













# Ngā ihirangi | Contents

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# Ko wai mātou | Who we are

Stats NZ supports the social, economic, and environmental wellbeing of New Zealand by adding value to New Zealand's most important data.

We have a long history as a reliable provider of statistics. Government agencies, businesses, iwi, and many organisations and individuals in New Zealand count on us to deliver data and statistics for critical decision-making. For us, operating with fairness, impartiality, and integrity is key to maintaining high levels of trust and participation in the New Zealand data system.



## Who we want to be

Our vision is to unleash the power of data to change lives. We are striving to realise this vision by working closely with our Treaty partners and stakeholders to deliver value in the data system. Our ambition is to achieve a tenfold increase in the value of the data provided to New Zealand by 2030.

Globally, national statistics offices are at a transition point from purveyors of statistics to trusted data. We are moving from 'designed' data – surveys and censuses – to greater use of administrative, transactional, and 'organic' data. In response to the changing environment and increasing criticality and focus on data, we continue to build on our traditional role as a provider of official statistics by becoming an enabler, explorer, and steward in the wider data system. We seek to achieve this change by building an organisational culture of being both reliable and pushing boundaries. This means applying caution in maintaining high standards of delivery in our core services, while seeking radically different opportunities and solutions as new data sources and demand for different statistics and data emerge. This will allow us to unleash the value of data while maintaining confidence in our delivery of key services.

Our current strategic direction is fully articulated in our 2016–20 strategic intentions, which was presented with the 2015/16 annual report. We are developing a new strategic direction for the next five years, which will outline how we will continue to adapt in our increasingly data-driven environment.

The body of this 2018/19 annual report focuses on what we learned and achieved in the past year, and the activities that contributed to achieving our strategic goal to create a tenfold increase in the value of data provided to New Zealand by 2030.



## How we're getting there

To ensure that we achieve our goals, we focused on our five strategic objectives.

1. We are the recognised leader of the New Zealand data system.
2. People trust and participate in the data system.
3. We revolutionise our data, statistics, and insights to anticipate customer needs.
4. We are reliable and push boundaries.
5. We are a sustainable and efficient organisation.

### *We are the recognised leader of the New Zealand data system*

Providing leadership on policies and practices in the New Zealand data system, with an initial focus on the public sector, is important in the rapidly changing data environment. We are fulfilling our leadership role by establishing rules and standards to support safe and trusted use of data and by being the voice of the New Zealand data system, to whom people and organisations in the data community will turn to for guidance. Fostering this leadership role requires close engagement with stakeholders and acting transparently to set an example of best practice.

We are also responding to the increased demand for data and analytics capability across the data system and are seeking to address this in our stewardship role. Creating a tenfold increase in the value of data will require greater openness and capability across the data system, and our leadership role is expanding to meet this need.

### *People trust and participate in the data system*

It is vital that people trust and participate in the data and statistics system. We need to build trust in our organisation and public data and statistics more broadly by delivering high-quality core products and services accurately and on time. We must build trust so that New Zealanders will readily engage with Stats NZ and use data and statistics to make informed decisions. Through our stewardship role, we have a responsibility to build trust in the data system beyond our own activities.

### *We revolutionise our data, statistics, and insights to anticipate customer needs*

It is important that we shape and deliver our products and services to ensure they are accessible and relevant to our customers' needs. We are seeking to achieve this by collaborating with customers and partners to develop and explore available data and new sources of data.

### *We are reliable and push boundaries*

We are developing a culture in which everyone at Stats NZ is conscious of when to apply caution and when to experiment and drive for radically different opportunities and solutions. This requires consistent high-quality delivery of our core services, which supports our ability to provide the broader, fast-paced, value-adding leadership demanded by the data ecosystem.

### *We are a sustainable and efficient organisation*

We are becoming increasingly efficient and sustainable by transforming our business model to one that is increasingly data-driven and provides a clear understanding of where our costs and efforts lie. This requires adopting a flexible operating model in which we can easily shift our focus to meet customer needs. A cultural change is needed to develop how the organisation responds to environmental changes and Government priorities, and we are working towards aligning our internal processes to achieve this.



### **Supporting our people**

Our people are at the core of everything we do as an organisation. As we respond to the changing demands of customers and our expanding role as a data leader, it is paramount that we maintain a healthy organisational culture.

We are committed to providing a work environment that recognises and values the different skills, abilities, experiences, and ways of thinking our people bring to work.

We embedded several foundations to support this aim and to sustain a healthy and diverse organisation where we recognise that our people have lives outside work. The ways we support our people and create a positive, inclusive, safe, flexible, and creative work environment are set out below.

## Diversity and inclusion

We began work on developing methods and processes that support diversity. This includes pay equity through recruitment processes and internal promotion, as well as raising awareness of different areas of diversity.

We established a Diversity and Inclusion Working Group with representatives from across the organisation in different areas and locations. The group supported and led a number of internal diversity initiatives and networks, provided advice and support to internal stakeholders, and began developing a diversity and inclusion strategy for Stats NZ.

## Lifting cultural and language competence

Our People and Culture team have been engaging across the business to develop a suite of offerings to improve Māori cultural and language competence at Stats NZ. The aim is to equip our people to partner with Māori and iwi stakeholders in their roles.

We want to provide fun and engaging tools and experiences for our people to learn and practice their te reo Māori, as well as develop their understanding of tikanga Māori and the Treaty of Waitangi.

The first stage has been the development of a mobile app to help us feel confident in using te reo Māori and when engaging with Māori. As part of this process, our waiata group in Wellington headed to a recording studio to professionally record some of their favourite waiata, including Rārangi Maunga, Stats NZ's waiata. The waiata will feature on the app when complete.

We also have one-on-one and group te reo Māori sessions. A Māori capability community of practice has been established within Stats NZ to discuss, lead, mentor, and support ongoing development of Māori capability. Their first discussion will focus on what Stats can offer through Te Wiki o te Reo Māori.



Members of the Diversity and Inclusion Working Group in August 2018.

## Recruitment, selecting, and promoting STEM (science, technology, engineering, and mathematics) careers

As the public sector functional lead for both data and analytics and data stewardship, we have a strong interest in identifying and addressing barriers at all stages of the talent pipeline. This includes supporting primary school teachers to promote data and analytics careers to their students, and providing opportunities for graduates and student researchers. We also guide public sector employers on hiring and developing data and analytics professionals.

Within Stats, we intend to attract more women, Māori, and Pacific people working in STEM careers, by providing an inviting and supportive workplace. This year, we focused on educating our own people leaders about how to recruit, lead, and develop employees from diverse backgrounds, with a strong emphasis on candidate care. This includes setting up talent pools to maintain engagement with prospective employees.

## Employee development and promotion

We continued to develop the concept of 'peer to peer' learning groups by setting up communities of practice representing our various areas of technical expertise and business practice. The purpose of these groups is to aid collaboration and support learning.

We coordinated a cross-agency summer internship programme for data and analytics university students. We also offered two places for each intake of the Government Chief Digital Officer ICT graduate programme.

We are focusing on continuing career development for our leaders.

## Flexibility and work design

We have a diverse workforce of over 1,000 people made up of technical, corporate, and field staff. Most of them work in our offices in Wellington, Christchurch, and Auckland, while the rest are field staff who work from home. Our flexible, activity-based working environment recognises the different ways we need to and like to work.

We continued to develop our agile working style. The collaborative workspaces in our offices support work and contact across different teams, encouraging a dynamic way of working. Our technology and flexi-time policies enable our staff to achieve a positive work-life balance in a way that works for them.

We consistently hear from staff that our flexibility is one of the best things about working at Stats NZ. In 2019, we were the eighth most attractive employer in New Zealand in a survey run by Randstad, with flexibility and work-life balance the most significant factors for our employees.

## Remuneration, recognition, and conditions

This year we continued to apply our remuneration practices in line with our collective employment agreement with the Public Service Association (PSA), in a way that ensures we remain competitive within the public sector market. We operated robust processes for the design and sizing of jobs, with an emphasis on a gender-neutral job design. We also have processes in place

to review the sizing and remuneration of roles as they evolve, or as the market moves. Living wage has been implemented to all eligible staff, and we have a gender pay working group with representatives from the business and the PSA. Our current gender pay gap is 16.7 percent. We are working with the State Services Commission (SSC) guidelines and shall continue to do so as the SSC pay equity principles continue to be developed.

## Health, safety, and wellbeing

We are committed to providing a healthy and safe working environment at all Stats NZ locations and for our people in the field. A Health, Safety, and Wellbeing Governance Group, consisting of the executive leadership team and an external member, supports us in championing the health and safety of our employees.

This year, we focused on training our managers and employees on first-aid mental health. The workshops will help them identify and respond to signs of mental health problems in the workplace.

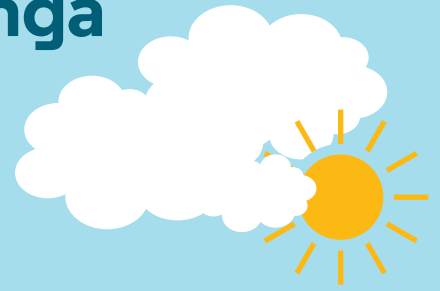
We ran health and safety in-house training workshops for employees, to provide them with the skills and knowledge to deal with work-related hazards and incidents. We also set up a reporting scheme that gives managers, who had also been trained on health and safety, the responsibility for dealing with hazards and incidents within their teams.

The safety of our field and collections staff is important to us. We continue to ensure field and collections staff are well prepared to respond to and mitigate the risks and hazards they could encounter in their work.

We completed reviewing and updating current policies and guidelines relating to the health, safety, and wellbeing of the employees we send to work overseas.

# Tatauranga Aotearoa ā-tauanga Stats NZ by numbers

For the year ended 30 June 2019



20,805  
Facebook followers at  
the end of June 2019



12,637  
Twitter followers



1,879,000 km  
(excluding census) travelled by  
Survey Interviewers



Average tenure of our staff is

8.4 years

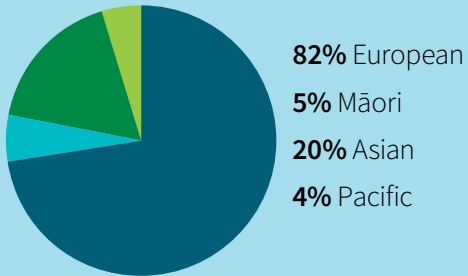
159,000  
questionnaires  
sent, gathering  
approximately  
132,000  
responses



3,379,336  
visits to stats.govt.nz website

\* Gender pay gap calculation differs from 2018 — now uses State Services Commission guidelines.

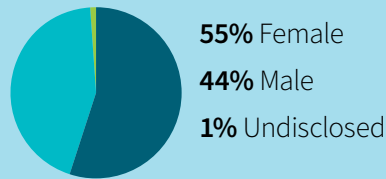
## Ethnic mix of staff (where disclosed)



1,047 staff employed across three locations

- 
- 208 in Auckland
  - 506 in Wellington
  - 251 in Christchurch
  - 82 other locations (field staff)

## Gender breakdown



Our gender pay gap\* is 16.7%

41.2% of our senior leaders are women

The 2019 Employee Experience Score as rated by staff was 67% – up from 60% in 2018

67,000 businesses and 107,000 individuals provided survey information to Stats NZ

Our staff are aged from under 20 to over 70 years

# Tatauranga 2018 | 2018 Census

Our year was dominated by the 2018 Census.

The 2018 Census saw a lower than expected level of participation, as indicated by the response rates. We spent most of 2018/19 developing methodologies for using administrative data to address gaps in census data.

In developing these methods, we used the research we began seven years ago as part of the Census Transformation programme. However, the complexity and newness of this approach has meant a significant delay for customers in accessing 2018 Census data.

The first release of 2018 Census data will be on 23 September 2019.

Using strict data safety and security protocols, we combined government administrative data with the data we collected from the census forms. Records for about 4.7 million people are now in the 2018 Census dataset, with real data about real people used to fill the gaps, after fewer people took part in the census than expected. After final data processing, the number of records is 1.4 percent (69,000) less than our best estimate of the population on 6 March 2018, census day. In 2013, the official census undercount was 2.4 percent, or 103,800 people.

The data we added to fill the gaps comes from reliable government administrative records that we hold in trust on behalf of the nation. We matched 2018 Census forms data with a file of administrative data that provided a good approximation of the New Zealand population. We also used 2013 Census data to add information about people's characteristics that are less likely to change over time.

In the final 2018 Census dataset, 89 percent of the total number of records came from 2018 Census forms and 11 percent came from other government data.

In April 2019, we confirmed the following:

- The 2018 Census dataset meets Stats NZ's quality criteria for population structure information.
- Stats NZ will use 2018 Census data to update the official population estimates and projections that many organisations use for their planning.

- The census data required for calculating the number of electorates and revising electorate boundaries are robust. Extensive testing confirmed this.
- The data needed to support the allocation of population-based funding to district health boards will be fit for this purpose.

However, we were not able to fill all the data gaps. In April 2019 we announced we would not be releasing official statistical counts of iwi, because of the level of missing iwi affiliation data, and the lack of alternative government data sources to fill the gaps. We acknowledged this was a significant loss and we are working with the Data Iwi Leaders Group, Māori interest organisations, iwi, and Māori to find real and relevant solutions.

In July 2019, we announced that the household and families data was very poor. We are currently investigating whether this data can be further improved.

During the year, the Government Statistician received advice on the 2018 Census from an independent external Data Quality Panel, comprising experts in statistical methodology design, demographic analysis, Māori and iwi data, and research using census data. The panel will publish two reports. The first will comment on overall methodology and the quality of the census data being released on 23 September. The second, which is planned for December, will focus on data quality more broadly.

The 2018 Census provided us with significant challenges and learning opportunities. The lower than expected level of participation gave us an unexpected opportunity to trial new approaches, engage more closely with our customers, stakeholders, and independent experts, and learn from the feedback we received. Our drive to recover the situation and create the best census dataset possible, has put us further along our path to modernising statistical production. We took significant steps towards building datasets using administrative data which, in future, will help reduce respondent burden and provide more integrated data. The extensive use of administrative data in the 2018 Census dataset is a significant advance for population statistics, which mirrors those we have made over the past decade in producing economic statistics.

In addition to focusing on delivering 2018 Census data, we began preparing for a 2023 Census. The design of the next census will be informed by our partnerships with Māori, our relationships with other key stakeholders and the lessons learned from internal reviews, and the findings of the *Report of the Independent Review of New Zealand's 2018 Census*<sup>1</sup> published in August 2019. This report found that while many aspects of the census went well, there were key components that were not successful. In particular, the reviewers concluded that weaknesses in overall governance and strategic leadership at the programme level led to a series of decisions that affected response rates. The reviewers made 16 recommendations relating to future censuses, organisational governance, programme governance and leadership, and engagement and communications. We have already made progress in implementing the report's recommendations.

## 2018 Census performance information

The performance measures agreed in our Estimates for 2018 Census were 'high coverage' and 'high response'. In 2016, we established specific coverage and response rate targets as part of a set of key performance indicators for the census programme. These targets, which provide a definition of 'high', were to achieve a:

- 98 percent national coverage rate
- 94 percent national response rate.

The final (or official) coverage and response rates for the 2018 Census are not yet available.

Since 1996, official census coverage and response rates have been determined using a post-enumeration survey (PES), which is run soon after census day. The 2018 PES collected data from approximately 15,000 households throughout the country. Determining the census undercount and overcount can only occur when both the final census dataset and the PES results are available for analysis. The report on the 2018 PES, which will include

the official census coverage and response rates, is expected to be published in March 2020.

In the meantime, we released interim coverage rates and collection response rates. These rates are based on the best estimate of the population on census night, not the PES results.

As at 15 July 2019, the interim national coverage rate was 98.6 percent. Given this is higher than the 98 percent target, it is possible that we will achieve the performance target for national coverage.

As at 15 July 2019, the national collection response rate was either:

- 83.3 percent using the definition used in previous New Zealand censuses, based solely on the return of individual forms
- 87.5 percent using a new definition of response that aligns more closely with international practice and the data collection methodology we used in the 2018 Census. It is based on a minimum set of information from individual forms, household summary forms, and dwelling forms.

Given these interim results, it is clear that we will not achieve the performance target for national response rate.

More information about the PES, our coverage and response rates can be found on our website [www.stats.govt.nz](http://www.stats.govt.nz).

Our experience with the 2018 Census highlighted the need to review our performance measures for future censuses to include measures of data quality in relation to its use by customers. We will apply this learning to the measures for a 2023 Census.

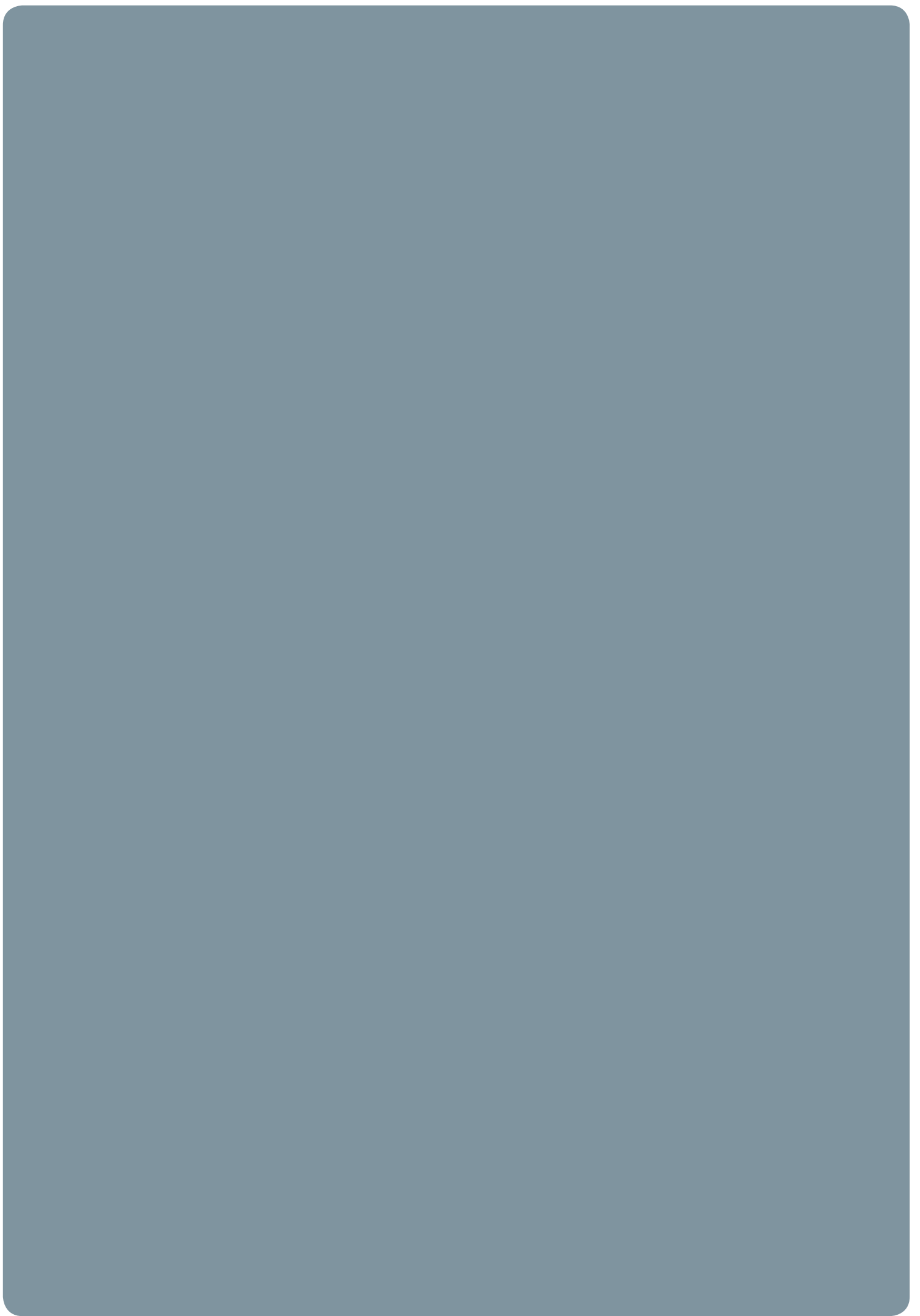
<sup>1</sup> Available from [www.stats.govt.nz/reports/report-of-the-independent-review-of-new-zealands-2018-census](http://www.stats.govt.nz/reports/report-of-the-independent-review-of-new-zealands-2018-census)

**Table 1****2018 Census – performance information<sup>1</sup>**

Assessment of performance by measure	2018/19	2018/19 target	2017/18	Variance to target <sup>1</sup>
<b>Multi-year appropriation 2018 Census of Population and Dwellings</b>				
National coverage rate for the 2018 Census of Population and Dwellings	Not yet available	High coverage	N/A	-
National response rate for the 2018 Census of Population and Dwellings	Not yet available	High response	N/A	-

1. These measures will be reported in the 2019/20 annual report after publication of the 2018 Census post-enumeration survey report.

Note: N/A – not applicable



# Ā mātou mahi rautaki matua

## Our strategic objectives



### Strategic objective 1

We are the recognised leader of the New Zealand data system

#### Introduction

This strategic objective is about ensuring that we are best placed to guide the way for organisations working within the New Zealand data system, with a key focus on the public sector. As a leader, we must partner with others to establish system policies, practices, and standards that support the safe and trusted use of data. By being transparent in our own practices, we will demonstrate by example the value of the standards we expect from others.

When this objective is achieved, we will be the recognised organisation to turn to for advice and support on how to design data stewardship frameworks and how to support best practice. Our knowledge and understanding of emerging trends and challenges for the data ecosystem will be sector-leading and widely sought.

#### Leading the data system

As the lead agency for New Zealand's data we provide leadership by facilitating and encouraging a collaborative approach across government – partnering with, supporting, and empowering agencies to grow their data capability and solve their data challenges. This means they can use the data they hold to inform good decision-making.

Our priority is to have good practice and capability embedded across the system while ensuring New Zealanders continue to have trust and confidence in the way their data is managed.

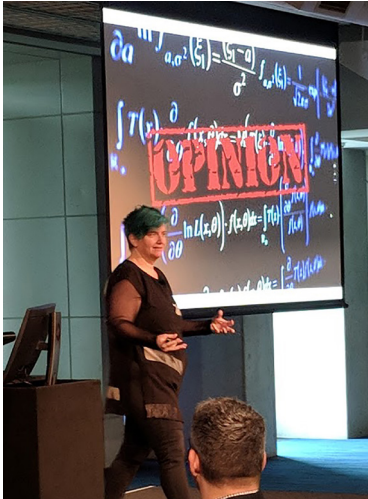


**Government Statistician Liz MacPherson at the annual session of the United Nations Statistical Commission in New York.**

#### Launching the data strategy roadmap

At the end of 2018 we delivered a data strategy roadmap that provides focus, oversight, alignment, and a shared direction for New Zealand's data. Created through a consultation process with central and local government, business, community organisations, and non-governmental organisations (NGOs), the roadmap will initially focus on the government's role in enabling a well-functioning data system.

The roadmap will reflect ongoing work by agencies, and will be used to strengthen collaboration across four focus areas to generate maximum impact:



Cathy O'Neil, author of *Weapons of Math Destruction*, speaks at Data Summit '18.



Minister of Statistics James Shaw speaks at Data Summit '18.

- **investing** in making the right data available at the right time
- **growing** data capability and supporting good practice
- **building** partnerships within and outside government
- **implementing** open and transparent practices.

Using the roadmap will help increase visibility over what data assets are held by whom and what data we need, now and in the future, to ensure we have a clear view of data gaps and a coordinated approach on how to address them.

The strategy is supported by our Data Stewardship and Operational Data Governance frameworks, both launched this year. These strategies provide a shared direction and plan for New Zealand's data system, and a common language and understanding of data stewardship and data governance. They will help organisations and government agencies develop and embed good data practices and accountabilities.

We successfully piloted the data governance framework with Environment Canterbury, and we are exploring ways to align the framework with te ao Māori.

## Hosting Data Summit '18

In September 2018 we hosted Data Summit '18, a two-day conference on informed decision-making through the ethical use of data. More than 250 data practitioners from government and the private sector discussed how

to balance the tensions between data innovation and protection, to ensure New Zealanders can have trust and confidence in the way data is used. At the summit, Cathy O'Neil, author of *Weapons of math destruction: How big data increases inequality and threatens democracy*, said that algorithms are more about power than maths, and therefore when we use algorithms, we need to ask how they are going to affect people. First Nations Information Governance Centre's Jonathan Dewar discussed their perspective on data sovereignty and the challenges they face, with Professor Tahu Kukutai presenting a New Zealand view. A summary of the event is available on [www.data.govt.nz](http://www.data.govt.nz).

## Advising on Government data investments

In 2017 the Chief Executive of Stats NZ was designated as the Government Chief Data Steward. Ministers and government officials have sought the Chief Data Steward's view on government investment in data. We created the Data Investment Framework to guide how investment in the data system could deliver government priorities, while also building the foundations required to ensure New Zealand's data system can meet future needs. The Government Chief Data Steward is now working with both the Government Chief Digital Officer and Treasury to develop an approach for providing advice for Budget 2020.

## Legislative review

A review of the Statistics Act 1975 is underway. The review aims to modernise the law governing the production of official statistics, support increased use and sharing of quality government data, and ensure the right safeguards and protections are in place (for example, to protect personal information and maintain confidentiality). Minister of Statistics Hon James Shaw launched the public consultation on the review at Data Summit '18.

More than 600 people had their say – through formal submissions and a short poll – during public consultation which closed in November 2018. Overall, the poll indicated:

- 96 percent of respondents considered it important that New Zealand have high quality official statistics that can be relied on
- 92 percent of respondents thought it important that government-held data can be safely shared and used for research and analysis to benefit New Zealanders.

Feedback will inform the development of policy that may be put into law as new data and statistics legislation. There will be further opportunity for public comment during the Select Committee process once a bill is introduced to the House.

## Data ethics advisory group

A data ethics advisory group has been convened to help maximise the opportunities and benefits from new and emerging uses of data, while managing potential risk. Established in response to a recommendation in the *Algorithm assessment* report, the group will enable agencies to test ideas, policy, and proposals related to new and emerging uses of data.

Expressions of interest were sought from people with relevant expertise, who will represent one or more of the following areas:

- privacy and human rights law
- ethics
- innovative data use and data analytics
- te ao Māori
- technology
- public policy and government interests in the use of data.

We are working with the Minister of Statistics to ensure the group has the right level of visibility to provide assurance to New Zealanders that data is being used in a safe and ethical way.

The group will meet once every 6-8 weeks. The group's function and membership will be reviewed after 12 months.

## Building data capability across government

Here were the most significant initiatives we worked on this year to support data capability building across government.

- **Data stocktakes** – used in several central government and local government agencies. The resulting data inventories (to be published on [www.data.govt.nz](http://www.data.govt.nz)) will provide transparency on the data held by agencies. The inventories will also help agencies to better manage their data assets and indicate how much more data could potentially be released as open data.
- **Data visualisation workshops** – we subsidised training sessions in Auckland, Wellington, Christchurch, and Dunedin to showcase new methods of presenting evidence for decision-making, and for telling an engaging and compelling story.











Paul Clarke, Senior Advisor – Te Tohu Rautaki – Angitu Māori, features in a video about partnering with Māori.

## Open data

A total of 7,216 open datasets are now available on [www.data.govt.nz](http://www.data.govt.nz), an increase of 1,387 in the last 12 months. More than 55 percent of these datasets come from central government, while a further 32 percent from local government. The remainder come from district health boards and Crown research institutes.

## Government use of algorithms

We continued to work with the Government Chief Digital Officer in leading a cross-government programme to increase the transparency and accountability of how government uses algorithms. Algorithms are the automated decision-making processes used by computer programs to identify patterns in data.

This builds on our work with the Privacy Commissioner to develop principles that support the safe and effective use of data and analytics.

The *Algorithm assessment report*, published in October 2018 on [www.data.govt.nz](http://www.data.govt.nz), reviewed existing algorithms and their uses across government. The report found that the development of algorithms by participating government agencies is well-aligned to the delivery of clear public benefit in a range of circumstances. It said that it will continue to be important to preserve human oversight and ensure the views of key stakeholders are given consideration.

The report's key recommendations included:

- publishing information to explain how algorithms inform decisions affecting people
- embedding a te ao Māori perspective into the development and use of algorithms
- establishing a group of independent experts to advise and guide agencies.

We are working on a formal Government response to the report's recommendations and are engaging across government about the next steps.

## Statistical standard for sexual identity and a framework for sexual orientation

In February 2019, we introduced a statistical standard for sexual identity and a statistical framework for sexual orientation. We worked hard to meet what we know is a strong demand to record and present data on sexual identity. The introduction of the standard and the framework is an important step to ensuring all New Zealanders are represented in official statistics.

The new standard provides guidelines and classification criteria for collecting and reporting information on sexual identity. The statistical framework for sexual orientation represents an agreed way of thinking about the topic of sexual orientation. It describes the scope and components of sexual orientation and provides definitions for aspects related to the topic.

In April 2018, we ran a public consultation on the proposed standard and framework. The consultation attracted over 900 submissions, underlining the importance of this work.

The aim of this work is to make future collections more consistent and comparable. This will lead to practical benefits. For example, we know that young people belonging to sexual minorities are more likely to experience bullying and to have limited access to mental health care. To address these issues, policymakers need access to high-quality, timely, and accurate data.



**Stats NZ's waiata group performs at the website launch for Ngā Tūtohu Aotearoa – Indicators Aotearoa New Zealand.**

In June 2019, for the first time, we released information on the wellbeing of people of different sexual identities as part of *Wellbeing statistics 2018* – another important step towards better reflecting New Zealand's diversity in our data.

The 2019 household economic survey included a question on sexual identity, which was developed together with the statistical standard for sexual identity. The standard will be implemented across all future household surveys, including the 2020 general social survey.

## Ngā Tūtohu Aotearoa – Indicators Aotearoa New Zealand

In June 2019, we released Ngā Tūtohu Aotearoa – Indicators Aotearoa New Zealand.

Ngā Tūtohu Aotearoa is a suite of social, environmental, and economic indicators showing how well we are doing as a country. They will help provide an independent and transparent picture of wellbeing and sustainable development in New Zealand

To select the indicators, it was important to have New Zealanders participate and not be driven by the availability of data. Instead, we took a wider approach

in looking at what matters most to New Zealanders. We heard and considered a range of perspectives through our consultation and peer review processes, and worked with community groups, independent experts, international peers, and the government sector.

The first set of indicators includes gaps in data, and limitations in the ability to break it down to levels meaningful to different communities. However, knowing where the data gaps are helped us understand where we need to focus our efforts.

Ngā Tūtohu Aotearoa will be the data source that underpins government frameworks, such as Treasury's Living Standards Framework and Dashboard. It will support cross-government initiatives and New Zealand's international reporting requirements, such as the United Nations Sustainable Development Goals.

This is the first step on a journey. Our ongoing development of the indicators includes partnering with Māori to introduce te ao Māori perspectives. We want the indicators to be inclusive across diverse perspectives, and throughout the next year we will work with stakeholders to understand the data gaps and how they can be addressed.



## Strategic objective 3

We revolutionise our data, statistics, and insights to anticipate customer needs

### Introduction

This strategic objective is about achieving a radical difference in how we shape and deliver our services and products. This requires us to work on expanding the range of data sources we use, mainly by developing new digital channels. We must also focus on the accessibility and relevance of the products we deliver in order to remain relevant to our customers' evolving needs.

When we realise this objective, we will be at the forefront of change in delivering products that meet the data needs of people and organisations in New Zealand. This will be achieved by developing our knowledge and understanding of emerging trends and challenges for our customers. The products we deliver will be easily accessed, understood, and used by our customers.

### Integrated data in action

The Integrated Data Infrastructure (IDI) is a large database containing de-identified information about people and households. IDI helps researchers gain evidence-informed insights, measure the effectiveness of government initiatives and services, and answer important questions about New Zealanders' lives. Our privacy, confidentiality, and security requirements balance the benefits these insights can bring while keeping data safe and protecting privacy.

The insights below, among others, generated public interest in 2018/19. They are from research using our integrated data.

### Equity index

The Ministry of Education (MoE) is using data from the IDI to develop an equity index. The index will use a large selection of socio-economic factors to look at the full combination of a child's circumstances. This allows the index to provide more refined information about the distribution of socio-economic disadvantage across the New Zealand schooling system and how it affects students, schools, and communities. The index will help us understand how the system is working for children from low socio-economic backgrounds. MoE is still developing the index and assessing its potential uses for the future.

### Childhood obesity

Using data from the IDI, a study showed childhood obesity rates have declined in most of New Zealand, but have remained high in some regions. Obesity rates vary between regions, with about half the differences due to the socio-economic, rural, and ethnic composition of a region. The study, part of A Better Start – National Science Challenge, found that the community in which a child lives is a strong predictor of their obesity risk.

Researchers were able to link child obesity information from the Ministry of Health's B4 School Check with other government data to obtain information about community, deprivation, and ethnicity. IDI data makes it possible to monitor trends in obesity over time in New Zealand, and highlight regions that might benefit from interventions to reduce obesity.

## Pacific migrant settlement experience

Motu researchers used the longitudinal immigration survey and the IDI to examine the settlement experience of Pacific migrants. They found that Pacific migrants, although having a similar likelihood of being employed compared with non-Pacific migrants of the same sex, earned considerably lower wages. Their research showed that a limited proficiency in English and low education levels seem to trap Pacific migrants in a cycle of low-paid work.

## Multi-use vaccines

This retrospective study by the University of Auckland aimed to estimate the effectiveness of the New Zealand meningococcal B vaccine, MeNZB, against gonorrhoea-associated hospitalisation. The data suggests vaccination with MeNZB significantly reduced the rate of hospitalisation from gonorrhoea, which supports previous research. Administrative datasets of demographics, customs, hospitalisation, education, income tax, and immunisation were linked using the IDI.

## Internal migration flows

This project is part of the Capturing the Diversity Dividend of Aotearoa/New Zealand research programme funded by the Ministry of Business, Innovation and Employment. The project uses data from the IDI to research New Zealand's age- and ethnicity-specific internal migration patterns, and how these patterns can be used to project future trends.

## Innovation in statistical products

Throughout the year we made significant innovations and improvements to ensure our statistical products continue to meet customer needs. The following examples highlight how we are adding to our core statistics or how we are changing the approaches for compiling and producing relevant statistics.

### Measuring child poverty

The Child Poverty Reduction Act 2018 aims for a significant and sustained reduction in child poverty in New Zealand. The Act requires government to set 3- and 10-year targets on four primary measures, and the Government Statistician to report annually on 10 measures of child poverty.

Statistics on the economic wellbeing of New Zealanders, including children, are produced from household economic survey (HES) data. Before 2018/19, HES surveyed a random sample of between 3,000 and 5,500 households, one-third of them with dependent children. The survey provided valuable information such as overall distribution of household income and material wellbeing, and comparisons between groups. However, because of its small sample size, HES did not provide robust results on short-term changes, especially for year-on-year comparisons where more precision was required.

In 2018/19 we improved the data source for measuring child poverty. The improvements included increasing the sample size to 20,000 households, better targeting of low-income and high-deprivation households, and using income data from administration sources. The first child poverty results using these improvements will be available in early 2020.

In April 2019, we released child poverty statistics based on HES 2017/18. We partly addressed the limitations in the survey by using different data sources and methodologies. By using the IDI, we were able to increase the effective sample size by combining income data from administrative sources with data from HES and the household labour force survey. This ensured the child poverty estimates released for 2017/18 are

robust enough to use as baselines for setting 3- and 10-year targets.

It was not possible to provide further breakdowns for the estimates published in that release. We plan to publish estimates by region and ethnicity in early 2020 based on results from the larger sample of 20,000 households.

### **New Zealand trade dashboard**

We introduced the New Zealand trade dashboard, an online tool that makes it easier to see what New Zealand buys and sells internationally. It shows export and import data for goods and services by country and commodity type, and brings this information together from various Stats NZ sources. Through the tool users can see and compare:

- key trade data by country, country group, or customised country groups
- key trade data about goods and services by product type
- two-way trade by country.

The dashboard includes an interactive map of the world – just click on any country from Afghanistan to Zimbabwe to see how much New Zealand trades with that country. The dashboard allows users to explore our trade data in new ways and make the most of this rich source of information about the economy. We worked with the Ministry of Foreign Affairs and Trade on replacing an obsolete product – Global New Zealand – with the dashboard. As a result, we are making more information available, in a more accessible format, to a wider range of users.

### **Accommodation and the sharing economy in New Zealand**

In June 2019 we released a research paper providing an experimental view of the accommodation-sharing sector and its contribution to the economy. This is the first time this has been done in New Zealand. The paper was part of our contribution to international statistical discussions on measuring the 'digital economy'.

Digitisation has affected both New Zealand's accommodation sector and what is known as the 'sharing' economy. 'Sharing' economy, also known as platform-enabled ecommerce, is the exchange of goods and services between consumers through a digital application.

The research was as much about testing how such an estimate could be developed as it was about quantifying the size of the accommodation sharing sector. As the work involved assumptions and models, and because results had a large estimated range of between \$400 million–\$700 million for the year ended March 2018, the nature of this work is experimental. However, it was valuable sharing this research with customers to provide further insight into this part of the economy.

### **Measuring the distribution of household income and outlays**

The household sector accounts provide information on annual household incomes, outlays (expenditure), and savings. However, they give combined measures only, and depict conditions for an 'average' household. Useful as they are, these statistics show a limited story about living standards. They say little about the differences between households or how available resources are distributed. This information is often critical for designing economic and social policies.

Stats NZ has been part of an international effort to develop a new range of household distributional statistics consistent with national accounts concepts and totals using existing microdata sources.

In August 2018, we released experimental data on household incomes, outlays and savings, grouping households by income, main source of income, and household-type for the March years 2007, 2010, 2013, and 2016.

The data showed:

- disposable income of households in the highest income group was about six times that of households in the lowest group
- households in the top three income groups had been dissaving throughout 2007–16, with almost all savings attributable to households belonging to the top income group.

We will continue to work on updating the series and refining the methods, with the intention of releasing the series as official statistics.

### **Ending statistical reliance on passenger departure cards**

We worked with the Ministry of Business, Innovation and Employment and NZ Customs to remove airport departure cards by removing the statistical reliance on them.

From November 2018, people leaving New Zealand no longer needed to complete departure cards, saving 7 million travellers a combined 100,000 hours every year.

We are now using a new way of measuring migration called the outcome-based approach which is based on actual movements of travellers rather than stated intentions. This gives a more robust and accurate measure of migrant flows in and out of New Zealand. It links all arrivals and departures using passport data to create travel histories for passengers, which in turn are used to classify movements as short-term or long-term.

The Australian Bureau of Statistics adopted the outcome-based approach several years ago, and we looked to move in the same direction. The outcomes measure has flow-on benefits to population estimates and their uses, especially where accurate estimates of migration by age group or by subnational area are important.

The new measure has a lag of 17 months to generate final migration estimates. This is because the underlying '12/16-month rule' classifies travellers according to whether they spend 12 months (or more) of the following 16 months in New Zealand or overseas. We recognised that such a delay would be unacceptable to many customers, so through 2018 we developed a cutting-edge machine-learning statistical model, which provides a provisional estimate of migration.

Provisional estimates of migration become more certain over time, because with each additional month of data the model has more information about the border crossings it is trying to classify. Within five to six months of the reference period, the model can classify over 95 percent of the 14 million annual border crossings as either short-term or long-term. The model will evolve over time, with some refinements and as it learns more from the data.

### **Improved approach to measuring rents**

We collaborated with the Ministry of Business, Innovation and Employment (MBIE) to look for a better way of measuring the change in rental prices. We now measure residential rents using rental bond data. This has two benefits: it reuses administrative data which has already been collected, and it lets us create a more accurate measure of rent in overall inflation.

Until March 2019, we measured rent prices by sending postal surveys to a sample of landlords. This was the best method available then, but now it is possible to use more complete data. Since MBIE manage the bonds held for rental properties, they can measure regional average prices based on every tenancy, not just a sample of them.

To make use of MBIE's data we needed to modernise our approach. Using the latest research on inflation measurement, we developed a new method to track rent price inflation using the administrative bond database. This means we no longer needed to run our own survey of landlords. The approach is not only more efficient but also creates a bigger dataset.

The new measure is so easy to create that we can produce it every month, not every quarter like we used to with the postal survey. The new rental price indexes will give decision-makers in government and business a more up-to-date picture of how inflation is tracking.

### Housing quality framework

The Housing Quality Conceptual Framework, which we released in June 2019, gives a broad understanding of what is meant by 'housing quality'. It will be useful across the New Zealand data system and for the Ministry of Housing and Urban Development when they develop improved housing-quality statistics.

The framework defines housing quality as the degree to which housing provides a healthy, safe, secure, sustainable, and resilient environment for individuals, families, and whānau to live in and to participate within their kāinga, natural environment, and communities. It brings together and defines four interrelated elements of housing quality:

- housing habitability
- housing functionality
- environmental sustainability
- social and cultural sustainability.

Incorporating cultural values and community connections alongside physical considerations like design and construction, the framework is more people-centred, creating a more complete picture of what 'housing quality' really means to New Zealanders.

### Digital Nation Domain Plan

In collaboration with MBIE, we produced the *Digital Nation Domain Plan* to help us understand and respond to the impacts of digital transformation. The plan, released in May 2018, outlines the what, when, and how of measuring digital development.

The domain plan looks at how we can improve the way information on our digital industries is collected and coordinated across the data system. This will help us build a better understanding of the way digital technologies are affecting New Zealanders. The plan sets some strategic priorities for data relating to the digital domain, and highlights four key areas for action:

- digital inclusion
- defining and valuing the digital sector
- digital security
- digital technologies and their impact.

We are now looking for new ways to partner with others and explore alternative data sources to identify how key data needs can be met.



## Strategic objective 4

### We are reliable and push boundaries

#### Introduction

This strategic objective is about developing a culture where everyone at Stats NZ is conscious of where to apply caution and when to experiment and drive for radically different opportunities and solutions. This requires our leaders to empower and coach our people to make the most of their skills and experiences.

When this objective is achieved, our core service delivery will be high quality, timely, and accurate. We will focus on maintaining this reliability as we search for opportunities to improve and expand our services, to provide greater value to our customers.

Our focus on developing a flexible work place where all our people with their diverse and varied characteristics, skills and experiences can flourish and contribute positively to our organisation is described in Supporting our People section (pp 12-13). In addition to these activities we also placed emphasis in 2018/19 on developing our culture, leadership and accountability and on establishing a future-focused Statistical Job Family.

#### Culture, leadership, and accountability

Investment in the capability of our people leaders continues to be a priority. We worked to further embed our adopted Coaching for Performance model that replaced our more traditional performance management process. This model contributes to creating a positive, deliberate change in our people's working lives. It is about managers helping people to unleash their own impact at work.

#### Statistical, Data, and Analytics job family

Our Statistical Job Family was no longer fit for purpose and did not allow us to respond to increasingly complex customer demands in our expanding role as leader of the government data system.

The review of the job family began in 2016, culminating in the development of a new Statistical, Data, and Analytics (SDA) job family, which would prepare us for the future while reflecting changes in our work as we modernise our systems and processes. Our new position descriptions better reflect the skills and capabilities we need. Alongside regular workforce planning, the new job family will enable our leaders to foster existing talent, provide clear career pathways for our people, and enable us to recruit more strategically for the skillsets we need now and in the future.

In mid-2018 we implemented the new SDA job family, which was a significant change (it affected about one-third of the organisation). Throughout the implementation process, our senior leaders consulted with the Public Service Association and ensured the implementation minimised disruption, was people-centred and fair, and maximised opportunities for staff. We will continue to embed the SDA, including skills and capability development, through 2019/20.

The roll out of 'r' code e-learning modules for our statistical teams, as described on page 19, is a further example of our continued focus on empowering our technical experts.

## ► Impacts of climate change

Relatively small changes in our climate can have big effects on our ecosystems.

### CHANGES ARE ALREADY AFFECTING NEW ZEALAND

#### Warming land

**+ 1°C**

Average temperature increase, 1909–2016



#### Warming sea

**+ 0.7°C**

Average sea-surface temperature increase around New Zealand, 1909–2009



#### Rising sea levels

**+ 14–22 cm**

Varying sea-level rise around New Zealand, 1916–2016



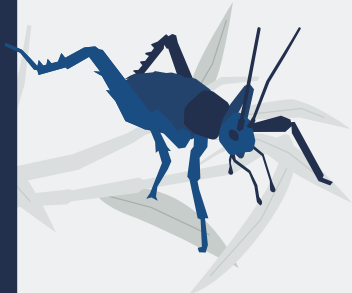
#### Increasing ocean acidity

**+ 7%**

Increase in acidity off Otago coast, 1998–2016



Climate change affects our environment directly and intensifies the effects of other pressures.

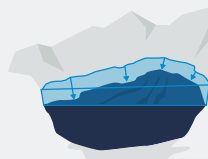


#### Changing distribution

Warmer temperatures played a role in shifting the range of two wētā species in Taranaki.

#### Melting glaciers

Glaciers in Southern Alps decreased 25% in ice volume, 1977–2016.



#### Drought

The 2012–13 drought was one of the most extreme in recent history and affected the entire North Island and the west coast of the South Island. Climate change made it more likely to happen.



#### Shifting seasons

Hapū and whānau-based fishers observe changes in the seasons, which affect harvest times.



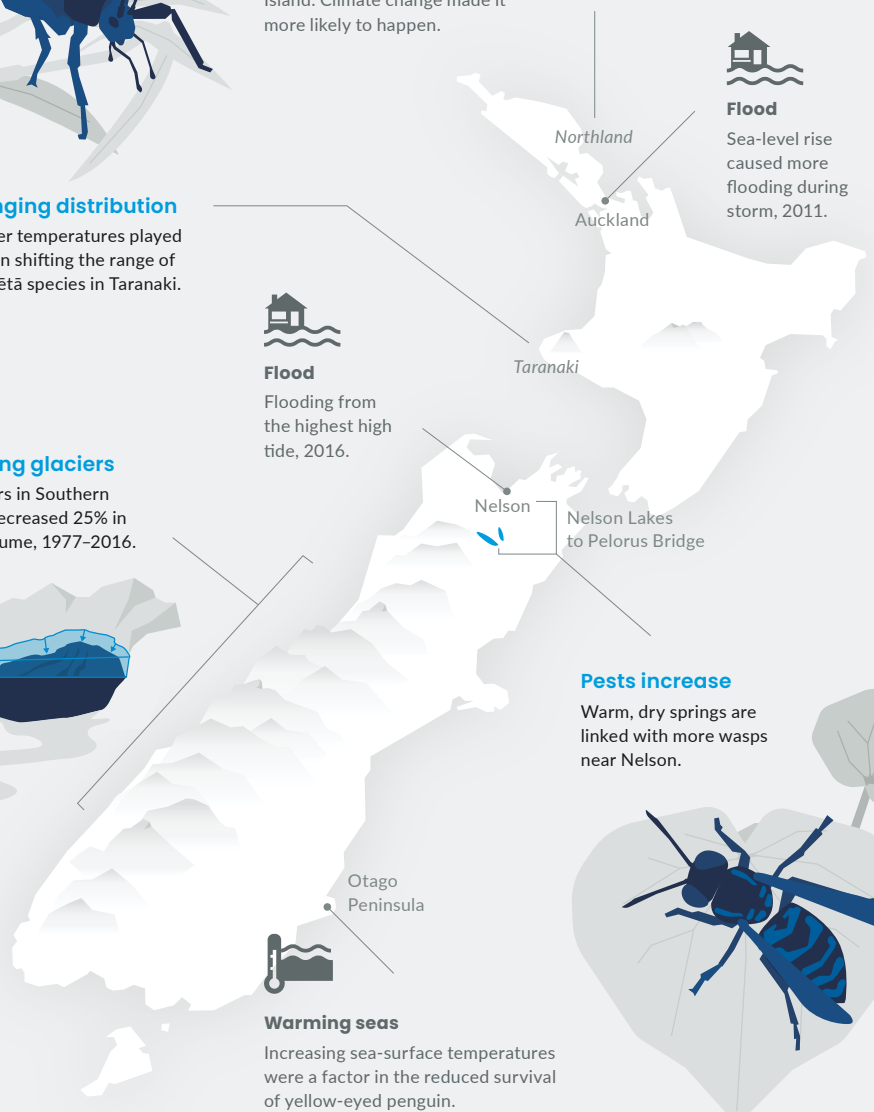
#### Flood

Sea-level rise caused more flooding during storm, 2011.



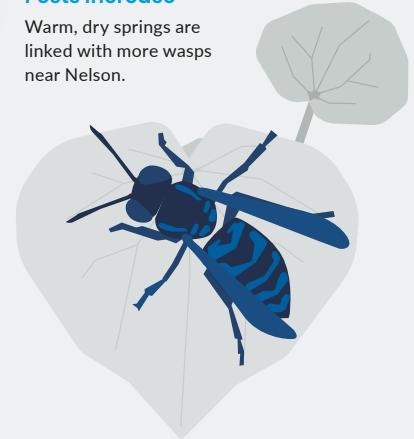
#### Flood

Flooding from the highest high tide, 2016.



#### Pests increase

Warm, dry springs are linked with more wasps near Nelson.



#### Warming seas

Increasing sea-surface temperatures were a factor in the reduced survival of yellow-eyed penguin.

Note: Data for this illustration is from Mattern et al (2017) and this report.

## ► Urban pollution

Urban areas are sources of pollutants that affect ecosystems and our health. The type and amount can vary from place to place and over time.

### SOURCES OF URBAN POLLUTION

#### Home heating

Burning wood and coal for home heating during cooler months is the main source of particulate matter in the air in our cities and towns. Burning treated timber is the primary source of arsenic in urban air.

Air particulate matter

Air pollution

#### Transport

Vehicle emissions contribute to poor air quality. Abrasion of road surfaces, tyres, and brake pads release small particles, including heavy metals into the environment. Petroleum spills and leaks contaminate land, soil, and water.

Air particulate matter  
Gaseous pollutants  
Heavy metals

#### Industry and manufacturing

Pollutants from industry vary depending on the type of industry. Burning fuels for processes or electricity pollutes the air while storage or disposal of waste can contaminate soil and waterways.

Air particulate matter  
Gaseous pollutants  
Heavy metals

#### Wastewater and stormwater

Wastewater and stormwater enter urban streams through leaky pipes, illegal connections, and consented overflows during storms. Rainwater carries pollutants through the stormwater system into the waterways.

Nutrients  
Pathogens  
Sediment  
Heavy metals



Soil pollution

Water pollution

Pesticides, pharmaceuticals, personal care products, and other substances are not all removed by treatment plants.

#### EFFECTS ON CULTURAL VALUES

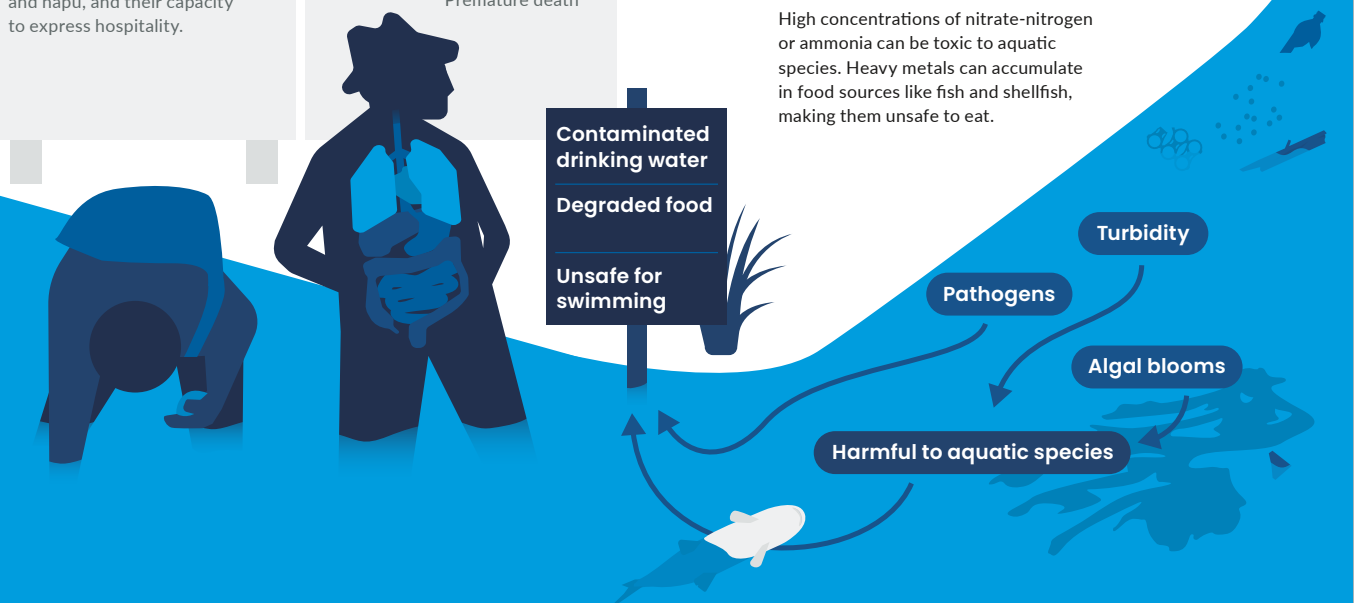
Degraded mahinga kai and kaimoana limit traditional food for daily consumption and significant events, reducing the mana of individuals, whānau, and hapū, and their capacity to express hospitality.

#### EFFECTS ON HUMAN HEALTH

Asthma	Strokes
Coughing	Diabetes
Shortness of breath	Gastro-intestinal illness
	Premature death

#### EFFECTS ON AQUATIC ECOSYSTEMS

High concentrations of nitrate-nitrogen or ammonia can be toxic to aquatic species. Heavy metals can accumulate in food sources like fish and shellfish, making them unsafe to eat.



Contaminated drinking water

Degraded food

Unsafe for swimming

Turbidity

Pathogens

Algal blooms

Harmful to aquatic species

## Environmental reporting

In April 2019, Stats NZ and the Ministry for the Environment released *Environment Aotearoa 2019* – the first 'synthesis' report produced under the Environmental Reporting Act 2015. This collaborative report is an example of how we are shifting the way we report on different topics to reflect complexity and a system-wide perspective. The report used nine issues to tell an interconnected story about our environment. This thematic, system-level approach resulted in a true synthesis report and a platform for honest conversations and informed decisions about the future of our environment.

The report drew on 60 environmental indicators, many of which had proven to be reliable measures in previous domain reports. We revised or updated 17 indicators and one of them – nitrogen and phosphorus in fertilisers – appeared for the first time. The data and the indicators that sit behind the report provide a crucial measure of accuracy and credibility.

The strength of our environmental reporting system is putting robust, independent, rigorously checked information about the environment into the hands of decision-makers – so they can concentrate on what they need to do about it.

The report also acknowledged the need to build and expand our knowledge of the environment. We have considerable knowledge in some areas but understanding our environment as a whole – as a system – is a much bigger challenge. By continuing to improve environmental reporting, we will become better equipped to understand the effects of our actions on the environment.

*Environment Aotearoa 2019* is the latest in the environment reporting series that covers the environmental domains of air, climate and atmosphere, fresh water, land, and marine. The previous report, *Our air 2018*, was released in October 2018 and showed that air quality in New Zealand is generally good.

## Changes to the general social survey

Every two years, the general social survey (GSS) takes a snapshot of social wellbeing in New Zealand. It provides information on how New Zealanders are faring across multiple aspects, such as life satisfaction, health, social connectedness, culture and identity, and overall subjective wellbeing.

To reflect shifting needs of customers and the issues which New Zealanders are interested in better understanding, we collaborated with different organisations to extend the topics covered in the 2018 GSS. The result of this was the breadth and variety of stories and products produced.

The 2018 GSS incorporated a supplement on housing and physical environment. This included housing affordability, living behaviours, housing quality and suitability, access to key public facilities, and New Zealanders' perceptions of their natural environment.

We partnered with MBIE and BRANZ to carry out physical inspections of over 800 homes taken from the GSS sample and provide objective measures of the condition of housing in New Zealand. Combined with GSS data, this will increase our understanding of the country's housing quality and the impact this has on wellbeing.

A highlight of the 2018 GSS was the breadth and variety of stories and products produced. For the first time, the survey also included a question on sexual identity, which is an important step towards better reflecting the diversity of New Zealanders. Collecting this information allowed us to understand the different wellbeing outcomes of people with different sexual identities.

We have been thinking of ways to do things differently, and we combined data from the 2018 GSS and the survey of working life to look into the link between job satisfaction and wellbeing. We also used GSS data to measure the increase in the use of reusable shopping bags, following the Government's announcement of a plastic bag ban.

# Renting vs owning in NZ



**Around 1 in 3 Kiwi households rent**



## Dwelling suitability

Rented | Owned

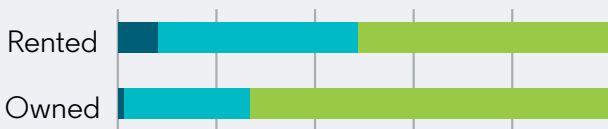


Renters rate their dwelling suitability lower

## Feeling the chill

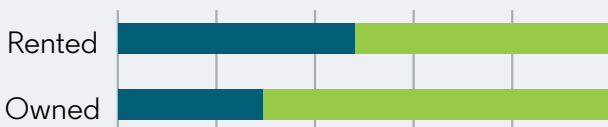
### Damp:

always / sometimes / not damp



### Mould:

has mould / doesn't have mould



Households in rented accommodation are more likely to live with damp, cold and mould than those living in their own home.

## Can you see your breath inside?



**32%** of renters and  
**13%** of owners can

We will continue to analyse GSS data and partner and collaborate with other organisations to produce further insights. In 2020 we will extend survey content to further standardise the data we collect.

## A new look at population

The work of Data Ventures is one of the many ways Stats NZ is thinking differently to unlock the potential of New Zealand's data.

The Data Ventures team worked on a unique way to identify the population density of New Zealand while maintaining the privacy of the population.

Data Ventures is a data trust, which means it sits in the middle of the data chain. Data Ventures gets datasets from other organisations, turns those datasets into useful products, and sells those products – mainly to government. This led to Data Ventures' first product, Population Density, an online tool that captures the number of people who work, live, and play in a given area at a given time.

In a world first, Data Ventures worked with different mobile phone providers and pulled together their anonymised aggregated datasets. The providers gave Data Ventures access to the total number of mobile devices by suburb in New Zealand, across different time periods. Population Density can model the number of people in an area for emergency planning, identify the effects visiting populations have on an area, plan how roads, sewerage pipes, or even bus routes can be used, and see how population counts change over a season, month, or year.

## Environmental-economic accounts 2019

Our *Environmental-economic accounts 2019* report was released in June. The 2019 report focused on climate change and the transition to a low-emissions economy: the pressures of emissions on the atmosphere, the likely impacts of climate change on natural resources, and the extent of economic responses to reduce emissions. This thematic approach illustrates how environmental-economic accounts can be integrated and used to inform a particular issue.

The System of Environmental-Economic Accounting, on which the accounts are based, is an internationally accepted statistical standard that specifies how environmental and economic information can be integrated coherently to form a more complete picture of New Zealand's performance in each area.

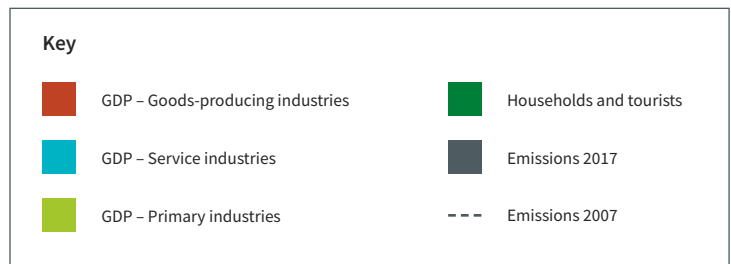
Bringing together environmental, economic, and social data creates powerful insights, which in this case enriches our understanding of New Zealand's emissions problem. Among the key findings of the 2019 report is that total emissions decreased just 0.9 percent over the 2007–17 period. Household emissions of greenhouse gases increased 19.3 percent, while industry emissions decreased 2.9 percent.

The report takes an in-depth look at how different industries are performing, contrasting their contribution to gross domestic product with their contribution to greenhouse gas emissions. This concept was visualised in an accompanying infographic [see page 36].

# Emissions and the economy

Greenhouse gases emissions are a pressure on the state of the atmosphere, affecting New Zealand's climate, economy, and society. Emissions are produced by all industries in the economy, through economic activity, and by households, through transportation and other activities. The System of Environmental-Economic Accounting links environmental, economic, and social data, to give a more complete picture of New Zealand's economic and environmental performance. This infographic shows how emissions produced by industries across the economy relate to the economic activity undertaken by those same industries (as measured by GDP). Also shown is the emissions produced by New Zealand households and visitors in relation to overall numbers.

For more information see the full report at [stats.govt.nz/information-releases/environmental-economic-accounts-2019-data-to-2017](https://stats.govt.nz/information-releases/environmental-economic-accounts-2019-data-to-2017)



## About the data

Industry and household emissions are based on the production of direct and gross emissions produced by an industry or household. Data are compiled according to the System of Environmental-Economic Accounting framework. Emissions are measured as kilotonnes(kt) of carbon dioxide equivalents which are the emissions of greenhouse gases weighted by their 100-year global warming potential. Other gases include nitrous oxide and fluorinated gases. Emissions data are to the year December 2017. Industries are defined by the Australia and New Zealand Standard Industrial Classification 2006 (ANZSIC06), and households on an economic residence basis. Gross domestic product is in current prices and to the year March 2017. Other manufacturing includes: Textile, leather, clothing, and footwear manufacturing; Wood and paper products manufacturing and printing; Non-metallic mineral product manufacturing; Transport equipment, machinery and equipment manufacturing; Furniture and other manufacturing. See *Environmental-economic accounts: 2019 for more detail*.



## Strategic objective 5

### We are a sustainable and efficient organisation

#### Introduction

This strategic objective is about transforming our business model to one that is data-driven and that provides a transparent understanding of where our costs and efforts lie. This will require adopting a flexible operating model where we can easily shift our focus to meet customer needs.

When this objective is achieved, our processes will be optimised to make the most efficient use of technology and free up our people to add value and innovate. Our people will have the flexibility and support to focus on adding value.

#### Capability bid

For some time, we have faced significant rising rental and technology costs, cumulative cost pressures, and increased demand on the organisation reflecting the scarcity of data and analytics capability and capacity. Up until 2019, we continued to use unsustainable funding from fiscally neutral sources (insurance proceeds and capex / opex swaps) to fund our current work programme and meet the needs of our customers.

Without additional funding we would have needed to significantly reduce products and services, including stopping major products, reducing stewardship activities, and reducing staffing by up to 20 percent. As part of Budget 2019, we submitted a capability bid seeking to put us in a sustainable position to produce key statistics and undertake our data leadership role. Budget 2019 appropriated further multi-year funding for the Official Statistics Multi-Category Appropriation. This included an increase to baseline funding equal to \$136.5 million over four years to meet cost pressures.

The Budget 2019 funding has ensured that we can continue to provide data and statistical information services. This includes maintaining the production of official statistics to deliver on priority needs, including the expanded household economic survey programme for measuring child poverty, and the stewardship of government data and statistical activities to fulfil Stats NZ's data stewardship role.

#### Quality of government data

Data content standards establish consistent ways for describing and recording data. This consistency is vital to ensuring data is easy to collect, share, integrate, manage, analyse, and reuse. A group comprising standards development experts from across government gave feedback on three data content standards, which are now in the approval process. We want to ensure the quality of government data continuously improves so it becomes a valuable enduring resource for New Zealand.

Achieving this will drive consistency of practice across the organisation, provide clarity for our people and give additional confidence to our customers.

#### Accommodation changes

Over the past year we have made progress on ensuring we have the right environment to support our work practices and culture.

Our vision of a flexible and agile workforce will be supported by a physical environment that facilitates collaboration, flexibility and transparency.

With support from the Government Property Group (GPG), we went to the property market to find a new home for our Wellington staff from April 2021. The procurement process

led us to select 8 Willis Street as our preferred site. We worked with GPG to identify agencies potentially interested in co-locating, with the idea appealing to the Ministry for the Environment (MfE). This resulted in Stats NZ and MfE negotiating a lease on the entire building. Our negotiations were supported by independent legal, structural, engineering, architectural, and property valuation experts.

In April 2019 our Auckland operations relocated a few hundred metres up the road from 48 to 80 Greys Avenue. The new building provides a fit-for-purpose working environment for our Auckland teams.

Our Christchurch teams continue to enjoy sharing with seven other government agencies in our Christchurch premises.

## Flexibility and resiliency through technology

This year we completed the Information Technology as a Service (ITaaS) programme. Moving to a modern delivery model allows for greater transparency, mobility, and flexibility for our people and supports our business continuity and resiliency.

### Data centres and infrastructure

All IT services are now operating out of cloud environments, with two onshore data centres and one in Sydney. Given the volatile nature of New Zealand's physical environment, this is essential for resilience.

To ensure these centres are always available and are resilient, we have production and disaster recovery servers operating out of geographically separated Infrastructure as a Service (IaaS) data centres:

- production servers will operate out of an Auckland-based centre
- disaster recovery servers will operate out of a Wellington-based centre.

We also located production services in a separate physical location from ICT staff. This eliminates the risks associated when staff and the systems they manage are in the same location, significantly reducing our risk in case of disaster.

### Network and telecommunications

We migrated all network and telecommunication services to Telecommunications as a Service (TaaS). Our people now have unified communications, with email, messaging, and voice capabilities available across mobile and desktop platforms. This means staff can do many of their work activities while at home or on the move.

All Stats NZ buildings now operate a wireless-as-a-primary-network capability, enabling mobility for staff and shared occupancy support. Employees now have more choice about where and how they do their work, with improved network connectivity when travelling within and outside our buildings.

### Desktop and collaboration

We migrated all desktop services to Desktop as a Service, and staff can work either via a mobile device or a virtual desktop from any device, in any location.

Several collaboration tools are also available for staff, providing ways for our people to work together from different locations, reducing the need for co-location and travel.

### IT service management

We updated internal and vendor management capabilities, processes, and practices to ensure we gain the full value of ITaaS. This includes managing costs well, ensuring alignment to business outcomes, and allowing a culture of continuous improvement.

### Independent security oversight

The use of all-of-government common capabilities has enabled us to leverage the increased independent security oversight provided by the Government Chief Digital Officer, through their certification programme. This provides additional assurance that the necessary security controls are in place to protect data. By applying these assurance activities for the all-of-government collective good, we gain insights into our security that would be financially unsustainable if we were to deliver it alone.

# Ngā inenga whakatutukinga ki ngā rironga pūtea

## Appropriation performance measures

This section reports on the appropriation performance measures of Stats NZ for the year ended 30 June 2019<sup>1</sup>.

### Data Futures Partnership performance measure

#### Appropriation

This appropriation is limited to enabling the activities of the Data Futures Partnership. It is intended to achieve the continued support of the independent, cross-sector Data Futures Partnership to ensure New Zealand's data is used effectively to create social and economic value for all New Zealanders. In 2017, Ministers decided that the initiative should be discontinued. The partnership ended in 2018/19.

#### How we measure our success

The Data Futures Partnership finalised their *Guidelines for data governance* and *Trusted Data Use Guidelines*, which have been delivered to the satisfaction of responsible Ministers.

**Table 2**

#### Data Futures Partnership – performance information

Assessment of performance by measure	2018/19 result	2018/19 target	2017/18 result	Variance to target
<b>Appropriation enabling the activities of the Data Futures Partnership</b>				
The work plan of the Data Futures Partnership is delivered to the satisfaction of responsible Ministers	Achieved	Achieved	Not measured 2017/18	No variance

1. 2018 Census of population and dwellings multi-year appropriation measures are included in the 2018 Census section on pages 15–16.

## Official statistics multi-category appropriation performance measures

The overarching purpose of this appropriation is to ensure the availability, and promote the use of, the highest priority data and official statistical information to add value to decision-making.

This appropriation is broken down into three categories:

### Official statistics

This category is intended to achieve the outcome of empowering decision-makers by adding value to New Zealand's most important data.

### Data and statistical information services which includes two aspects:

- Economic and business data and statistical information services  
This category is limited to the delivery of data and statistical information services relating to business and the economy.
- Population, social, and labour market data and statistical information services  
This category is limited to delivery of data and statistical information services relating to the population, environment, household economics, social conditions, and the labour market.

### Stewardship of government data and statistical activities

This category is limited to the coordination of statistical and data services for government through leadership of the Official Statistics System, oversight of the IDI, liaison with partners and customers, provision of ministerial services, statistical and data management advice, and the operation of access channels.

### Official statistics category

These performance measures are intended to achieve the outcome of empowering decision-makers by adding value to New Zealand's most important data.

### How we measure our success

At the end of June 2019, the percentage of positive responses by customers who were asked if they could find what they were looking for on our website was 40 percent. This represents a 6 percent increase compared with last year, but remains below our target. This measure of the ease of navigating our website, as well as the measure of customers' awareness of the available data (which was 11 percent lower than our target of 668,000), were affected by the process of rolling out our new website and a transition period which required customers to navigate our new and archived websites. We identified two areas to make significant progress: information architecture and data tools. We are in the early stages of defining a roadmap to give customers a better journey to finding the information they are looking for.

Stats NZ uses a qualitative survey to understand customers' use of data to inform two of the measures below. This year we interviewed nine organisations, all of which reported that they use Stats NZ data to make informed decisions. Five of these organisations also reported their use of Stats NZ data to make evidence-based decisions had increased compare with the previous year. These positive results indicate the continued value customers place on the data we provide.

**Table 3****Official statistics – performance information**

Assessment of performance by measure	2018/19	2018/19 target	2017/18	Variance to target result
The percentage of Stats NZ's published data available at a 5-star open data standard	96%	96%	96%	No variance
The percentage of customers that perceive statistics help them make informed decisions	100%	85% <sup>1</sup>	83%	15%
The percentage of Stats NZ's key customers that report increasing use of data from Stats NZ to make evidence-based decisions	56%	20% <sup>1</sup>	33%	36%
The number of customers who are aware of available data	594,321	668,000 <sup>2</sup>	159,025 <sup>3</sup>	-73,679 (-11%)
The percentage of positive responses to the pop-up question on Stats NZ's website 'did you find what you were looking for?'	40%	80%	34%	-40%

1. The baseline was used internally as the measure was still being tested when the 2018/19 performance measures were confirmed.
2. This result is the number of direct website sessions measured using Google Analytics.
3. This result covers direct website sessions between April and June 2018 only.

## Economic and business data and statistical information services; and population, social, and labour market data, and statistical information services category

These performance measures are intended to achieve statistical releases that are free of significant errors, meet response and release dates, excluding census.

### How we measure our success

The achievements below reflect our focus on ensuring Tier 1 and other key statistics are produced and released reliably. The achievement of these performance measures reflects our commitment to ensuring that customers can rely on the quality of our statistics and know that they will be delivered consistently when expected.

We successfully put eight business surveys online, four more than anticipated. Businesses liked the online mode and chose it where it was offered. This is reflected by the increase in the number businesses choosing to provide data digitally, which grew from 25.6 percent in 2017/18 to 34 percent, exceeding our target of 25 percent. Online surveys reduce collection costs for respondents and Stats NZ and enable our teams to start working with the data much earlier.

In contrast, no progress was made to shift our population-based surveys online. We reprioritised our activities to meet government priorities and 2018 Census requirements, resulting in this area of work being postponed for the future.

**Table 4****Data and statistical information services – performance information**

Assessment of performance by measure	2018/19	2018/19 target	2017/18	Variance to target result
Ensure the right statistical information is produced by the Official Statistics System to better support decision-making and understanding	Achieved	Maintain the number of Tier 1 stats	Achieved	No variance
<b>Multi-category appropriation – Economic and business data and statistical information services</b>				
Number of statistical releases: economic and business data and statistical information services	140	136	133	4 (3%) <sup>1</sup>
Percentage of statistical releases that are free from significant errors	100%	99%	100%	1%
Percentage of statistical releases published on the advertised date as agreed with the Minister of Statistics in Output Plan	100%	100%	100%	No variance
Number of and percentage of Stats NZ-run surveys that are completed online – economic and business data	8 (23%)	4 (11%)	4 (11%)	4 (100%) <sup>1</sup>
Number of and percentage of businesses that chose to provide Stats NZ data in digital format – economic and business data	55,714 (34%)	45,234 (25%)	44,156 (25.6%)	10,480 (23%) <sup>1</sup>
<b>Multi-category appropriation – Population, social, labour market data, and statistical information services</b>				
Number of statistical releases: population, social, labour market data, and statistical information services	69	70	71	-1 (-1.4%) <sup>1</sup>
Percentage of statistical releases that are free from significant errors	100%	99%	100%	1%
Percentage of statistical releases published on the advertised date as agreed with the Minister of Statistics in Output Plan	100%	100%	100%	No variance
Number of and percentage of households and individuals that chose to provide Stats NZ data in digital format – population, social, and labour market data	0%	0%	0%	No variance
Number of and percentage of Stats NZ surveys that are completed online – population, social, and labour market data	0%	0%	0%	No variance

1. The result percentages were calculated using the result numbers.

**Stewardship of government data and statistical activities category**

These performance measures are intended to achieve leadership of the New Zealand data ecosystem and facilitate awareness and use of statistical information.

## How we measure our success

There were 90 submissions to the Minister, including briefings, aide memoires, and memorandums. Of these, 89 were within the agreed timeframes, a 9 percent increase compared with 2017/18.

Social licence means that to manage the public's data, they need to have trust in, and an understanding of, what we do. The results suggest New Zealanders still have a good level of trust in Stats NZ. The proportion of people who had a high level of trust in Stats NZ fell 6.6 percent compared with 2017/18, while the proportion of those who had no trust in Stats NZ fell 0.9 percent compared with 2017/18. Only 1 in 4 said they know what we do.

A focus area for the year was ensuring the technical infrastructure of the IDI is adequate. This will support growth in the use of the IDI and enable us to provide more data to customers, faster – in line with our strategy for the future for the IDI. This focus is reflected by our performance on the two measures which relate to the IDI. At the end of June 2019, the number of customers accessing microdata was 745, which reflects stabilised growth and an increase in customers' ability to self-serve. This increased use of IDI self-service led in part to the reduced number of requests for customised data in 2018/19 – 60 percent less than anticipated. A second factor which has influenced this measure has been the delay in the release of 2018 Census and delay in the higher number of requests that would have followed.

**Table 5**

### Stewardship of government data and statistical activities – performance information

Assessment of performance by measure	2018/19	2018/19 target	2017/18	Variance to target result
<b>Multi-category appropriation – Stewardship of government data and statistical activities</b>				
This category is intended to achieve leadership of the New Zealand data ecosystem and to facilitate awareness and use of statistical information.				
Percentage of briefings submitted to the Minister within agreed timeframes	99%	90%	90%	9%
Percentage of responses to parliamentary questions submitted to the Minister within required timeframes	100%	100%	100%	No variance
Percentage of responses to departmental Official Information Act requests sent within statutory timeframes	100%	100%	100%	No variance
Social licence: Stats NZ maintains the support of its stakeholders as a trusted steward of the New Zealand's data and information	85%	85% <sup>1</sup>	85%	No variance
Requests for customised data	476	800–900	735	-374 <sup>2</sup> (-44%)
Number of users accessing microdata	745	600	737	145 (24%)

1. The baseline was used internally as the measure was still being tested when the 2018/19 performance measures were confirmed.
2. Variance calculated using target of 850 requests.

## Services to other agencies and capital expenditure measures

### Appropriation

The services to other agencies appropriation is intended to achieve the provision of shared services with other government agencies for the efficient and effective management of the Crown estate, such as the provision of shared accommodation in Christchurch and Wellington.

The capital expenditure appropriation is intended to invest in the renewal, upgrade, and redesign of assets that support the delivery of Stats NZ's services, including delivery of the 2018 Census.

### How we measure our success

The non-financial performance measures reported in table 6 relate to the services to other agencies revenue dependent appropriation, and the capital expenditure appropriation.

**Table 6**

### Services to other agencies and capital expenditure – performance information

Appropriation / Assessment of performance by measure	2018/19 result	2018/19 target	2017/18	Variance to target
<b>Appropriation – services to other agencies revenue dependent appreciation (RDA) (M67)</b>				
This appropriation is limited to the provision of services by Stats NZ to other agencies, where those services are not within the scope of another departmental output expense appropriation in Vote Statistics.				
Support the provision of shared services with other government agencies	Achieved	Achieved	Achieved	No variance
<b>Appropriation – capital expenditure permanent legislative authority (PLA) (M67)</b>				
This appropriation is limited the purchase or development of assets by, and for the use of, Stats NZ, as authorised by section 24(1) of the Public Finance Act 1989.				
Deliver infrastructure that supports our strategic vision and business	Achieved	Achieved	Achieved	No variance

# Tauākī takohanga

## Statement of responsibility

*For the year ended 30 June 2019*

I am responsible, as Chief Executive of Stats NZ, for:

- the preparation of Stats NZ's financial statements, and statements of expenses and capital expenditure, and for the judgements expressed in them
- having in place a system of internal control designed to provide reasonable assurance as to the integrity and reliability of financial reporting
- ensuring that end-of-year performance information on each appropriation administered by Stats NZ is provided in accordance with sections 19A to 19C of the Public Finance Act 1989, whether or not that information is included in this annual report; and
- the accuracy of any end-of-year performance information prepared by Stats NZ, whether or not that information is included in the annual report.

In my opinion:

- the financial statements fairly reflect the financial position of Stats NZ as at 30 June 2019 and its operation for the year ended on that date; and
- the forecast financial statements fairly reflect the forecast financial position of Stats NZ as at 30 June 2020 and its operations for the year ending on that date.



**Liz MacPherson**

Government Statistician and Chief Executive  
30 September 2019

# Te Pūrongo a te Kaiarotake Tū Motuhake

## Independent auditor's report

### To the readers of Statistics New Zealand's annual report for the year ended 30 June 2019

The Auditor-General is the auditor of Statistics New Zealand (the Department). The Auditor-General has appointed me, Jacques Coetzee, using the staff and resources of Audit New Zealand, to carry out, on his behalf, the audit of:

- the financial statements of the Department on pages 54 to 85, that comprise the statement of financial position, statement of commitments, statement of contingent liabilities and contingent assets as at 30 June 2019, the statement of comprehensive revenue and expense, statement of changes in equity, and statement of cash flows for the year ended on that date and the notes to the financial statements that include accounting policies and other explanatory information;
- the performance information prepared by the Department for the year ended 30 June 2019 on pages 14 to 47 and 89 to 93; and
- the statements of expenses and capital expenditure of the Department for the year ended 30 June 2019 on pages 86 to 88.

## Opinion

In our opinion:

- the financial statements of the Department on pages 54 to 85:
  - » present fairly, in all material respects:
    - its financial position as at 30 June 2019; and
    - its financial performance and cash flows for the year ended on that date; and
  - » comply with generally accepted accounting practice in New Zealand in accordance with Public Benefit Entity Reporting Standards.
- the performance information of the Department on pages 14 to 47 and 89 to 93:
  - » presents fairly, in all material respects, for the year ended 30 June 2019:
    - what has been achieved with the appropriation; and
    - the actual expenses or capital expenditure incurred compared with the appropriated or forecast expenses or capital expenditure; and
  - » complies with generally accepted accounting practice in New Zealand.
- The statements of expenses and capital expenditure of the Department on pages 86 to 88 are presented fairly, in all material respects, in accordance with the requirements of section 45A of the Public Finance Act 1989.

Our audit was completed on 30 September 2019. This is the date at which our opinion is expressed.

The basis for our opinion is explained below. In addition, we outline the responsibilities of the Government Statistician and our responsibilities relating to the information to be audited, we comment on other information, and we explain our independence.

## Basis for our opinion

We carried out our audit in accordance with the Auditor-General's Auditing Standards, which incorporate the Professional and Ethical Standards and the International Standards on Auditing (New Zealand) issued by the New Zealand Auditing and Assurance Standards Board. Our responsibilities under those standards are further described in the Responsibilities of the auditor section of our report.

We have fulfilled our responsibilities in accordance with the Auditor-General's Auditing Standards.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

## Responsibilities of the Government Statistician for the information to be audited

The Government Statistician is responsible on behalf of the Department for preparing:

- Financial statements that present fairly the Department's financial position, financial performance, and its cash flows, and that comply with generally accepted accounting practice in New Zealand.
- Performance information that presents fairly what has been achieved with each appropriation, the expenditure incurred as compared with expenditure expected to be incurred, and that complies with generally accepted accounting practice in New Zealand.
- Statements of expenses and capital expenditure of the Department that are presented fairly, in accordance with the requirements of the Public Finance Act 1989.

The Government Statistician is responsible for such internal control as is determined is necessary to enable the preparation of the information to be audited that is free from material misstatement, whether due to fraud or error.

In preparing the information to be audited, the Government Statistician is responsible on behalf of the Department for assessing the Department's ability to continue as a going concern. The Government Statistician is also responsible for disclosing, as applicable, matters related to going concern and using the going concern basis of accounting, unless there is an intention to merge or to terminate the activities of the Department, or there is no realistic alternative but to do so.

The Government Statistician's responsibilities arise from the Public Finance Act 1989.



























































































