a move to measure wellbeing beyond GDP. Stats NZ has done this by developing a comprehensive suite of social, cultural, environmental, and economic indicators – Indicators Aotearoa New Zealand – Ngā Tūtohu Aotearoa (Indicators Aotearoa NZ). The indicators will provide an independent and transparent picture of wellbeing in New Zealand.

These measures cover New Zealand’s current wellbeing, future wellbeing (what we are leaving behind for future generations), and the impact New Zealand is having on the rest of the world (transboundary impact). They build on international best practice and are tailored to New Zealand.

The indicators support the government's wellbeing vision to provide a more holistic view of wellbeing and sustainable development than a purely economic measure does. Establishing a comprehensive suite of indicators that show how New Zealand is progressing is needed for several reasons.

- To improve decision-making by providing a wider view of progress.
- To enable government investment to be more effectively directed towards improving the overall wellbeing of New Zealanders, alongside economic growth.
- To enable the public to monitor New Zealand’s wellbeing progress and sustainable development.
- To empower non-government organisations and community groups to make informed decisions, and help them advocate for the wellbeing of specific groups and communities.
- To support New Zealand’s contribution to international reporting requirements, such as the UN Agenda 2030 for Sustainable Development and UN Human Rights Reporting.

The core set of indicators will signal blind spots and highlight areas of progress. The Treasury will use Indicators Aotearoa NZ to help inform their [Living Standards Framework](#) (LSF), and as a key user, the Treasury’s development of the LSF will feed into future development of the indicator suite.

Given the broad nature and applications for the indicators, Stats NZ designed a process that would consider the views of the New Zealand public and bring in subject matter experts to contribute to the indicator selection. The intended result was to create indicators that would be useful and applicable to a wide range of organisations, groups, and individuals.

Development of the indicators was based on the Conference of European Statisticians (CES) framework. The CES framework allows flexibility in the topics that are included. We adjusted the framework throughout our indicator selection process to ensure its fit and relevance to New Zealand.

[Appendix 1: Choosing a framework](#) has more information about the framework selected.

Partnership with Māori

Early in the project, we agreed that Indicators Aotearoa NZ would co-design with Māori. We planned, developed, and considered aspects of the 'co-design' model, alongside deliberate action to incorporate te ao Māori perspectives into the indicator selection process.

However, it became apparent that the planned approach would not fully achieve this goal, and a new strategy was developed to ensure robust ongoing relationships with key partners from te ao Māori.

Acknowledging the challenges of achieving a full and meaningful partnership with Māori, while still delivering to a committed timeframe of June 2019, the project took steps to bring te ao Māori views into the indicator selection process through other initiatives.

- Establishing a Māori Advisory Panel, whose first hui was held in October 2018. They provided advice on te ao Māori values for wellbeing and strategic partnership considerations.
- Initiating correspondence with Tūhono affiliates to share information about the project and create a short poll about wellbeing. (Tūhono is a charitable trust that advocates for, and contributes to, a network of over 160 Māori individuals, iwi organisations, and other entities who work together to foster positive Māori identity, wellbeing, and potential.)
- Researching Māori and iwi wellbeing frameworks to understand te ao Māori wellbeing concepts.
- Conducting an international indigenous peer review, to review the selected indicators from indigenous perspectives.
- Conducting a te ao Māori subject matter expert review of the indicators from a te ao Māori perspective.

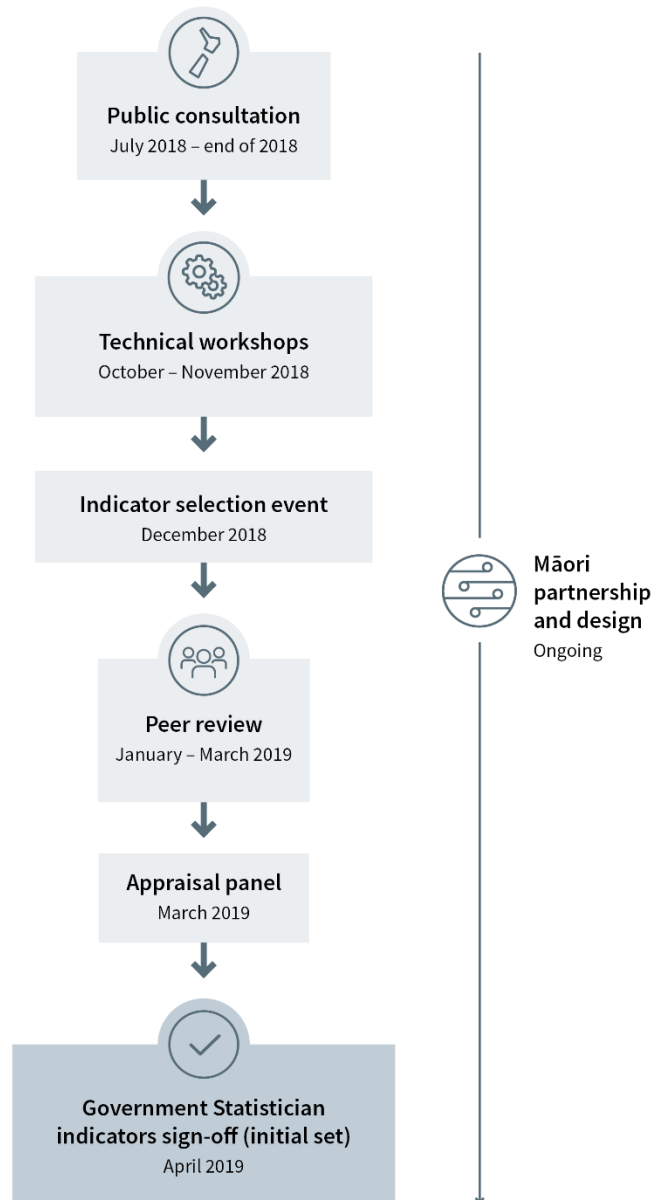
The Māori partnership and design (MPD) strategy provides a foundation to forge a stronger partnership with te ao Māori and allow Stats NZ to continue to develop Indicators Aotearoa NZ.

Indicator selection process and key findings

This section outlines the steps we took and key findings during the consultation and engagement phase of Indicators Aotearoa NZ, which led to the sign-off of the first set of indicators intended for publishing on the website in June 2019. See figure 1 for the indicator selection process.

Figure 1

Indicators Aotearoa New Zealand – Ngā Tūtohu Aotearoa: Indicator sign-off process



Text alternative for figure 1

The process flow diagram shows the consultation and engagement steps taken leading up to the indicator sign-off process. This starts with public consultation from July 2018 to the end of 2018, followed by technical workshops in October to November 2018, an indicator selection event in Dec 2018, peer review from January to March 2019, an appraisal panel in 2019 and ends with the Government Statisticians sign-off (initial set) in April 2019. Down the side of the entire process flow diagram is Māori partnership and design, which is ongoing.

Public consultation

Research and evidence that recognises the need for engaging with society and citizens when developing measures about the progress of a country/society has been growing (OECD, 2009). Before identifying indicators, Stats NZ sought to understand what was important to New Zealanders – using a ground-up approach rather than a top-down one. To do this, we launched a nationwide public consultation in July 2018.

Recognising the diversity of New Zealand, we invited the public to engage using:

- submissions – through an online submission form on Stats NZ's website, email, social media, or physical post
- an online poll on Stats NZ's website
- postcards – which we provided to schools, local councils, libraries, Department of Conservation regional offices, rest homes, and regional Ministry of Social Development sites (to be returned by freepost).

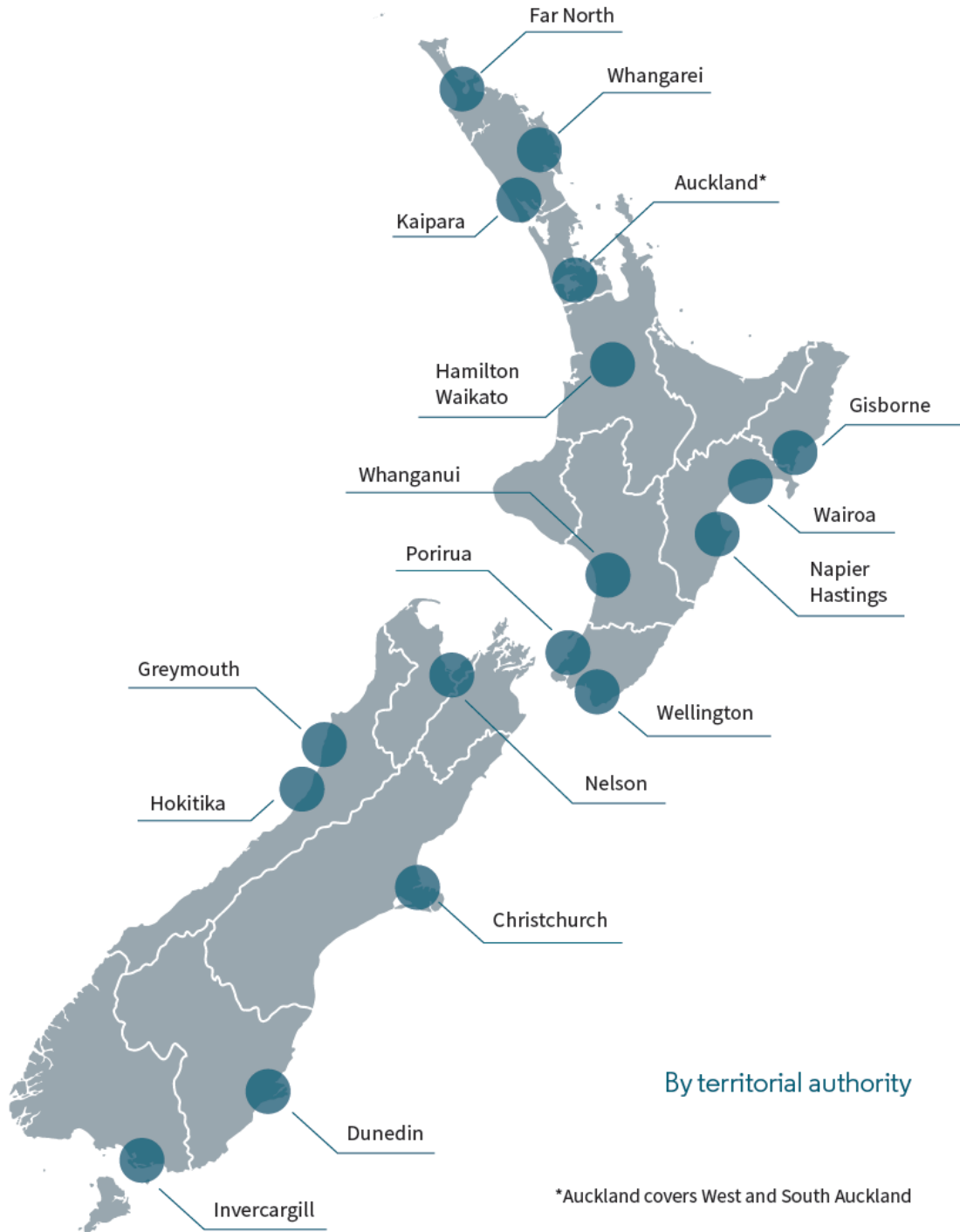
A te reo version of the online submission form and online poll were also available to the public.

In addition to the above channels, we ran 61 community engagements across New Zealand (see figure 2). This allowed us to understand what wellbeing meant to different community groups, for example Māori, Pasifika, school children, and the elderly.

Figure 2

Community engagements across New Zealand

17 August to 4 October 2018



Text alternative for figure 2

The map of New Zealand shows community engagements across New Zealand between 17 August and 4 October 2018. Each territorial authority visited is represented by a circle. From north to south they are: Far North, Whangarei, Kaipara, Auckland (covers west and south), Hamilton, Waikato, Gisborne, Wairoa, Napier/Hastings, Whanganui, Porirua, Wellington, Nelson, Greymouth, Hokitika, Christchurch, Dunedin, and Invercargill.

Key findings

- Health came through consistently – its importance for wellbeing was often mentioned across all submission types.
- Many respondents acknowledged the different types of health – physical and mental health were acknowledged as separate aspects, as well as spiritual health and family health, the four cornerstones of health as recognised by the Te Whare Tapa Whā Māori health model (Ministry of Health, 2017).
- Mental health was frequently noted for a variety of topics, suggesting its importance across many aspects of wellbeing.
- ‘Family and whānau’ also came through consistently as being important in most submission types.
- High-level polls showed ‘our society’ and ‘our environment’ were ranked highest in terms of what matters most.
- In submissions containing te reo Māori, this Māori proverb was regularly referenced: “He aha te mea nui o te ao? He tāngata, he tāngata, he tāngata”. “What is the most important thing in the world? It is the people, it is the people, it is the people”.
- Submissions related to the environment commonly mentioned the words: clean, natural, and healthy.

We used the results of the public consultation to inform the rest of the indicator selection process. We provided summary exploratory analysis at technical workshops, and high-level preliminary results at the indicator selection event, where subject matter experts provided advice on indicator selection.

[Appendix 2: Public consultation results and methodology.](#)

Alongside the public consultation, the Indicators Aotearoa NZ project team met with many groups including central and local government, and the social sector, to present and discuss the project. Throughout the whole of the indicator selection process, meetings, presentations and workshops were held with a number of groups.

[Appendix 3: Engagements with interested groups](#) lists the groups we met with.

Technical workshops

Following the public consultation, we held technical workshops and consultations to bring together subject-matter and technical experts to propose indicators.

From mid-October to early November 2018, 19 technical workshops were attended by over 200 individuals from central government, local government, business, academia, and community groups. Subject matter and technical experts discussed potential indicators, data sources, and technical

challenges in measuring wellbeing. The workshop discussions were informed by the preliminary findings from the public consultation.

The first 15 workshops focused on specific wellbeing topic areas. In each workshop, people identified a set of potential indicators for each topic area. The final four 'cross-cutting' workshops looked across all topics and provided further input into the potential indicators.

Key findings

- Robust, and often highly technical discussion on fundamental concepts, frameworks, definitions, and measurability challenges.
- Strong support for measuring how wellbeing outcomes are distributed across groups in the population.
- Most workshop discussions on the social-related topics reached broad consensus about a prioritised list of indicators for further consideration by Stats NZ.
- Environmental topics were more challenging, with considerable discussion on whether the indicators should focus on pressure, state, or impacts (as described in the environmental reporting framework, MfE, 2014).
- Selecting indicators on the four 'capitals' (social, human, natural, and produced) was challenging – some participants raised concerns with the 'capital' concept and its relationship to wellbeing.

[Appendix 4: Technical workshops results](#) has more information.

Indicator selection event

Each indicator proposed at the technical workshops was evaluated against how well it related to the relevant topic definitions and if it met indicator selection criteria.

[Appendix 5: Guiding principles and technical criteria for indicator selection](#) has more information.

We presented this evaluation at the indicator selection event in December 2018. Preliminary findings from the public consultation were also presented and available for technical experts to use while evaluating indicators.

Discussion focused primarily on endorsement of the indicators assessed as 'recommended' and determining which of the 'maybe' indicators should be elevated to 'recommended'.

Key findings

- The event was attended by just under 200 individuals; 40 percent of them had attended at least one technical workshop.
- Participants agreed on adding 'family and whānau' to the topics (as recommended during the technical workshops), and supported splitting 'culture and identity' into two separate topics: 'culture' and 'identity'.
- Debate was rigorous during the topic-based discussions, including around indicators on: 'spiritual health', 'suitability of land use', 'population living in hazardous areas', 'democratic participation', 'waterborne disease outbreaks', 'illness attributable to air quality', 'educational attainment', 'fish stocks', and 'global CO₂ emissions'.
- The event resulted in a draft list of 111 unique indicators across 24 topics.

The indicators agreed at the event were reviewed against findings from the public consultation and written submissions provided during and after the event. The indicators were also assessed against the results of other recent wellbeing consultations, including consultation by the Children’s Commissioner and Oranga Tamariki (Ministry for Children on children and young people’s views on wellbeing), and consultation by the Social Investment Agency on wellbeing.

[Appendix 6: Indicator selection event results](#) has more information.

Peer review

A review of the indicators was conducted in three ways. Firstly, by local and international experts on wellbeing. Secondly, from the perspective of nations with an indigenous population. Finally, a panel of te ao Māori subject matter experts reviewed them from a te ao Māori perspective. These peer reviews occurred between January and March 2019. They are discussed separately as each were given different instructions.

[Appendix 7: Peer reviewers of potential indicators](#) lists the agencies.

Review by national and international subject matter experts

The peer review panel of international and national subject matter experts provided feedback on whether the proposed indicators are a robust and balanced set for monitoring New Zealand’s progress. We provided reviewers with the potential list of indicators and supporting documentation and requested feedback on three questions.

- Do the proposed indicators provide a robust and balanced set for monitoring the progress of New Zealand?
- Are there any major gaps in the topics and indicators, noting that we have still to develop indicators for the Family and whānau topic and that work on incorporating indicators that reflect te ao Māori perspectives is ongoing? We would value your thoughts on potential indicators for the Family and whānau topic.
- Do you have any feedback on the outcome indicators noted above which did not make it into the proposed suite of indicators?

Key findings

The reviewers considered the indicators generally provided a comprehensive and balanced suite for monitoring the progress of New Zealand. Their comments also included:

- a need for greater clarity around the project’s purpose and how it relates to other key frameworks
- recommending we select a subset of headline indicators to tell the story of New Zealand’s progress
- suggesting we eliminate using the same indicator under several topics where possible
- a proposal to include some critical input and output measures (ie to expand our guiding principles beyond ‘outcome focused’).

Some key gaps identified include:

- indicators specific to children and older people
- indicators reflecting te ao Māori perspectives
- access to justice

- bullying and harassment
- digital inclusiveness
- resilience (including psychological, emotional, financial, social)
- biodiversity.

Review from an indigenous perspective

The reviewers tasked with peer reviewing the project from an indigenous perspective came from:

- Data and Statistical Standards branch of Stats NZ
- Social and Aboriginal Statistics Division of Statistics Canada
- Indigenous and Social Information Branch of the Australian Bureau of Statistics.

The instructions to these peer reviewers were similar to those given to local and international peer reviewers, although the questions asked were different.

- Do you have any advice for achieving a robust process that appropriately includes both general and indigenous aspirations?
- Do the proposed indicators so far provide a balanced set for monitoring the progress of Aotearoa New Zealand?
- Are there any major gaps in the topics and indicators? We would value your thoughts on any potential indicators for the 'family and whānau' topic, and any others you recommend as important to indigenous people's wellbeing aspirations.

Key findings

- CES framework (the framework used as the basis for the suite of indicators) is too Eurocentric to accurately reflect te ao Māori.
- Engagement with Māori is paramount to developing meaningful indicators.
- Māori wellbeing is underpinned by different concepts and values than those used; therefore, the current definitions are too narrow.

Review from a te ao Māori perspective

A te ao Māori analysis included subject matter experts from across the six domains of the He Arotahi Tatauranga – Māori Statistical Framework (Stats NZ, 2014).

[He Arotahi Tatauranga](#) has information about Māori information needs.

This analysis included all indicators identified during the selection process, including those from the technical workshops that had been ruled out through the indicator selection process. This review was led by Stats NZ's Māori Advisory Group and included additional Māori experts.

We asked the reviewers to consider the indicators from a te ao Māori perspective and evaluate them according to a set of ranking criteria. We also asked them to note any gaps, and provide comments or recommendations on the indicators, the process, and the underlying concepts.

[Appendix 8: Te ao Māori subject matter expert review – indicator ranking criteria.](#)

Key findings

- Acknowledgement that Māori have not been involved from the beginning of the process (eg framework selection).
- The indicators are broadly appropriate (they reflect core matters of recognised importance to Māori), but are an incomplete reflection of dimensions of wellbeing that are important to Māori.
- The indicators are not sufficiently comprehensive to serve the needs of Māori and require additional measures.
- Some indicators could be reframed to capture more meaningful conceptions of Māori wellbeing. (eg using values-based measures/ frameworks and aligning with the foundational aspirations of Māori wellbeing reflected in Whānau Ora – opportunities, choice, and self-determination).

[Appendix 9: Peer reviewer consolidated results](#) has a comprehensive description of the results.

Appraisal panel

The Government Statistician convened a panel of experts to partner with Stats NZ to discuss and make recommendations based on the peer review feedback. The panel members were selected for their expertise in wellbeing and across the social, economic, and environmental domains. A balance of Māori and non-Māori perspectives was an important consideration in selecting panel members.

The panel members approached the peer review feedback from two perspectives:

- recommendations for indicators in each topic area
- feedback on Indicators Aotearoa NZ from a te ao Māori perspective.

The panel initially discussed broader issues raised from the peer review feedback (from general, indigenous, and Māori perspectives). This allowed smooth and focused discussion of the indicators, unhindered by bigger issues that had caused some confusion for peer reviewers.

The key themes discussed included:

- **The purpose of the indicators** – the panel agreed the indicators are a ‘core set’, rather than a ‘toolbox’. The core set should be the high-level signal of progress; supplementary domain-level statistics would tell the fuller picture.
- **Outcome indicators vs other measures such as contribution or outputs** – the panel agreed that framing the purpose of the indicators will help explain why outcome indicators are more appropriate than other measures.
- **Te ao Māori indicators** – the panel supported Stats NZ’s intention to partner with Māori and continue to develop Indicators Aotearoa NZ. The panel agreed this should not prevent the current set being released, as they have application and relevance for all New Zealanders. The panel provided recommendations to the Government Statistician on how to partner with Māori to further develop Indicators Aotearoa NZ. These recommendations included:
 - Formally commit to review the indicator suite from a te ao Māori perspective and in accordance with a te ao Māori process.
 - The process for the te ao Māori review align with a revised Māori partnership and design strategic approach.
 - The review of Indicators Aotearoa NZ to be led by te ao Māori.

- Stats NZ support te ao Māori to design and implement a te ao Māori review process.
- An outcome after the June 2019 website release be a distinct te ao Māori framework that complements and links with the national framework.

To develop and implement the MPD Strategy, Stats NZ will work closely with te ao Māori and draw on a range of Māori wellbeing frameworks, including [He Arotahi Tatauranga](#), the Māori Statistical Framework.

Panel members supported the comments from peer reviewers regarding the need for further work to embed a te ao Māori view and supported the direction of the refreshed process that Stats NZ is taking.

- **Differences between our framework and the Treasury’s LSF Dashboard** – panel members were reassured there is commitment from Stats NZ and Treasury to move towards aligned indicators and frameworks. There was also a more general call to government for consistency of approach, specifically in having shared definitions and descriptions of elements of wellbeing.

Key recommendations

The panel’s recommendations included:

- that further work is needed to develop indicators that reflect te ao Māori perspectives; this should be done following the indicators’ release in June 2019.
- that further work be done after the release to identify life cycle-specific indicators for all relevant topic areas, particularly indicators relating to children and older people.

Changes we made to the list of indicators in partnership with the panel included:

- moving several environmental indicators previously listed under ‘current wellbeing’ to ‘natural capital’
- Adding these indicators:
 - health equity
 - suicide
 - justice equity
 - commuting time to work
 - access to natural spaces
 - active stewardship of the land
 - biodiversity/native species
 - net migration by skill type.
- Removing these indicators:
 - access to lifestyle services
 - access to essential services
 - healthy life index
 - income certainty
 - lifelong learning
 - emissions

- indoor air quality
- adaptive skills.

[Appendix 10: Summary of appraisal panel recommendations for indicators.](#)

Government Statistician indicator sign-off

Following the recommendations of the appraisal panel, the revised list of indicators was presented to the Government Statistician for sign-off. She considered the panel's response, alongside all other information outlined earlier, in making her decision on the initial set of indicators.

[Appendix 11: Signed-off list of indicators](#) lists the final indicators approved on 4 April 2019.

Conclusions and next steps

Development of the indicators started in November 2017 and the first stage ends in June 2019, when the initial set of indicators is released on a purpose-built website.

The measures cover current wellbeing, future wellbeing (what we are leaving behind for future generations), and the impact New Zealand is having on the rest of the world (transboundary impact).

The first set of indicators was signed-off by the Government Statistician on 4 April 2019 after consultation and engagement with the public, and international and national subject matter experts. During development, there was strong support for some indicators, but acknowledgement that further work was required to clearly define these before they could be included.

Any future iterations of the indicators or changes to the set will also require sign-off by the Government Statistician.

International views and frameworks for measuring wellbeing are continually developing and evolving. It is important that we consider feedback on the initial set of indicators, particularly around their usefulness.

The initial set of indicators includes data gaps, such as a complete absence of any data, or limitations on the ability to break information down to useful and meaningful levels for different communities.

The next steps for Indicators Aotearoa NZ are outlined below.

Māori partnership and design

Incorporating wellbeing from te ao Māori perspectives is seen as vital for Indicators Aotearoa NZ. This will enhance the relevance and richness of the indicator set for Aotearoa New Zealand. The idea of wellbeing is an intrinsic and fundamental part of te ao Māori. A range of frameworks define wellbeing outcomes from a te ao Māori viewpoint and capture the essence of wellbeing in a holistic manner.

Stats NZ is committed to further developing the set of indicators to incorporate concepts of wellbeing from a te ao Māori perspective. This development process will be led by te ao Māori in partnership with Stats NZ.

Relationship with the Treasury’s Living Standards Framework

Indicators Aotearoa NZ and the Living Standards Framework (LSF) and its dashboard are related, but they have different functions. Stats NZ's indicator suite is a data source that will serve domestic and international reporting needs.

The LSF is a Treasury tool to support the analysis of wellbeing when developing policy advice. The LSF dashboard will broadly draw from Indicators Aotearoa NZ but may also use other datasets that support the Treasury’s policy analysis.

A future focus for Stats NZ is to continue working with the Treasury to align these two initiatives where relevant and possible.

Data gaps

The entire indicator selection process has been deliberately non-data-driven. The process set out to identify ‘ideal’ indicators, not merely a collection of existing measures. This ensures balance and future-thinking. Stats NZ, in collaboration with other agencies, will work on the information gaps identified in developing the initial indicators. In addition to gaps for specific indicators, we will also document issues about presenting the indicators at the required level of disaggregation.

Ongoing technical developments

While the indicators we deliver in June 2019 will be robust and useful, and presented on an easily navigable website, Stats NZ will continue with technical developments behind the scenes. Some will be unseen (eg continuing to enhance our internal data flow processes), while other developments may be more obvious, (eg providing greater disaggregation for indicators, or alternative dashboard views). These developments will be based on customer feedback.

Release of website tool

We will present Indicators Aotearoa NZ through a webtool that enables customers to see the high-level indicators and drill down into the data. Where possible, people can view the indicators by (for example) region, gender, ethnicity, and other key variables. The underlying data will also be downloadable. The website will have associated metadata and be grouped by topic/domain and by relationship to current wellbeing, future wellbeing, and wellbeing elsewhere.

We envisage the website will enable indicators relating to other initiatives, such as the Treasury’s LSF dashboard and the United Nations Sustainable Development Goals, to be viewed separately. We also intend it to include links to other sets of indicators, such as Environmental Reporting indicators or health indicators.

Indicators Aotearoa NZ will be enduring. It will continue to provide an independent and transparent picture of wellbeing in New Zealand as we look beyond GDP to develop a more holistic view of New Zealand’s wellbeing.

Appendix 1: Choosing a framework

The starting point for developing the suite of indicators was to agree on a framework. There has been a growing view nationally and internationally that economic measures need to be balanced with environmental and social measures to provide a more holistic understanding of the state of a nation. Many existing frameworks were available.

Criteria used in evaluating frameworks:

Flexible – can be used for a range of purposes and needs

Enduring – reflects broader themes than the issues of the day

Enabling – supports international obligations and domestic policy frameworks

Meaningful – New Zealanders can connect and relate to it; has wide acceptance

Complete – covers all dimensions of sustainable development and wellbeing

Coherent – ensures the selection of indicators is relevant, balanced, and aids the complicated links between indicators

Conceptually sound – a clear rationale in the selection of the indicators, avoiding an eclectic mix

Scientifically based – enables selection of indicators that are measurable against scientifically accepted targets.

We reviewed several frameworks against the criteria above and found one framework was best suited to our need. This framework is the Conference of European Statisticians Recommendations on Measuring Sustainable Development (CES framework) (UNECE, 2014).

Under the CES framework, sustainable development is about making choices: between using resources to maximise current wellbeing or preserving resources for future use, or between maximising the wellbeing of one country at the expense of others.

The framework distinguishes three conceptual dimensions of sustainable development: wellbeing of the current generation in one country (ie here and now), the wellbeing of future generations (later), and the wellbeing of people living in other countries (elsewhere).

Another element of the framework is the importance of looking at how wellbeing is distributed across different groups in the population.

[Conference of European statisticians recommendations on measuring sustainable development](#) [PDF, 226p] has further information about the CES framework.

The CES framework allows flexibility in the topics included. We adjusted the framework throughout our indicator selection process to ensure its fit and relevance to New Zealand.

Appendix 2: Public consultation results and methodology

Results

We analysed the feedback we received during the public consultation using quantitative and qualitative methods.

Methodology has information about the analytical process used.

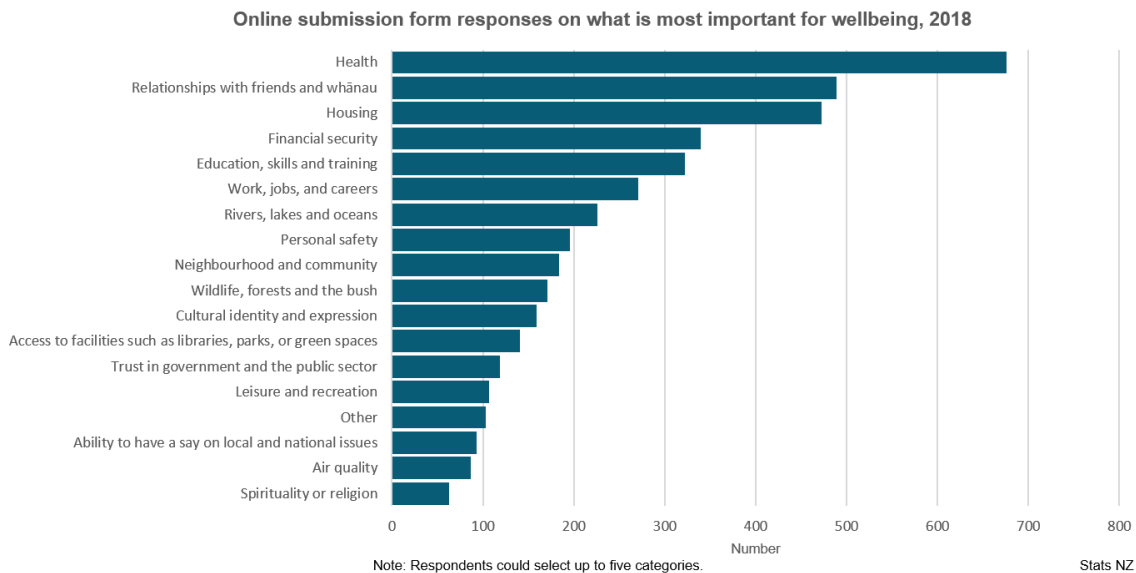
This section summarises the comments and suggestions made during the public consultation.

Online submission form

The online submission form was designed to allow people to make a detailed submission in either English or te reo Māori. We received 879 submissions this way – from 828 individuals and 51 organisations. We asked respondents to select which five of 18 categories they thought were most important for the wellbeing of New Zealanders.

The top 10 selections included health; relationships with friends and whānau; housing; neighbourhood and community; and wildlife, forests, and the bush (see figure 3).

Figure 3



Text alternative for figure 3

Figure 3 is a horizontal bar graph that shows the results of the online submission form, 2018. Ranking of the 18 categories is in the order respondents thought they were most important for the wellbeing of New Zealanders. Respondents could select up to five categories. Health received the most responses with 676, followed by Relationships with friends and whānau (489), Housing (472), Financial security (340), and Education, skills and training (322).

We asked, “What is it about *your choice* you think contributes the most to wellbeing?”

To answer this question, we analysed the free-text responses.

Most-frequently used words or terms associated with the top 10 categories (and associated quotes):

Health: good health, mental and physical health, health care, enjoy life, healthy.

“If you're not healthy you can't access all the other things which contribute to wellbeing, like friendships, the environment, learning, and other activities which make you feel good”

Relationships with family and whānau: mental health, good relationship, support network, have people, social connection.

“Whānau represent the essence of our wellbeing”

Housing: human need, affordable housing, feel safe, warm dry, quality housing, human right, home, health, security.

“Adequate housing is one of the basic human needs. Poor housing leads to significant problems, such as health issues, inability to go to school and work, and feelings of inadequacy and unfairness”

Financial security: have enough, enough money, basic need, mental health, less stress, healthy food, financial insecurity, life, people.

“I think wellbeing is significantly improved when you have less worries about money”

Education skills and training: good education, enable people, financial security, quality education, give people, life, society, opportunity.

“Education enables each individual to reach towards their potential in all areas: better jobs and income, better health and fitness, awareness of place in society and the world”

Work, jobs, and careers: financial security, mental health, self-esteem, people need, meaningful work, living wage, purpose, life, society, income.

“Working gives people a sense of purpose (and dignity), which is correlated to having a higher quality of life”

Rivers, lakes, and oceans: clean water, water quality, natural environment, future generation, life, health, healthy.

“Wellbeing is about the wellness of our natural world around us as much as it is about physical human markers. Ko au te awa ko te awa ko au. If the river is sick, so too the people will be unhealthy”

Personal safety: feel safe, mental health, feel unsafe, people have, fear, community, life.

“How can you be happy, if you are not free from fear? If you fear for your personal safety, you are essentially in survival mode and don't have the capacity to enjoy or engage in life's pleasures.”

Neighbourhood and community: feel connect, strong community, safe neighbourhood, people feel, feel safe, mental health, social, support, family/whānau.

“A sense of belonging in our local neighbourhood and community, connectivity with others, contributes to a sense of well-being and ownership for individuals in the environment in which they live”

Wildlife, forests, and the bush: natural environment, mental health, healthy environment, physical health, natural world, future generation.

“Our land is Taonga and we must treat it with respect as a healthy land contributes to health[y] people”

When reviewing submissions made using te reo Māori, the Māori concept kaitiakitanga was mentioned as being important to wellbeing:

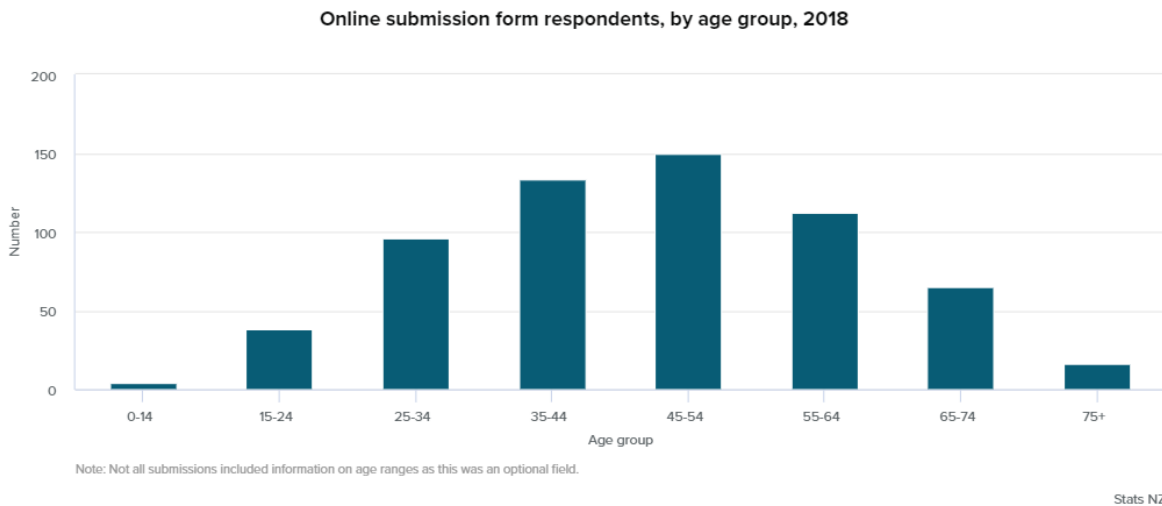
“Water quality is reliant on good riparian vegetation. Good water quality means the mauri of our wai is maintained, allows for mahinga kai gathering and lets ecosystem services continue to be upheld. The sense of responsibility/kaitiakitanga is good for mental health as it provides a purpose.”

People who completed the online submission form

Only the online submission form collected information about the people completing the form. Providing this information was optional – 667 respondents provided some demographic information.

Of those who provided demographic information, most were aged 35–64 years. Almost a quarter were aged 45–54; 22 percent 35–44 years; and 18 percent 55–64 years (see figure 4).

Figure 4

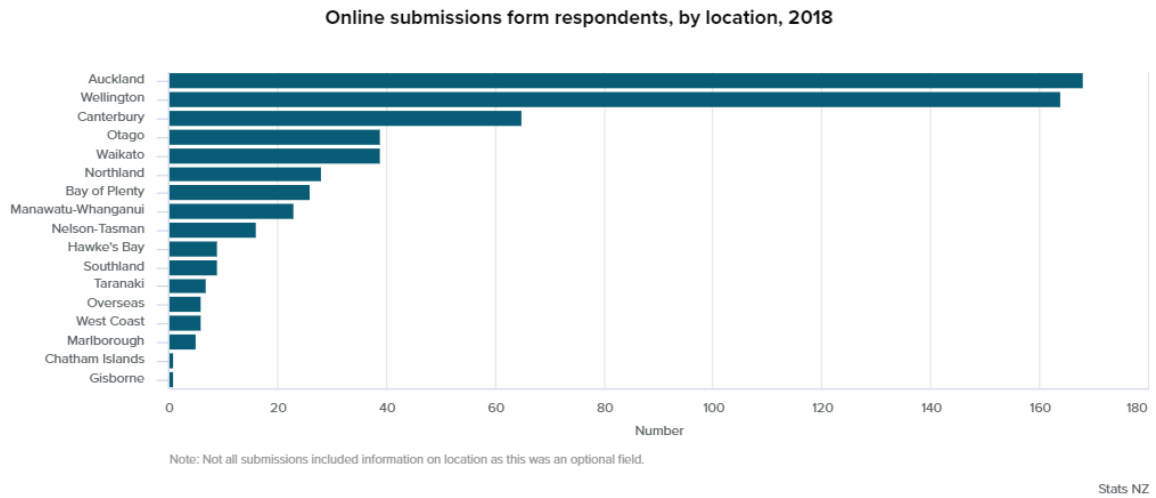


Text alternative for figure 4

Figure 4 is a vertical column graph that shows the number of respondents in each age range, for those who reported their age, in this optional field on the online submission form, 2018. The graph shows that 96 respondents reported their age as 25–34, 133 respondents as 35–44, 150 respondents as 45–54, and 112 as 55–64. A total of 81 respondents reported their age as 65+ and 42 reported their age as under 25.

We received responses from Northland to Southland, including the Chatham Islands and overseas. Of those providing their region, the largest proportion was from Auckland, closely followed by Wellington (see figure 5).

Figure 5



Text alternative for figure 5

Figure 5 is a horizontal column graph that shows the number of respondents by location, for those who reported their location, in this optional field on the online submission form, 2018. The graph shows that the highest number of respondents reported they were from Auckland (168 respondents) closely followed by Wellington (164). The next highest location was Canterbury with 65 respondents followed by Otago and Waikato with 39 respondents each.

Of those who provided their ethnicity most (71 percent) identified as New Zealand European and 9 percent as Māori. The remaining 20 percent identified as either Chinese, Indian, Samoan, Cook Island Maori, or Other (eg Tongan, Niuean).

Organisational submissions were dominated by non-government organisations (43 percent), but included charities (12 percent) and local government (12 percent).

Online poll

The online poll was designed to allow people to make a high-level or quick online submission in either English or te reo Māori. We received 844 submissions through the online poll. We asked respondents to select which one of the four options provided was most important to them, and to explain what it was about their selected option they thought contributed the most to wellbeing.

Respondents ranked the four options as: our society, our environment, our economy, our impact on the rest of the world (see figure 6).

Figure 6

Online poll responses to 'What is most important to you?', 2018



Text alternative for figure 6

Four rectangles in the diagram show responses to the online poll question “what is most important to you”. The size of each represents the number for each option. ‘Our society’ had most responses, with 402. ‘Our environment’ had 310 responses, 70 people chose ‘our economy’ as being most important to them while 54 selected ‘our impact on the rest of the world’.

We asked, “What is it about *your choice* you think contributes the most to wellbeing?”

To answer this question, we analysed the free-text responses.

Most-commonly used words or terms provided by respondents:

Our society: healthy society, mental health, feel safe, social cohesion, health care, basic need, people, community, family/whānau.

Several responses used this Māori proverb: “He aha te mea nui o te ao? He tāngata, he tāngata, he tāngata”. “What is the most important thing in the world? It is the People, it is the people, it is the people”.

Our environment: healthy environment, clean air, natural environment, clean water, natural resource, green space, future generation, clean environment, life.

The need to respect and care for Papatuanuku (mother Earth), was reflected in the submissions.

Our economy: strong economy, healthy economy, provide job, negative effect, more people, family member, life.

Our impact on the rest of the world: other country, indigenous culture, human rights, good thing, people, family/whānau, economic, happy, need.

Free-text only responses

We received 16 responses to our online poll that were not associated with a specific category. Many mentioned more than one category as being important to wellbeing.

“Our environment coupled with a robust economy”

This pattern occurred in many responses to the online poll – people acknowledged the interactions and the effects of one category on another.

“Wellbeing is a holistic concept and all of these factors listed are important for New Zealanders...”

Several submissions questioned the need to choose between priorities.

“This is a leading question that betrays a narrow view of the world we live in. All these elements are interdependent”.

Tūhono partnership

In October 2018, we partnered with Tūhono by developing a separate online poll aimed at raising awareness of Indicators Aotearoa NZ through their affiliates. Tūhono is a national network of Māori individuals, iwi organisations, and other entities that foster the identity, wellbeing, and potential of Māori.

This poll was posted online and asked one question, with a free-text box for responses:

He aha te mea nui mō te oranga o tō whānau, o tō hapū, o tō iwi hoki?

What is important for the wellbeing of your whānau, your hapū, your iwi?

The project continues to work with Tūhono and will progress further opportunities to gain Māori input.

Postcards

Postcards were designed as an alternative approach to an online method, and allowed people to provide a quick snapshot of their views on wellbeing. We sent them to organisations, including schools, libraries, and rest homes. They were also used at community engagement sessions. We received 715 postcards with 561 responses to the multiple-choice tick-box question.

We asked “what matters most to you?” People could choose one to four categories and provide free-text responses to help us tell the story about what mattered to them and their whānau (see figure 7).

Figure 7
Example of a postcard response from the public consultation, 2018



Text alternative for figure 7

The image shows an example of a returned postcard from the public consultation process. On one side of the postcard, in response to the question “what matters most to you” the respondent has ticked the option “our environment” and has left blank the options our economy, our society, and our impact on the rest of the world. On the other side of the postcard, the respondent is asked to “help tell the story about what matters to you and your whānau”. They responded “my favourite animals and life and learning new things and my family”.

Postcard responses were ranked: our environment, our society, our impact on the rest of the world, our economy (see figure 8).

Figure 8

Post-card responses to 'What matters most to you?', 2018



Note: Respondents could select multiple categories

Stats NZ

Text alternative for figure 8

Four rectangles in the diagram show responses to the postcard question “what matters most to you”. The size of each rectangle represents the number of responses for each option. ‘Our environment’ had most responses, with 317. ‘Our society’ was second, with 215 responses. The results for ‘our impact on the rest of the world’ and ‘our economy’ were similar – 138 and 132 people respectively chose these options.

We asked, “What matters most to you and your whānau?”

To help us understand this question, we analysed the free-text responses.

Family/whānau was referenced the most. Other commonly used words or terms included good health, mental health, fresh water, healthy food, have fun, happy, friend.

Community engagements

We held 61 community engagement sessions, from Far North to Invercargill and from the east to the west Coast. These sessions targeted harder-to-reach areas and groups to ensure we heard from a broad range of individuals. The team connected with 1,218 people, 85 community organisations, and 16 community segments.

Community engagement focused on two main questions: “What does wellbeing mean to you?” and “What matters most to you?”. Results are summarised below.

Health

‘Health’ was mentioned most frequently when people stated what wellbeing meant to them. Health was also the second most-frequently mentioned word for what matters most to people.

The words ‘good’, and ‘physical’ and ‘mental’ were often used alongside health, suggesting that people distinguish between these two forms of health.

We had several references to the Māori health model – Te Whare Tapa Whā, which takes a holistic view of Māori wellbeing and focuses on the four cornerstones of Māori health – taha tinana (physical health), taha wairua (spiritual health), taha whānau (family health), and taha hinengaro (mental health) (Ministry of Health, 2017).

Family and whānau

‘Family/whānau’ was used most frequently in answer to the question “What matters most to you?” and was the third most-frequent (after health and healthy) when we asked, “What does wellbeing mean to you?”.

The words quality, time, and healthy were often used alongside family, suggesting a connection between family/whānau and these things.

Email and social media submissions

Email and social media submissions allowed people to provide feedback that was not restricted by pre-determined categories or formatting, and as an alternative for the online submission form. We received 64 email submissions and several social media submissions. Around one-third were from individuals and the remainder from organisations such as local councils, NGOs, religious groups, and university departments. A large proportion of group submissions were from health-related organisations such as special interest groups, district health boards, and public health organisations.

Health came through strongly as an important part of wellbeing. Approximately two-thirds of submissions referred to a health-related topic:

“We contend that health is a key pillar of wellbeing”

Health aspects included mental and physical health, nutrition, and health risk factors (eg smoking, gambling, alcohol).

Many submitters, particularly local and regional councils, wanted the indicators to deliver a wide range of indicators at the local level (including rural), to assist local monitoring and planning. Several respondents wanted to disaggregate the indicators by sub-populations.

“Special measures must be taken to ensure the voices of disadvantaged and marginalised populations, including Pasifika, LGBTQI, and people living with disabilities, all of who have their own ideas about wellbeing, are actively included...”

Several submissions emphasised the importance of including indicators on the wellbeing of infants, children and adolescents, and the elderly.

The importance of culture and identity was seen in many submissions, with some stressing the importance of a te ao Māori view and a few noting the importance of honouring Te Tiriti o Waitangi. “We also support the work to ensure te ao Māori perspectives are embedded into the set of wellbeing indicators.”

A few submissions expressed support for only using objective measures, while substantially more stressed the importance of including subjective measures of wellbeing. “...both objective and subjective measures of health are important and that there is a close relationship between the two.”

People frequently talked about the importance of social connections and family/whānau. “Humans are social animals whose wellbeing is dependent on being in a supportive community.”

The contribution of loneliness to poor wellbeing was seen within a number of submissions. “Loneliness prevents people from reaching their potential as it affects how they work, how they study, and how they live their everyday lives.”

Finally, having the ability to meet basic needs was mentioned by many as being an important aspect of wellbeing.

“Every individual and family needs to know they can afford health, homes, warmth and food.”

Methodology

This section outlines the methods used to collect and analyse feedback from the public consultation.

The Government Statistician and the Minister of Statistics launched the consultation on 31 July 2018. Public consultation ran officially until 30th September 2018, however we continued to accept submissions through to the 20th December 2018 acknowledging that some people and organisations had directly requested an extension on the deadline.

A working group within Stats NZ, which included the Indicators Aotearoa NZ project team, questionnaire design experts, strategic communication advisors, and the publishing team, developed the consultation documents.

We used different forms of engagement to ensure the consultation would include many New Zealanders.

Online submission form

People could make a submission using the online form on the Indicators Aotearoa NZ consultation webpage, or by emailing directly. We included factsheets and an online video in [te reo Māori](#) and [English](#) on the website to provide background information for people.

The online submission form was developed in Survey Gizmo, an internet-based tool. The respondent could choose up to five of 18 given categories they considered to be the most important for the wellbeing of New Zealanders and write the reasons why.

The categories on the online submission form were chosen by considering:

- the framework used for Indicators Aotearoa NZ. This framework is based on the [Conference of European Statisticians Recommendations on Measuring Sustainable Development](#) (CES framework)
- other similar overseas consultations (eg UK Office for National Statistics)
- being relevant for New Zealand.

The final categories were user tested to ensure they were fit for purpose.

We deleted the submissions from Survey Gizmo weekly, giving each a unique code identifier and storing them in a secure area in Stats NZ's IT system.

Online poll

The online poll aligned with the postcards, to provide a quick way for people to respond. It aimed to provide a 'pulse check' on what matters to people at a high level. We asked people to choose the one most important aspect of wellbeing from four categories (our environment, our society, our economy, our impact on the rest of the world) and what it was about that aspect that mattered most to wellbeing. This tool was also available in te reo Māori.

The online poll was built in Survey Gizmo. Submissions were deleted weekly and each given a unique code identifier and stored in a secure area in Stats NZ's IT system.

Postcards

We provided postcards to organisations such as schools, local councils, libraries, rest homes, and regional Ministry of Social Development sites. They were a quick and easy way to ask peoples' thoughts on wellbeing and an alternative to the online approach. People could select from four given topics about what matters most to them (our environment, our society, our economy, our impact on the rest of the world) and could also provide free-text answers. The categories were a simple way to explain the broad spectrum of what the indicators would cover.

Email submissions

Individuals or groups could submit email responses, either by requesting a Word version of the online submission form or as a general response to the Indicators Aotearoa NZ email address. The email option was provided as an alternative for people who did not want to use Survey Gizmo.

Social media submissions

A number of submissions were received through social media. The majority of these were in response to posts by Stats NZ directing people to online submissions.

Community engagement

The Stats NZ Community Engagement team met with communities and community groups to understand what wellbeing meant to them. The team had 61 meetings across the country. The groups provided feedback for discussion and understanding of wellbeing.

We engaged with targeted groups, in targeted geographies across New Zealand. These included: community groups, students, youth, the elderly, cultural groups, mothers' groups, men's groups, leisure groups, community health groups, community action groups, trusts, religious groups, Māori, Pasifika, and other ethnic groups. We met in venues that included schools, libraries, community centres, churches, tertiary institutions, and public agencies.

Tūhono partnership

This poll was posted on the project website and asked one question in te reo, with a free-text box for responses:

He aha te mea nui mō te oranga o tō whānau, o tō hapū, o tō iwi hoki?

What is important for the wellbeing of your whānau, your hapū, your iwi?

This question was developed and tested by the questionnaire design team at Stats NZ, then reviewed by an external Māori language expert who guided an appropriate framing. The question was actively promoted through Tūhono.

The poll was built in Survey Gizmo. Submissions were downloaded to the Stats NZ environment daily and deleted from Survey Gizmo. We gave each a unique code identifier and stored submissions in a secure area in Stats NZ's IT system.

Analytical process

We stored all respondent information in a secure location in Stats NZ's IT system and imported it to Excel where necessary. We analysed most submissions using the statistical software package R, which provided quantitative analysis. We used a natural language processing toolkit to analyse the free-text responses and extract the most-frequent single and co-occurring words. During analysis single words were defined as nouns or adjectives, and co-occurring words as nouns, adjectives, and verbs that occurred adjacent to each-other. We excluded nonsensical and non-informative words, which ensured useful and informative words were output during our analysis.

This report focuses on the top five single and co-occurring words used by respondents in their free-text answers. Community engagement responses were analysed differently because we collected them in a different way. For this reason, we reported only the top single words and created a word network to provide context when we analysed the community engagement responses.

Where a co-occurring word included a top single word, only the co-occurring word was mentioned; for example if 'feel safe' and 'safe' were in the top words/terms, only 'feel safe' was reported. In addition to this if more than three words/terms were ranked fifth equal, only the top four words/terms were included in these results. Results were split by submission type and question.

We counted single and co-occurring words once per submission to ensure the results were not biased towards those mentioning the same words/terms multiple times.

Where appropriate, words from te reo Māori were translated to English, in consultation with the Māori dictionary, to ensure they were captured in the natural-language processing toolkit. For example, replacing ‘tamariki’ with ‘children’. However, translation was not always suitable for some Māori concepts or proverbs; for example, the translation of Te Whare Tapa Whā (a Māori health model) (Ministry of Health, 2017) was not meaningful. We considered each example manually and summarised them qualitatively.

Manual processes

Email submissions were read, summarised and logged by Stats NZ analysts before the analytical phase. We used the information provided to inform indicator selection.

A small proportion (less than one percent) of responses from the online poll did not select one of the four categories and submitted free-text only. Where appropriate a team of analysts imputed a category. In a small number of cases imputation was not appropriate, due to the responses mentioning more than one category – these cases are referenced separately.

All manual processes were peer reviewed by experienced Stats NZ analysts.

Appendix 3: Engagements with interested groups

As we developed Indicators Aotearoa NZ, we held meetings and workshops with these groups. Note: some engagements are not listed here. This list does not include engagement with other organisations by email and phone.

Meetings

Note: We held several meetings with some organisations.

Central government agencies

- Department of Conservation
- Department of Internal Affairs
- Department of Prime Minister & Cabinet
- Land Information New Zealand
- Maritime New Zealand
- Ministry for Women
- Ministry of Culture and Heritage
- Ministry of Defence; New Zealand Defence Force
- Ministry of Education
- Ministry of Foreign Affairs & Trade
- Ministry of Housing and Urban Development
- Ministry of Health
- Ministry of Justice
- Ministry of Social Development
- Te Puni Kokiri
- The Treasury
- Ministry for the Environment.

Other public sector agencies

- Auckland District Health Board
- Canterbury District Health Board
- Capital Coast District Health Board
- Commission for Financial Capability
- Horowhenua District Council
- Local Government New Zealand
- Waikato Regional Council.

Non-government agencies

- Akina (hosted by Department of Internal Affairs)
- Allen & Clarke (contracted to Sports NZ)
- Business New Zealand
- Horizon Research Limited/Foundation for Progress and Wellbeing
- Hui-E (included other organisations)
- Loneliness Charitable Trust NZ
- NZEI Te Rui Roa

- Pasifika New Zealand
- Spirits NZ; NZ winegrowers; NZ brewers.

Presentations at workshop/conferences:

Note: We list only the hosting organisations.

- Auckland Regional Public Health Service/ Tamaki Community
- Data summit (hosted by Stats NZ)
- Injury Information Working Group (hosted by Stats NZ)
- Ministry for Women’s International Caucus
- Measuring and Evaluating Wellbeing Group (hosted by Ministry of Social Development)
- Ministry of Health Workshop on the Sustainable Development Goals
- Natural resources sector (hosted by Ministry for the Environment)
- NZ Society of Local Government Managers Well-being Indicator Workshop
- Senior Finance Leaders Forum
- Sustainable Development Goal Interagency workshop (hosted by Ministry of Foreign Affairs & Trade)
- Te Maruata Local Government New Zealand
- Third International Conference on Wellbeing and Public Policy
- Treasury’s Living Standards Framework Challenge Panel.

Appendix 4: Technical workshop results

Workshop participants had robust and highly technical discussion about fundamental concepts, definitions, and measurability challenges. They were committed to selecting indicators that covered all aspects of a topic area.

We used the feedback received during these workshops to inform a list of proposed indicators for the indicator selection event.

This appendix summarises the key themes from the comments and suggestions made during the technical workshops.

General comments influencing proposed indicators

There was widespread support for a mix of objective and subjective indicators, and for the indicators not to be deficit-focused. Participants acknowledged the need for a balance between positive and negative measures.

Contextual factors, such as population demographics, can affect wellbeing outcomes. Contextual indicators will be included to assist with interpreting the indicators.

Participants recognised that indicators should cover all life stages and age groups, including children, so they are not geared towards an adult population. They should also cover people in the 65 years and over population. Participants supported breakdowns of the indicators for all genders, not just males and females.

There was strong support for the indicators to capture equity and fairness. Indicators Aotearoa NZ will provide an equity 'lens' through breaking down indicators by variables such as ethnic groups and disability status where possible.

Some workshops discussed whether output indicators should be included, such as smoking prevalence, hazardous alcohol consumption, and food security. Many participants accepted these are intermediate outcomes and contribute to wellbeing outcomes, but are not outcomes themselves.

Indicators relating to access to goods and services were considered – such as access to education or to credit. The conclusion was that access may affect the wellbeing of individuals and families but is not a wellbeing outcome.

Workshops debated which topic area some indicators should be placed in, which resulted in some appearing under more than one topic. For example, 'ability to be yourself' was included under both **subjective wellbeing** and **identity**. Similarly, 'sense of purpose' was under **subjective wellbeing** and **social capital**.

The connections between topic areas was noted. For example, **health** is closely linked to **safety**, **income**, and **housing**. Reconciling a holistic indigenous understanding of wellbeing in a segmented western approach was considered a challenge, but also an opportunity.

Comments from specific workshops

In addition to overarching comments, several crucial comments and suggestions came from specific workshops. These are summarised below.

There was support for including an additional topic **family and whānau** in the Indicators Aotearoa NZ framework and some indicators for this topic were proposed. There was also support for combining the **energy** and **mineral resources** topics into one, and for the **work** topic to cover both paid and unpaid work.

Discussion in the **safety and crime** workshop focused on safety from a crime and safety point of view, rather than from broader concepts of safety.

The **education** and **health** workshops discussed whether to include indicators of system performance, but concluded they are not relevant to the purpose of Indicators Aotearoa NZ.

Workshops on **environmental topics** discussed the relationship of each topic to wellbeing, and whether the indicators should focus on pressure, state, or impacts. Participants considered a mix of indicators was needed to present a complete picture. It was also important to cover the services humans derive from the environment, as they provide a strong link to wellbeing. Participants acknowledged the importance of cultural aspects for environmental topics (eg the cultural dimension of water and stewardship of land and natural resources).

At the **culture and identity** workshop the topic was split into **culture** and **identity** as people acknowledged the topic area was broad. Discussion covered the following dimensions in selecting the indicators:

- arts and media as forms of expression and representation
- ethnic tradition and heritage, with Māori heritage being a unique element for New Zealand
- identity, including gender and sexual orientation.

The significance of 'technology' to the wellbeing of New Zealanders was discussed. It was regarded as an important enabler of wellbeing outcomes, rather than an outcome itself.

Some participants struggled with the concept of the four 'capitals' (**social, human, natural, and produced capital**). However, they recognised the importance of measuring capital stocks to provide a picture of what we are leaving behind for future generations.

Participants also discussed specific **data limitations**, which included commentary on household surveys (eg NZ General Social Survey) limiting the amount of disaggregation that is possible, including making it hard to obtain data at a low level of geographical breakdown. The 12-year frequency of the Time Use Survey was also highlighted as a significant data gap.

Appendix 5: Guiding principles and technical criteria for indicator selection

Guiding principles

- Indicators should be outcome focused.
- They should be relevant to New Zealand and incorporate te ao Māori views.
- Movement should be unambiguously associated with progress.
- Objective and subjective indicators should be included.
- Parsimony should guide the selection process – ‘less is more’.
- Selection of the indicators should not be data driven.
- The indicator set should provide a complete picture.

Technical criteria

The indicators should be:

- relevant to the underlying phenomena of interest
- sensitive to change in the underlying phenomena
- statistically sound
- able to be disaggregated
- intelligible
- consistent in time and space.

We evaluated the indicators proposed at the technical workshops using the guiding principles and technical criteria above. This led to a recommendation as to whether the indicator should be included in the suite of indicators:

- Recommended – the indicator was relevant to the topic definition and was assessed as meeting all or most of the selection criteria.
- Maybe – the indicator was generally relevant to the topic definition but met only some of the selection criteria.
- Not recommended – the indicator was either not relevant or did not meet many (or any) of the guiding principles and technical criteria.

Appendix 6: Indicator selection event results

Participants at the indicator selection event supported the indicators being based on what is important to New Zealanders – people need to see themselves in the indicators. The importance of covering equity and fairness was highlighted and most participants were satisfied this would be adequately covered by providing distributional breakdowns of the indicators – by variables such as age, ethnicity, and disability status.

For some indicators, discussion was around the most appropriate topic each should be associated with. For example, should ‘unpaid work’ be associated with **work, economic standard of living, or social capital**. Similarly, should the ‘NEET’ (not in employment, education, or training) rate sit under **work, education and skills, or human capital**.

We also received feedback on specific topics and indicators.

The indicator selection event resulted in a draft list of indicators that we sent for international and national peer review.

Comments relating to specific topics

We received several crucial comments and suggestions that were specific to certain topics. These are summarised below.

Family and whānau

There was strong support for including **family and whānau** as an additional topic in the indicator suite. However, participants considered that more consultation was needed on the scope of this topic, how it fits with other topics, and selecting the indicators.

Health

Discussion on the indicator ‘spiritual health’ was contentious. Some participants suggested it belonged under the **culture** topic; others that it should stay under **health**. One participant felt strongly that it had no place in the indicator suite, as it is not something government can influence.

A separate ‘food security’ indicator was strongly supported. Diet is a component of the healthy life index, a composite measure that will also cover smoking, hazardous drinking, and exercise. Most participants supported including ‘premature mortality from non-communicable diseases’ as a recommended indicator, although one participant questioned what it adds.

Leisure

Participants argued strongly for ‘time spent on leisure’ to be included as an indicator under **leisure**, alongside ‘satisfaction with leisure time’. Some participants considered ‘access to leisure opportunities’ could also be an indicator, but most thought ‘satisfaction with leisure time’ would capture this.

Work

There was consensus that ‘unpaid work’ should be covered. These indicators were recommended for inclusion under **work**.

- employment rate
- NEET rate (not in employment, education, or training)
- median hourly earnings
- job strain.

Economic standard of living

Discussion highlighted the importance of covering wealth, poverty, and inequality under **economic standard of living**, in addition to income. Participants supported adding ‘income adequacy’ and ‘income certainty’ to the recommended indicators. There was debate about whether financial capability should also be included, but the consensus was that it was more relevant to the **human capital** topic.

Education and skills

Covering both the quality and quantity of education was supported. Some participants objected to using NCEA level 2 as the threshold for the ‘educational attainment’ indicator. The group supported ‘informal education/lifelong learning’ and ‘participation in quality ECE’ being added to the recommended indicators for this topic.

Safety

There was debate around whether there should be separate indicators on ‘bullying’ and ‘elder abuse’, which was unresolved. Some participants thought acts of bullying could be covered under ‘child harm’.

Governance

Participants supported including an indicator on ‘corruption’. While they were generally supportive of an indicator on ‘democratic participation’, some disagreed with using ‘voting’ as a measure of this. ‘Transparency’ and ‘representation in government’ were proposed as other potential indicators for this topic.

Subjective wellbeing

There was strong support for including indicators on ‘whānau wellbeing’, ‘ability to be yourself’, and ‘experienced wellbeing’ to those recommended for this topic. How whānau will be defined in the ‘whānau wellbeing’ indicator was discussed.

Culture and identity

It was proposed that **culture** and **identity** be separate topics. ‘Sense of identity’ was considered an important indicator of **identity**. For **culture**, adding four indicators to those recommended was

supported: ‘engagement in cultural activities’, ‘language development and retention’, ‘preservation of heritage assets/taonga’, ‘intergenerational transfer of knowledge’.

Social connectedness

There was strong support for including ‘loneliness’ as an indicator under the **social connectedness** topic.

Cities and settlements

Discussion on the **cities and settlements** topic led to ‘homelessness’ and ‘access to essential and lifestyle services’ being added to the recommended indicators for this topic. A potential indicator, ‘population living in hazardous zones’, was contentious. Participants recommended this indicator focus on resilience.

Discussion on a ‘suitability of the housing stock’ indicator did not promote it to be a recommended indicator. A new measure on ‘use of active transport modes’ was recommended. The most appropriate measure to use for the recommended indicator on ‘housing affordability’ was discussed, but no agreement was reached.

Climate

Participants thought there should be more indicators than those recommended at the event. The recommended indicator on ‘net greenhouse gas emissions’ was strongly supported, although it could be broken into three separate measures: production, consumption, and absorption rate.

Rigorous debate around whether to include an indicator on ‘temperature-related illness’, had strong support from a medical school representative. Ultimately, the group agreed not to recommend it, along with indicators on ‘extreme temperature change’, ‘vector-borne diseases’, and ‘infrastructure impacts’.

Air quality

Participants generally supported the recommended indicators on **air quality**, although they had concern about how the indicator on ‘indoor air quality’ will be measured. We acknowledged this indicator is a placeholder, waiting on developing a robust methodology for measuring it.

The ‘illness attributable to air quality’ indicator was debated, since it can be difficult to attribute ill health to air quality. However, participants agreed to retain it as a recommended indicator because short-term health effects of daily air quality changes are relatively easy to measure.

Land

The **land** topic generated a lot of discussion on the topic’s scope and whether the focus is now or intergenerational. The recommended indicator on ‘suitability of land use’ was contentious; participants questioned the scope of the indicator and its measurability. Changing the name of this indicator to ‘land use relative to capability’ was recommended. There was general support for including an indicator on ‘iwi participation in land management (kaitiakitanga)’.

Waste

Participants proposed that potential indicators on ‘recycling’ and the ‘second-hand economy’ be wrapped into the recommended ‘material intensity’ indicator. There was general support for the recommended indicators on ‘waste generation’ and ‘waste flows in coastal marine environments’, but also that the latter indicator should include waste flows in all waterways.

Water and sanitation

The group considered it important to distinguish between drinking water quality and the quality of water for other activities. They recommended the proposed indicators on ‘access to safe water for recreation’ and ‘access to water for food gathering’ become a single indicator; ‘water quality’ should look at the quality of drinking water.

The ‘water stress’ and ‘water abstractions’ indicators should be a single indicator. A potential indicator on ‘waterborne disease outbreaks’ was contentious – some participants saw it as a good indicator on how well we are managing our water quality; others thought we have a lot of disease resulting from poor water quality that is not identified. An indicator on ‘perceptions of water quality’ was not supported.

Ecosystems

The central debate in the **ecosystems** discussion was whether the indicators for this topic should measure the state of ecosystems and assume the flow of services, or whether they try to measure the flow of services. Participants decided to focus on the services obtained from ecosystems and measure their flow.

Energy and mineral resources

Participants recommended that indicators on the stock of these resources should be with the **natural capital** indicators. Including indicators on energy consumption and on the use of renewable energy under **natural capital** was supported.

They recommended the indicator on ‘annual extraction’ be changed to ‘utilisation, efficiency, sustainability, and security of resources’. The participants also discussed potential indicators on ‘energy affordability’ and ‘offshore energy footprint’ but views on the usefulness of these indicators were mixed.

Social capital

Group discussion supported including indicators on ‘volunteering’ and ‘democratic participation’ but was divided over using ‘voting’ as a measure of ‘democratic participation’. Other potential indicators were discussed but not generally supported: ‘sense of belonging’, ‘positive and equitable inter-group relations’, ‘transparency’, and ‘valuing diversity’. Using ‘capital’ in the context of wellbeing was questioned by some participants.

Human capital

Indicators on ‘educational attainment’ and ‘core competencies’ were supported, although concern was expressed about the former covering both the quality and quantity of attainment.

Some participants saw the recommended indicators as quite narrow, and agreed an indicator on ‘adaptive capacity’ would widen the set. The group discussed potential indicators on ‘te reo speakers’ and ‘cultural knowledge’ and recommended these be considered further for inclusion under this topic.

Natural capital

Participants in the **natural capital** discussion supported the recommended indicators on ‘total water resources’ and ‘global CO₂ concentrations’, subject to the former covering both the quality and quantity of water resources. They discussed whether the indicator on CO₂ concentrations should be only national greenhouse gas emissions, but agreed since New Zealand’s emissions are being captured under **climate**, the global measure stayed.

Participants agreed on the need for an indicator on ‘productive land’ and that this should capture slope of land. An indicator on ‘fish stocks’ was also supported but the proposed measure was criticised. The group noted that planetary boundaries are missing from the recommended indicators on **natural capital**.

Produced capital

The **produced capital** topic discussion traversed a range of indicators including ‘housing stock’, ‘knowledge capital’, ‘public space,’ ‘digital connectivity’, ‘livestock’, ‘converted (improved) land’, and ‘household net worth’. The outcome of the discussion was support for indicators on ‘infrastructure’ and ‘modified land’.

Appendix 7: Peer reviewers of potential indicators

National and international experts reviewed our draft suite of indicators. Government agencies also commented on the proposed indicators along with te ao Māori subject matter experts.

Peer review included feedback from:

- Statistics Canada / Government of Canada
- Office for National Statistics, United Kingdom
- University of Melbourne, Australia
- University of British Columbia, Canada
- Statistics Sweden
- Organisation for Economic Co-operation and Development
- Australian Bureau of Statistics
- Stats NZ
- Lincoln University
- University of Auckland
- Planetary Boundaries
- Treasury
- Ministry for the Environment
- Ministry of Health
- Department of the Prime Minister and Cabinet
- Ministry of Foreign Affairs and Trade
- Ministry of Social Development
- Department of Internal Affairs
- Waikato Regional Council
- Office for Māori Crown Relations – Te Arawhiti

Appendix 8: Te ao Māori subject matter expert review – indicator ranking criteria

During the peer review process, we asked subject matter experts to evaluate the indicators from within te ao Māori – using the following ranking scale and criteria.

- Recommended: the indicator is very relevant within te ao Māori, and will provide a valuable contribution to the story of Māori wellbeing.
- Potential: the indicator has some relevance within te ao Māori, and has some contribution to the story of Māori wellbeing.
- Maybe: the indicator is somewhat relevant within te ao Māori, and may or may not contribute to the story of Māori wellbeing.
- Low potential: the indicator is not relevant within te ao Māori will not contribute to the story of Māori wellbeing.
- Not recommended: the indicator is not at all relevant within te ao Māori, and may contribute negatively to the story of Māori wellbeing.

Appendix 9: Peer reviewer consolidated results

The reviewers considered the indicators did provide a comprehensive and balanced set for monitoring New Zealand's progress. A couple commented there was a heavy focus on the environment ahead of other domains.

This section summarises the general comments made by peer reviewers and is broken down by theme.

Summary of feedback from review

Purpose

The purpose of the project was not clear to all reviewers.

“The core purpose of Indicators Aotearoa New Zealand – Ngā Tūtohu Aotearoa needs to be clarified. Is it to be primarily a comprehensive suite of indicators which can be generally used and referred to, or is it intended to define the key elements and goal of sustainable societal progress and wellbeing in New Zealand and provide regular measures of progress towards them,” one reviewer commented.

Another saw the purpose was to provide a “comprehensive ‘diagnostic’ wellbeing dashboard that is suitable for detailed monitoring of wellbeing across a wide variety of topics.” They noted that large dashboards serve many purposes.

Framework

Reviewers took interest in our using the Conference of European Statistics Recommendations on Measuring Sustainable Development (CES) as the foundational framework for Indicators Aotearoa NZ. Some reviewers supported this, and the conceptual distinction between ‘current wellbeing’, ‘future wellbeing’, and ‘wellbeing elsewhere’. It was noted that the framework helps to clarify the relationship between the different components. However, others suggested other frameworks may have been more appropriate, eg Māori Statistical Framework could have provided a good basis from which to develop a framework appropriate for Aotearoa New Zealand.

One reviewer commented the measures are quite siloed, with social topics measuring social things and environment topics measuring environmental things, with little overlap. It was also mentioned that the framework needs to go beyond measuring transactions and physical processes to measuring the relationships between capitals and services (eg there are measures of housing, but not of the sense of community). This reflected feedback through other channels (meetings and presentations).

Reviewers were generally supportive of our work to modify the CES framework so it better reflects what is important to New Zealand.

Te ao Māori perspectives

Feedback from te ao Māori subject matter experts generally assessed the current indicators as being a robust general set; however, they acknowledged there were significant gaps that needed to be filled to make this a useful set of indicators for te ao Māori.

- The indicators could be framed on a values basis eg consider kaitiakitanga and the environment along with the relationship that people have to the environment.

- We can explore more holistic and integrated approaches to framing indicators and measures.
 - when measuring wellbeing, Māori emphasise the contribution to relationships and the ability to participate (rather than proficiency or quantity).
 - framing and developing the indicators can be informed by te ao Māori epistemology (knowing), ontology (being), and methodology (doing), all of which support interrelated and interconnected approaches.
- The indicator suite can be framed according to te ao Māori informed frameworks eg alignment with Whānau Ora indicators and the foundational principles of He Arotahi Tauranga is recommended.
- Some definitions and measures are understood differently within te ao Māori eg what constitutes ‘overcrowding’ is a culturally defined understanding.

Several reviewers stressed the importance of co-developing indicators through collaboration, and then validating with those who provided input. They should not be developed then presented to Māori.

Reviewers recommended a comprehensive engagement process that would allow Māori to define wellbeing for Māori, and to identify unique properties that may not be comparable to the general population. These unique indicators may be added to the general set of indicators, or may necessitate a separate framework altogether.

Headline indicators

A couple of reviewers remarked that 100+ indicators is too many to tell a story of progress. They suggested selecting a subset of around 20 indicators for more-frequent monitoring/reporting.

Indicators under multiple topics

Several reviewers noted some indicators appear under more than one topic (eg ability to be yourself under **subjective wellbeing** and **identity**) and some topics appear under more than one of the framework’s dimensions (eg **climate** under ‘wellbeing today’ and ‘future wellbeing’).

They suggested we reduce multiple listing of indicators and topics where possible by assigning them to where they conceptually fit best.

Distribution of wellbeing

Some peer reviewers commented on the need to break down the indicators (eg life cycle stage, sex, ethnic group) to show how different groups in the population are faring, particularly more vulnerable groups.

Outcomes versus inputs and outputs

The absence of input and output measures in the recommended indicators was remarked on.

One reviewer stated we should include some output measures because they pre-empt later outcomes and allow policy development and understanding. He cited an example, that ‘childhood anxiety will manifest in mental health disorders appearing 10–30 years later’.

Another suggested focusing on outcomes was broadly correct but we should include measures of critical inputs and outputs, particularly:

- where there is a strong and direct enabling relationship between inputs/outputs and wellbeing outcomes
- if the framework is to have a broader policy analysis and diagnostic function and the capacity to identify key drivers of progress and regression (which he recommends).

International comparability

Ensuring international comparability is important for international benchmarking and for contributing to international reporting requirements (eg the UN Sustainable Development Goals).

Gaps in indicators

The reviewers were invited to comment on any major gaps in the topics and indicators. The gaps identified included:

- child and youth wellbeing
- post-retirement population needs (eg personal savings, provision for retirement, health insurance)
- crime and access to justice (crime rates, Māori imprisonment, gang membership, mental health issues in prison)
- social cohesion and community wellbeing
- governance – having a say
- bullying and harassment
- early school leavers
- long-term unemployment
- benefit receipt
- commuting time
- health measures pertaining to malnutrition (obesity in particular)
- agriculture and food security
- financial capability
- inequality (including gender inequalities)
- changing technological environment and its impacts (eg being a victim of cybercrime, hacking)
- digital inclusiveness
- knowledge capital
- resilience in all its dimensions (psychological, emotional, financial, and social)
- human rights – the extent to which they are enjoyed
- national security
- biodiversity (protected areas and threatened species)

- the impact of chronic health conditions on wellbeing
- stressful experiences/stress management eg experience of discrimination
- sport and recreation sector, as this a critical part of physical and mental wellbeing
- indicators specifically about immigration or migration (this may be captured through disaggregation)
- measures of gender, disability, and other nationally relevant vulnerable populations (this may be captured through disaggregation)

Appendix 10: Summary of appraisal panel recommendations for indicators

Subjective wellbeing

The panel discussed the importance of ‘whānau connectedness’ and ‘loneliness’, both of which were highlighted in the te ao Māori review, and concluded they are covered under the **social connectedness** topic.

The significance of whenua for Māori was raised. It was agreed that this would fit better under either the **land** or **identity** topic.

The panel endorsed including these proposed indicators:

- life satisfaction
- sense of purpose
- ability to be yourself
- whānau wellbeing
- experienced wellbeing
- hope for the future.

The panel recommended the ‘locus of control’ indicator be included as a placeholder until further investigation of the robustness of the measure is done.

Health

The panel highlighted the lack of lifecycle-specific indicators, particularly for child health and the health of older people.

Members supported the proposed indicator on ‘spiritual health’, which is particularly important from a te ao Māori perspective.

The panel recommended the ‘healthy life index’ be removed from the proposed indicators as it is not an outcome measure.

Given the importance of mental health to the wellbeing of New Zealanders, the panel felt that there should be an indicator on ‘suicide’, in addition to the proposed indicator on ‘mental health’.

The panel endorsed including these proposed indicators:

- self-reported health status
- health expectancy
- mental health
- premature mortality from non-communicable diseases
- spiritual health.

Recommended that:

- new indicators on ‘health equity’ and ‘suicide’ be included
- lifecycle-specific indicators be investigated (after the June 2019 website release) across all relevant topic areas, including health
- the ‘healthy life index’ be removed from the proposed indicators as it is not an outcome measure.

Work

The panel acknowledged that the **work** indicators cover the three most-important aspects in relation to work: access to work, quality of work, and returns from work.

It supported changing the indicator on ‘unpaid work’ to ‘value of unpaid work’ and shifting it to the **economic standard of living** topic.

It considered the number of indicators under this topic could be reduced if the overall number of indicators is deemed to be too large.

The panel endorsed including these proposed indicators:

- job satisfaction
- employment
- underutilisation
- NEET rate
- hourly earnings
- workplace accidents
- job strain
- work-life balance.

Recommended the indicator on ‘unpaid work’ be changed to ‘value of unpaid work’ and moved to the **economic standard of living** topic.

Leisure

Discussion focused around the difference between leisure time and free time.

The panel endorsed including these proposed indicators:

- leisure time
- satisfaction with leisure time.

Social connectedness

The panel supported including the indicator on ‘contact with family and friends’ once it covers whānau.

It discussed the importance of ‘digital contact’ but acknowledged that it can be positively or negatively associated with progress and might fit better as a context indicator.

The panel endorsed including these proposed indicators:

- social support
- loneliness
- contact with family and friends.

Recommended the indicator on 'contact with family and friends' should cover both the quantity and quality of contact.

Governance

The panel agreed the ability to have a say in decision making would be a better measure of 'democratic participation' than 'voting' is.

They noted the proposed indicators do not cover the procedural impacts of the justice system on wellbeing, which they viewed as an important omission.

The panel endorsed including these proposed indicators:

- institutional trust
- democratic participation
- corruption.

Recommended that:

- Stats NZ undertake methodological work on developing a measure of 'democratic participation' that moves beyond 'voting'
- a new indicator on 'justice equity' be included under **governance**.

Safety

The panel considered the indicator on 'victimisation' needs further development, particularly the threshold for this indicator. There was support for this indicator to focus on serious victimisation. They noted the LSF dashboard includes an indicator on 'homicide', an internationally comparable measure that is often used when good victimisation data is absent.

The panel discussed including an indicator on 'bullying', which was raised by several peer reviewers. They agreed 'bullying' is a serious issue, particularly for children and youth, and warrants further investigation. National security was also discussed, but the panel was unable to identify a suitable indicator.

The panel endorsed including these proposed indicators:

- victimisation
- perceptions of safety
- injury prevalence
- family harm
- harm against children
- experience of discrimination.

Recommended that:

- there should be agreement between Stats NZ and Treasury on an indicator of either ‘homicide’ or ‘victimisation’ so there is alignment between the agencies
- Stats NZ undertake methodological work to develop a robust measure of bullying.

Identity

There was considerable discussion around the proposed indicator on ‘valuing diversity’. The panel thought this indicator was already captured by the indicators on ‘ability to be yourself’ and ‘discrimination’.

The panel endorsed including these proposed indicators:

- ability to be yourself
- sense of belonging.

Recommended that Stats NZ undertake methodological work to develop a robust measure of ‘valuing diversity’.

Culture

The panel agreed that **culture** and **identity** are related but distinct topics, and should be retained as separate topics

They endorsed including these proposed indicators:

- engagement in cultural activities
- te reo speakers
- intergenerational transfer of knowledge.

Recommended that:

- the indicator on ‘preservation of heritage assets’ move to the **produced capital** topic as it is a stock measure, and the indicator on ‘language development and retention’ move to the **identity** topic
- the indicator on ‘engagement in cultural activities’ become a placeholder – we should identify activities that are in scope for this indicator, and consider using the Time Use Survey as the data source.

Cities and settlements

The panel discussed how the indicator ‘access to lifestyle services’ will be measured. Because of the lack of clarity around its measurement, it should be replaced by an indicator on ‘access to natural space’.

The panel had a robust discussion around the indicator on ‘resilience’, covering infrastructure resilience, the risk of adverse events such as earthquakes or floods, and the perceived risk of adverse events. Members agreed risk can be measured well but questioned the ability to define and measure resilience.

The panel endorsed including these proposed indicators:

- housing quality
- housing affordability
- overcrowding
- homelessness
- resilience (infrastructure only).

Recommended that:

- the indicator on ‘access to lifestyle service’ be replaced with one on ‘access to natural space’
- the indicator on ‘use of active transport modes’ be replaced because there is empirical evidence that ‘commuting time’ is negatively associated with wellbeing.

The panel questioned the value of trying to measure access to all essential services in one indicator. Recommended that Stats NZ undertake methodological work to develop a robust measure of ‘access to essential services.’

Economic standard of living

The proposed indicators do not include a specific measure of child poverty. However, the indicator on ‘low income’ can be disaggregated by age to provide a child poverty measure but there will need to be clear messaging around this.

The panel endorsed including these proposed indicators:

- material wellbeing
- income
- income inequality
- net worth
- income adequacy
- low income.

Recommended that Stats NZ undertake methodological work to develop a robust indicator on ‘income certainty’, with a focus on income volatility.

Education and skills

The panel was strongly of the view that we include a measure of equity of educational outcomes under this topic, with a focus on measuring how education outcomes are dispersed.

The panel endorsed the inclusion of the following proposed indicators:

- Educational attainment
- Early childhood education
- Literacy, numeracy and oral skills
- Core competencies.

Recommended that:

- the indicator on 'literacy, numeracy, and oral skills' be expanded to include science skills
- a new indicator on the equity of educational outcomes be included under the **education and skills** topic
- the indicator on 'lifelong learning' be removed.

Energy resources

The panel considered the proposed indicators under this topic do not relate to current wellbeing and should move to the **natural capital** topic.

The panel recommended the following proposed indicators be moved to the **natural capital** topic:

- energy consumption
- energy intensity
- renewable energy.

Water and sanitation

The mana of water was considered important from a te ao Māori perspective, and the panel recommended we do further work on it.

The panel endorsed including these proposed indicators:

- water quality
- access to safe water for recreation and food gathering.

Recommended that:

- the indicator on 'water quality' be renamed to make it clear that it is drinking water quality
- the indicator on 'water stress' be moved to the **natural capital** topic as it doesn't relate to current wellbeing
- Stats NZ investigate Te Mana o te Wai after the June 2019 website release.

Air quality

The panel questioned the feasibility of measuring 'indoor air quality'. It recommended dropping it because of the measurement issues and that it is inherently captured through 'illness attributable to air quality' indicator.

The panel endorsed including this proposed indicator:

- illness attributable to air quality.

Recommended that:

- the proposed indicators on 'emissions' and 'indoor air quality' be dropped
- the indicator on 'levels of pollutants' be moved to **natural capital**.

Climate

The panel struggled to see how the indicators on ‘gross greenhouse gas emissions’ and ‘net greenhouse gas emissions’ are related to current wellbeing and suggested they move to the **natural capital** topic.

They discussed the indicator on ‘extreme weather events’ in a wellbeing context, and what should be captured – frequency or intensity. Members agreed this indicator be further considered during work on resilience being done after the June 2019 website release.

The panel endorsed including the proposed indicator:

- costs of extreme weather events

Recommended that:

- the proposed indicators on ‘gross greenhouse gas emissions’ and ‘net greenhouse gas emissions’ move to **natural capital**.
- further work on ‘extreme weather events’ be undertaken in phase 2 during work on ‘resilience’.

Land

Much discussion under this topic was around the ‘kaitiakitanga’ indicator. Some panel members felt uncomfortable with this indicator because it does not match the Māori concept of ‘kaitiakitanga’. There was strong support for it to be replaced by an indicator of ‘active guardianship of the land’, which would demonstrate people’s connection to the land.

The panel recommended:

- the indicator on ‘kaitiakitanga’ be replaced with one on ‘active guardianship of the land’, and the reference to iwi in the description be dropped
- the indicators on ‘efficiency of land use’ and ‘soil health’ be moved to the **natural capital** topic.

Ecosystems

There is a gap between the flow of ecosystem services and wellbeing, and as a result the proposed indicators do not fit conceptually under current wellbeing.

The panel recommended including an indicator(s) that captures existence values under this topic. For example, people’s wellbeing is connected to the existence of native species such as the kakapo.

The panel recommended:

- the proposed indicators on ‘provisioning ecosystem services’, ‘regulating ecosystem services’, and ‘cultural ecosystem services’ be moved to the **natural capital** topic
- a new measure of ‘biodiversity/native species’ be included under the **ecosystems** topic.

Waste

The panel noted that all proposed indicators are placeholders and acknowledged the lack of international standards around measuring waste.

It considered the amount of waste that is being generated and actions to minimise waste are the key points, both of which are covered in the proposed indicators.

The panel recommended nano-sized materials (particularly plastics) as well as micro- and macro-sized materials be included under **waste**.

The panel endorsed the proposed indicators on:

- material intensity
- waste flows into waterways and coastal marine environments.

Recommended the indicator on 'waste generation' be moved to the **natural capital** topic.

Social capital

The panel considered the proposed indicators on 'volunteering', 'institutional trust', and 'generalised trust' are good indicators of social capital. However, the indicators on 'democratic participation' and 'sense of belonging' did not add much value.

The panel endorsed these proposed indicators:

- volunteering
- institutional trust
- generalised trust.

Recommended that:

- the indicator on 'democratic participation' be dropped
- Stats NZ undertake methodological work to develop a robust measure of 'sense of belonging at the local community level'.

Human capital

The panel questioned the value of the indicator on 'adaptive capacity' and proposed that it be replaced by an indicator of 'self-determination/autonomy', to capture the extent to which people feel empowered and have the skills to take control of their lives.

The panel endorsed the following proposed indicators:

- educational attainment
- health expectancy
- literacy and numeracy skills
- core competencies
- te reo speakers.

Recommended that:

- the indicator on 'literacy and numeracy skills' be expanded to include science and digital skills
- the indicator on 'adaptive skills' be dropped

- Stats NZ undertake work to investigate whether ‘financial capability’ warrants being a separate indicator.

Natural capital

The panel noted it has proposed a significant number of indicators move from other topics to **natural capital** and suggested that these be organised by subtopic (eg energy and mineral resources, water quality, climate).

Members noted the ‘stock of water’ indicator should relate to fresh water and the ‘quality of water resources’ should cover both fresh and coastal waters.

The panel endorsed these proposed indicators in addition to those that it recommended be moved from other topics to this one:

- land assets
- productive land
- ocean acidification
- ecological integrity
- stock of water resources
- quality of water resources
- global CO₂ concentrations
- fish stocks
- energy resources
- mineral resources.

Recommended that: the indicator on ‘total water resources’ be confined to fresh water, and the indicator on ‘quality of water resources’ should cover both fresh and coastal water.

Produced capital

The panel discussion included the need to:

- include digital infrastructure in the ‘infrastructure’ indicator
- include sites of cultural significance under **produced capital**
- modify the definition of ‘modified land’ to include ‘from natural to production’, and ‘from production to other uses’.

The panel endorsed these proposed indicators:

- modified land
- infrastructure
- net fixed assets
- net international investment position.

Recommended that:

- if intangible assets are not included under ‘fixed assets’, further work be done to include them

- the indicator on 'land assets' include wetlands
- digital infrastructure be considered as a separate indicator a count of sites of cultural significance be further investigated
- **produced capital** be changed to **financial and physical capital**

Impact on the rest of the world (transboundary impact)

The panel considered the absence of an indicator on the net migration of human capital was an important omission.

The panel endorsed these proposed indicators:

- export of waste
- net greenhouse gas emissions
- consumption of net greenhouse gas emissions
- official development assistance
- net international investment position

Recommended that:

- the indicator on 'remittances to Pacific island countries' be expanded to include remittances to all countries, and the indicator on 'offshore investment to developing countries' be replaced with one on 'net direct foreign investment'
- a new indicator on 'human capital migration by skill type' be included under this topic.

Appendix 11: Signed-off list of indicators

This appendix summarises the initial set of indicators signed off by the Government Statistician on 4 April 2019.

We intend to publish those indicators with readily available data in June 2019. Further work will be required to fill the data gaps.

A more detailed list is available for download at [Indicators Aotearoa New Zealand – Ngā Tūtohu Aotearoa](#).

Current wellbeing

Air quality

Illness attributable to air quality.

Cities and settlements

Access to natural spaces, Commuting time to work, Homelessness, Housing affordability, Housing quality, Overcrowding, Resilience of infrastructure.

Climate

Costs of extreme weather events.

Culture

Engagement in cultural activities, Intergenerational transfer of knowledge, Te reo Māori speakers.

Economic standard of living

Child poverty, Income, Income adequacy, Income inequality, Low income, Material wellbeing, Net worth, Value of unpaid work.

Ecosystems

Biodiversity/native species.

Governance

Corruption, Democratic participation, Institutional trust, Justice equity.

Health

Health equity, Health expectancy, Mental health status (psychological distress), Amenable mortality, Self-reported health status, Spiritual health, Suicide.

Identity

Language development and retention, Sense of belonging.

Knowledge and skills

Core competencies (non-cognitive skills), Early childhood education (ECE) participation, Educational attainment, Inequality of educational outcomes, Literacy, numeracy and science skills of 15-year-olds.

Land

Active stewardship of land.

Leisure

Leisure and personal time, Satisfaction with leisure time.

Safety

Domestic Violence, Experience of discrimination, Harm against children, Injury prevalence, Perceptions of safety/feelings of safety, Victimisation.

Social connections

Contact with family and friends, Loneliness, Social support.

Subjective wellbeing

Ability to be yourself, Experienced wellbeing, Hope for the future, Life satisfaction, Locus of control, Sense of purpose, whānau wellbeing.

Waste

Material Intensity, including recycling, land fill Inflows, second hand economy; Waste flows in waterways and coastal marine environments.

Water & sanitation

Access to safe water for recreation and food gathering, Drinking water quality.

Work

Employment rate, Hourly earnings, Job satisfaction, Job strain, Not in employment, education or training (NEET), Underutilisation, Unemployment, Work/life balance, Workplace accidents.

Future wellbeing

Financial and Physical Capital

Heritage assets, Infrastructure, Modified land, Net fixed assets, Net international investment position, Productivity.

Human capital

Health expectancy; Literacy, numeracy, and science skills of 15-year-olds; Te reo Māori speakers.

Natural capital

Cultural ecosystem services, Ecological integrity, Efficiency of land use, Energy consumption, Energy intensity, Energy resources, Fish stocks, Global CO₂ concentrations, Gross greenhouse gas emissions, Land assets, Levels of pollutants, Mineral resources, Net greenhouse gas emissions, Ocean acidification, Productive land, Provisioning ecosystem services, Quality of water resources, Regulating ecosystem services, Renewable energy, Soil health, Stock of fresh water resources, Waste generation, Water stress.

Social capital

Generalised trust, Institutional trust, Volunteering.

Impact on the rest of the world (transboundary impact)

Climate

Consumption of net greenhouse gas emissions.

Economic standard of living

Official development assistance, Remittances to other countries.

Financial and physical capital

Foreign direct investment, International investment position.

Human capital

Net migration by skill type.

Natural capital

Net greenhouse gas emissions.

Waste

Export of waste (net and gross).

Contextual indicators

Population

Age and sex structure, Disability status, Ethnic composition, Family composition, Fertility, Geographic distribution, Household composition, Migration, Overseas born population, Population size and growth, Sexual identity, Sexual orientation, Urban/rural distribution.

Production

Components of final use, National income, Production by industry, Regional production, Returns for factors of Production, Total New Zealand production.

Glossary

dashboard – a dashboard is a way to present indicators in a simple way, understandable by the public.

demographic information – Characteristics of a group of people or a human population such as sex, age, marital status, ethnic origin, education, income, religion, and place of residence.

determinants – precursors to wellbeing, including all standard socio-economic and health factors, and importantly for Māori including awareness of, and access to, things that contribute to wellbeing.

exploratory analysis – This is the first step in the data analysis process. It is used to summarise the main characteristics of the data, often with visual methods.

financial and physical capital (produced capital) - Financial capital includes assets and liabilities that have a degree of 'liquidity' and tradability as a discrete store of value. They come in many forms and include currency, deposits, debt, company shares, government bonds and other financial instruments. Physical capital includes fixed assets that are used repeatedly or continuously in production processes. They include tangible assets (e.g. machinery, buildings, roads, harbours, airports) and non-tangible assets (e.g. computer software, intellectual property, and other specialised knowledge used in production).

free-text – Words and sentences supplied by the responders.

hapū – Kinship group, clan, tribe, sub-tribe; section of a large kinship group.

human capital – Refers to the knowledge, skills, competencies, and attributes embodied in individuals that facilitate the creation of personal, social and economic wellbeing.

iwi - Extended kinship group, tribe, nation, people, nationality, race; often refers to a large group of people descended from a common ancestor.

kaitiakitanga – The exercise of custodianship by an iwi or hapū over land and other taonga within the tribal rohe (territory).

natural capital – Refers to the elements of nature that produce value or benefits to society and all living things (directly or indirectly). It includes non-renewable resources; like minerals and fossil fuels; unconditionally renewable resources, like sunlight; and conditionally renewable resources, like soil aquifers, forest and fisheries.

natural language processing – Also known as “NLP”, applies computational techniques to analyse and gain meaning from natural language/free text responses.

objective measures – An objective measure is not influenced by emotions, opinions, or personal feelings - it is a perspective based in things that are quantifiable and measurable.

Papatūānuku – In te ao Māori Papatūānuku is the land. She is a mother Earth figure who gives birth to all things, including people.

planetary boundaries - a concept of nine earth system processes which have boundaries that mark the safe zone for the planet to the extent that they are not crossed. Scientists assert that once

human activity has passed certain thresholds or tipping points, defined as ‘planetary boundaries’, there is a risk of irreversible and abrupt environmental change.

produced capital – see financial and physical capital

qualitative analysis – The process of analysing, understanding, and interpreting meaning in non-numeric, textual data. This includes the analysis of naturally expressed opinions or views by people.

quantitative analysis – A technique that seeks to understand behaviour by using mathematical and/or statistical modelling, measurement, and research. Quantitative analysis aims to represent a given reality by using a numerical value.

R – A programming language and environment for statistical computing and graphics.

social capital – Refers to networks together with shared norms, values and understandings that contribute to societal wellbeing by building trust and facilitating cooperation within and between individuals and groups.

subjective measures – based on a respondent’s personal judgement; refers to personal perspectives, feelings, or opinions.

survey Gizmo – An online tool that is used to create and conduct surveys and questionnaires.

te ao Māori – The world as perceived by Māori.

te reo Māori – The Māori Language

Te tiriti o Waitangi – Treaty of Waitangi

The Treaty of (the Treaty of Waitangi) (the ‘Treaty’) is New Zealand’s founding document; it’s part of the fabric of New Zealand society. It is one of New Zealand’s constitutional documents, its principles have been included in Acts of Parliament and its text and principles have framed New Zealand policy making. It provides a principle basis upon which the New Zealand government agencies (including Stats NZ) partners with Māori tribes and organisations.

The Treaty provides a blueprint for New Zealand’s future growth and development.

First signed on 6 February 1840, the Treaty is an agreement, in Māori and English, that was made between the British Crown and about 540 Māori rangatira (Māori tribal chiefs). The Treaty is a broad statement of principles on which the British and Māori made a political compact to found a nation state and build a government in New Zealand.

The Treaty has three articles. In the English version, Māori cede the sovereignty of New Zealand to Britain; Māori give the Crown an exclusive right to buy lands they wish to sell, and, in return, are guaranteed full rights of ownership of their lands, forests, fisheries and other possessions; and Māori are given the rights and privileges of British subjects. In the Māori version, the Treaty was deemed to convey the meaning of the English version, but there are important differences. Most significantly, the word ‘sovereignty’ was translated as ‘kawanatanga’ (governance). Some Māori believed they were giving up government over their lands but retaining the right to manage their own affairs. The English version guaranteed ‘undisturbed possession’ of all their ‘properties’, but the Māori version guaranteed ‘tino rangatiratanga’ (full authority) over ‘taonga’ (treasures, which may be intangible). Māori understanding was at odds with the understanding of those negotiating the Treaty for the Crown, and as Māori society valued the spoken word, explanations given at the time were probably as important as the wording of the document.

whānau – Extended family, family group; a familiar term of address to a number of people; in the modern context the term is sometimes used to include friends who may not have any kinship ties to other members.

word network – a data visualisation technique that displays the frequency of co-occurring words. In this publication we have defined this as nouns, adjectives and verbs which occur directly adjacent to one-another.

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