

National Disaster Resilience Strategy

Rautaki Manawaroa Aituā ā-Motu

We all have a role in a disaster resilient nation
He wāhanga tō tātau katoa i roto i te iwi manawaroa aituā

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Foreword

Kōrero whakapuaki

New Zealand enjoys a relatively high standard of living, regularly coming high in global prosperity rankings with qualities such as an open market, free people and strong sense of society.

Not all is perfect. We have areas we need to work on, including to address inequalities in the distribution of living standards, and improve areas of weakness or decline, such as housing availability and affordability.

We also face risks to that standard of living. Increasingly complex and uncertain risks that represent a threat to our way of life, and to our prosperity and wellbeing. If realised, these risks can be extremely costly. Globally, the economic cost of disasters has increased steadily over the last 40 years, in large part because of the expansion to the built environment: damage to infrastructure and buildings cause huge cost – public and private – when impacted.

It is the impact on wellbeing that can have the most profound effect. In 2011 New Zealand suffered one of its worst ever natural disasters in the 22 February Christchurch earthquake. New Zealand Treasury in 2013 estimated the capital costs to be over \$40 billion, the equivalent of 20% of gross domestic product. Beyond the tangible costs of damage and rebuild, lay a web of social and economic disruption and upheaval: flow-on effects to business and employment, psychological trauma, dislocation of communities, creation or exacerbation of existing social issues, disruption to normal lives and livelihoods, and uncertainty in the future.

Many of the risks we face both now and in the future can be readily identified. However, we also need to recognise that the future is uncertain: major, unexpected, and hard-to-predict events are inevitable. Moreover, the further we probe into the future, the deeper the level of uncertainty we encounter. Within this uncertain future environment, resilience is an important requirement for success. Resilience is our – or a system's – ability to anticipate, minimise, absorb, respond to, adapt to, and recover from disruptive events. In essence, it's about developing a wide zone of tolerance – the ability to remain effective across a range of future conditions.

Given our risk landscape, and the uncertainty of the wider domestic and global environment, it is important for us to take deliberate steps to improve our resilience and protect the prosperity and wellbeing of New Zealand – of individuals, communities, businesses, our society, the economy, and the nation as a whole.

This Strategy proposes a three-pronged approach to improve our nation's resilience to disasters – what we can do to minimise the risks we face and limit the impacts to be managed, building our capability and capacity to manage emergencies when they do happen, and a deliberate effort to strengthen our wider societal resilience.

The Strategy promotes a holistic approach to strengthening resilience that connects with a range of agencies and sectors to deliver improved outcomes for New Zealanders. Disaster risk and disaster impacts reach all parts of society; so, to the greatest degree possible, disaster resilience should be integrated in to all parts of society. Disaster resilience therefore requires a shared approach between governments (central and local), relevant stakeholders, and the wider public – a collective approach to a collective problem. The goodwill, knowledge, experience, and commitment of all of parts of society are needed to make a difference.

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Key terms

Ngā kupu hira

Capacity

The combination of all the strengths, attributes and resources available within an organization, community or society to manage and reduce disaster risks and strengthen resilience.

Disaster

A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, social, cultural, economic and environmental losses and impacts.

Disaster risk

The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined as a function of hazard, exposure, vulnerability and capacity.

Disaster risk management

Disaster risk management is the application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses.

Disaster risk reduction

Disaster risk reduction is aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience.

Emergency management

The application of knowledge, measures, and practices that are necessary or desirable for the safety of the public or property, and are designed to guard against, prevent, reduce, recover from, or overcome any hazard or harm or loss that may be associated with any emergency, including the planning, organisation, co-ordination, and implementation of those measures, knowledge, and practices.

Exposure

People, infrastructure, buildings, the economy, and other assets that are exposed to a hazard.

Hazard

A process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation.

National risk

A national risk is an uncertain, yet conceivable, event or condition that could have serious, long-term effects on New Zealand's security and prosperity, requiring significant government intervention to manage.

Readiness

The knowledge and capacities developed by governments, response and recovery organisations, communities and individuals to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters.

Reconstruction

The medium and long-term rebuilding and restoration of critical infrastructures, services, housing, facilities and livelihoods required for the full functioning of a community or a society affected by a disaster, aligning with the principles of sustainable development and "build back better", to avoid or reduce future disaster risk.

Recovery

The coordinated efforts and processes used to bring about the immediate, medium-term, and long-term holistic regeneration and enhancement of a community following an emergency.

Response

Actions taken immediately before, during or directly after a disaster to save lives and property, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected, and to help communities recover.

Residual risk

The disaster risk that remains in unmanaged form, even when effective disaster risk reduction measures are in place, and for which emergency response and recovery capacities must be maintained.

Resilience

The ability to absorb the effects of a disruptive event, minimise adverse impacts, respond effectively post-event, maintain or recover functionality, and adapt in a way that allows for learning and thriving, while mitigating the adverse impacts of future events.

Risk assessment

An assessment of the nature and extent of risk by analysing potential hazards and evaluating existing conditions of exposure and vulnerability to determine likely consequences.

Risk transfer

The process of formally or informally shifting the financial consequences of particular risks from one party to another, e.g. via insurance.

Vulnerability

The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards.



Our vision and goal

Tā mātau matakitenga me te uaratanga

Purpose of this Strategy

Our vision: a safe and prosperous nation

Risks to our wellbeing and prosperity

Our goal: a resilient future



1. Purpose of this Strategy

Te kaupapa o tēnei Rautaki

1.1 Delivering on the intent and purpose of the CDEM Act 2002

The purpose of this Strategy is to outline the vision and long-term goals for civil defence emergency management (CDEM) in New Zealand. CDEM in New Zealand is governed by the CDEM Act, which:

- promotes the sustainable management of hazards in a way that contributes to safety and wellbeing;
- encourages wide participation, including communities, in the process to manage risk;
- provides for planning and preparation for emergencies, and for response and recovery;
- requires local authorities to co-ordinate reduction, readiness, response and recovery activities through regional groups;
- provides a basis for the integration of national and local planning and activity; and
- encourages coordination across a wide range of agencies, recognising that emergencies are multi-agency events affecting all parts of society.

This reflects an overarching intent for a resilient New Zealand.

This is important because New Zealanders are, and will continue to be, at risk from a broad range of hazards.

We can do much to reduce our risks, through both a risk management approach, and by building broader societal resilience. We can also ensure we have effective processes in place for responding to and recovering from emergencies and other types of disruption when they do happen.

The Strategy sets out what we as New Zealanders expect in respect of a resilient New Zealand, and what we want to achieve over the next 10 years. It explicitly links resilience to the protection and growth of living standards for all New Zealanders, and promotes a wide, whole-of-society, participatory and inclusive approach.

The Strategy provides the vision and strategic direction, including to outline priorities and objectives for increasing New Zealand's resilience to disasters. The detail of *how* those objectives are to be achieved sits in a roadmap of actions, alongside other related key documents including the *National CDEM Plan and Guide*, the *National Security Handbook*, CDEM Group Plans, and a range of other supporting policies and plans.

1.2 This is the third Strategy made under the Act

The first Strategy was made in 2003; the second in 2007. They were aimed at embedding the (then) new approach to emergency management in New Zealand, which was to take a comprehensive and integrated approach, utilising the '4Rs' of risk reduction, readiness, response, and recovery.

In 2018 we have reached a level of maturity where we are ready for the next step. A number of things have influenced our thinking on what that step should be:

- 16 years of lessons from incidents and emergencies since the CDEM Act came into effect;
- work to develop a national risk register, which aims to support better identification, understanding and comparison of national risks;
- global agreements such as the *Sendai Framework for Disaster Risk Reduction 2015-2030* that outlines how nations should approach their wider societal risk from disasters;
- a Ministerial Review (2017) on *Better Responses to Natural Hazards and Other Emergencies*, and the Government's response to it, and
- a two-year long strategy development process with a wide range of stakeholders to analyse our current state and determine vision, goals, and objectives.

We have identified areas where we can do more – to be more effective, more capable, fit-for-purpose, to have all the information we need to make the smartest choices, to keep pace with changing risks, and changes in society. This Strategy details the conclusions, and the areas we need to focus on for a more resilient New Zealand.

1.3 Ring-fencing the scope of this Strategy

While acknowledging broad societal resilience is desirable for achieving higher living standards and optimal prosperity and wellbeing, this Strategy is confined to the disaster aspects of resilience.

Furthermore, while acknowledging the vital importance of wider social and economic attributes of disaster resilience (such as high levels of health and education, reduced inequalities and social deprivation, the building of fiscal and macro-economic strength, etc.), these issues are well-catered for by other policies and programmes across government and through society, and will not be duplicated here.

This Strategy is focussed on building a culture of resilience, and the actions we can all take – at all levels, from individuals and families/whānau, businesses and organisations, communities and hapū, cities, districts and regions, and Government and national organisations – to contribute to a more resilient New Zealand.

1.4 Intended audience and use of the Strategy

This Strategy is for all New Zealanders, and all those who live, work or visit here.

It is intended to provide a common agenda for resilience that individual organisations, agencies, and groups can align with for collective impact.

Central government, local government, businesses, organisations, and iwi can use it to guide them in building resilience both for their own organisation, and for the people and communities they support or provide services for.

Hapū and community organisations can use it to support community wellbeing and resilience, and to understand the wider network of agencies and organisations working towards common goals.

Individuals, households and whānau can use it to prompt thinking on their own resilience, and what they can do to ensure they are prepared for disruption and crises in the long term. The Strategy hopefully gives assurance of the wider network of actors supporting them at a community, local, regional, and national level.

All readers are encouraged to consider what this Strategy means for them, their family/whānau, community/hapū, business or organisation, and what they can do to contribute to their own resilience or the resilience of others.

1.5 Currency of the Strategy

This Strategy will be current for a period of 10 years from the date it comes into effect, unless it is replaced during that time.



2. Our vision: a safe and prosperous nation

Tā mātau matakitenga: he iwi haumaru, he iwi rangatira

National success is about more than just economic measures. It is about a healthy and happy life, a good education for our children, a healthy environment that protects our natural resources and taonga, family/whānau and communities we can rely on, a safe place to live and work, opportunities to start a business or get ahead, and the freedom to be who we want to be. This is prosperity.

New Zealand has seen much success over the past decade in global indices designed to measure wellbeing and prosperity. We hold up well in most categories of measurement, including in economic quality, business environment, and governance; for our health and education systems, our natural environment, and – in particular – for our personal freedoms and social capital.

However, while we do well, we certainly can't afford to be complacent. New Zealand must continually adapt and evolve if it is to see prosperity grow.

For us to secure wellbeing and prosperity for all our people – in this generation and for future generations – we must think about prosperity in more than in economic terms. The New Zealand Treasury, in developing the Living Standards Framework, has initiated a shift of focus. The Living Standards Framework is based on an economic model, but puts intergenerational wellbeing as its core goal.

Wealth matters, but as a means, not an end: wealth is only useful if it translates into higher living standards for everyone. Protecting and growing those living standards is

paramount for securing a prosperous future. This Strategy is centred on how it can contribute to that vision.

2.1 The Living Standards Framework

The Living Standards Framework is a New Zealand-specific framework that draws on a range of national and international approaches to wellbeing. In particular, it builds on the Organisation for Economic Cooperation and Development's (OECD's) approach to wellbeing, the *How's Life?/Better Life* model.

The framework conceives of wellbeing as being comprised of a number of aspects of life experience, such as housing, income, employment, education, community engagement, enjoyment of environmental amenity and health and safety. Measures of these aspects provide a snapshot of current wellbeing. The wellbeing of future generations is represented by four 'capital stocks' – financial/physical, social, human, and natural capital.

The Four Capitals

Intergenerational wellbeing relies on the growth, distribution, and sustainability of the Four Capitals. The Capitals are interdependent and work together to support wellbeing. The Māori-Crown relationship is integral to all four capitals. The LSF is being continually developed and the next iteration of the framework will consider the role of culture, including Māori culture, as part of the capitals approach in more detail.



Natural Capital

This refers to all aspects of the natural environment needed to support life and human activity. It includes land, soil, water, plants and animals, as well as minerals and energy resources.



Social Capital

This describes the norms and values that underpin society. It includes things like trust, the rule of law, cultural identity, and the connections between people and communities.

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Human Capital

This encompasses people's skills, knowledge and physical and mental health. These are the things which enable people to participate fully in work, study, recreation and in society more broadly.



Financial / Physical Capital

This includes things like houses, roads, buildings, hospitals, factories, equipment and vehicles. These are the things which make up the country's physical and financial assets which have a direct role in supporting incomes and material living conditions.

The capitals are seen as ‘value stocks’, which jointly produce wellbeing outcomes over time. Each of the dimensions of wellbeing is the result of all of the different capital stocks. Investments in the capital stocks will result in the levels of the relevant stocks increasing, while depreciation, resource depletion, pollution or waste – or other shocks or stresses – may result in capital stock levels declining.

The four capitals in the Living Standards Framework help us to take into account the range of impacts that a policy option or practice may have on the material and non-material factors that affect New Zealanders’ wellbeing, now and in the future. The underlying principle of the capitals framework is that good public policy and practice enhances the capacity of natural, social, human and financial/physical capital to improve wellbeing for New Zealanders.



Wellbeing

is our quality of life, including: civic and human rights, culture and identity, housing, knowledge and skills, leisure and recreation, material standard of living, employment status and job satisfaction, the physical and natural environment, safety and security, health and social connectedness.

2.2 Risk and resilience, and our future wellbeing

Safety and security are integral to securing wellbeing and prosperity. People’s wellbeing is dependent on having secure living conditions, personal safety, and trust and confidence in authorities, and their ability to manage threats and dangers. A secure and stable environment is necessary for securing freedoms, and for attracting investment and sustaining economic growth. In short, a nation can prosper only in an environment of safety and security for its citizens.

To this end, it is imperative that we look to risk management and resilience for all four capitals stocks.

New Zealand is relatively well placed in this regard with a comprehensive legislative framework in place for risk management, including the Civil Defence Emergency Management Act 2002, the Resource Management Act 1991, the Building Act 2004, the Local Government Act 2002, and a range of other legislation and regulatory instruments. We have a system of managing, coordinating, and overseeing national security (the National Security System) and emergency management arrangements at the local, regional, and national level.

Today, however, risk management is increasingly challenged by complexity in which multiple systems simultaneously impact on the four living standards capitals. Risk management in this setting requires a greater acknowledgement of uncertainty and a shift from reactive to proactive risk management. Decision-makers in both the public and private sectors require more comprehensive strategies that combine the active management of specific risks with enhancement of generic resilience in society.

This Strategy combines these elements and considers ways to improve our resilience across the four capitals.

3. Risks to our wellbeing and prosperity

Ngā mōrea ki tō tātau oranga, tōnuitanga hoki

From the Hawkes Bay earthquake (1931) to the Tangiwai rail disaster (1953), the Wahine shipwreck (1968), the lower North Island floods (2004), Pike River mine disaster (2010), the Canterbury (2010-2011) and Kaikōura (2016) earthquakes, MV Rena grounding (2011), 1080 milk powder crisis (2015), Port Hills fires (2017), or M. Bovis disease outbreak (2018) – New Zealand has had its fair share of devastating events.

These events have caused loss of life, injury, damage and disruption. Some have caused impacts in the built and natural environments; they have cost millions of dollars in repair and reconstruction. Other events have caused lost productivity, lost livelihoods, and lost income. More than that, these events have caused untold trauma and social disruption to individuals, family/whānau, communities and hapū, the effects and costs of which we might never fully know. In short, disasters, or other highly stressful events, impact all four capitals in a profound and costly way.

Disasters may seem inevitable and intractable, but there is much we can do to reduce the chance that hazards will affect us, and much we can do to lessen the impacts if and when they do.

This section explores some key concepts so that we have a common understanding about our key risks and how we can manage them.

3.1 Our current risks

New Zealand is exposed to a range of significant hazards and threats. Natural hazards, such as earthquakes, volcanoes, or extreme weather, is only one type; our economy relies heavily on primary production and is thus vulnerable to adverse impacts from pests and diseases; the potential for an infectious disease pandemic has been highlighted in recent years through the SARS, bird flu and swine flu crises; heavy reliance on technology and just-in-time supply chains means we are vulnerable to disruption from a wide range of domestic and international sources; and the global geopolitical environment means threats to our security and economy are complex and often unpredictable.

In New Zealand, we classify these in five categories: natural hazard risks, biological hazard risks, technological risks, security risks, and economic risks.

3.2 How our risks might change in the future

In assessing our risks, we can learn from past events and crises, but we also need to consider broader and longer-term societal trends and think about how they could impact us in the future. These trends include:

- **Climate change and environmental degradation**, which could impact on, or accelerate, a wide range of our risks owing to their effects on sea level rise, the frequency and severity of natural hazards and extreme weather, biodiversity and the availability and quality of ecosystems and their services.
- **Population trends**, including that New Zealand society is becoming older and more ethnically diverse, with changing levels of income inequality, and changing geographic distribution of population. This has implications for how organisations engage inclusively, and what needs must be met.
- **Global economic growth and productivity**, which have implications for both the state and resilience of our economy, and how much we can afford to invest in risk management and resilience.
- **Digital connectivity and technological change, which can**, simultaneously, be a source of both risk (for example, cyber-crime) or opportunity (for example, by enhancing our ability to collect and analyse complex data about risks).
- **Challenges to the rules-based international order**, which have the greatest effect on some of our economic and security risks, but could have further-reaching implications.

3.3 Cost of disasters

Disasters over the decade or more, both in New Zealand and overseas, have shown the magnitude of costs that are involved in these events, both in terms of damage (the market value of losses), and in the response to and recovery from such events. It is important to note that the costs that are reported are often only direct costs. Less well defined is the flow-on, indirect costs, and – even less so – from other longer-term outcomes (also known as ‘intangible costs’). A recent Australian study found that the indirect and intangible costs, when calculated, more than doubled the total reported cost of each of the three events studied.¹

While we intuitively know that the impact of disasters is much larger than the direct economic cost, it is only when we start to consider the economic cost of these indirect and intangible impacts that we can see what these events really cost us as communities, and as a nation, and how critical it is to try to minimise these costs – financial and social – as far as we possibly can.

3.4 What is disaster risk?

Disaster risk is the chance that a hazard could impact us in a significant way.

Disaster risk is a function of three interlinked aspects: hazard, exposure, and vulnerability.

Hazard refers to the likelihood and intensity of a process or phenomenon that could cause us harm, such as ground shaking induced by an earthquake, extreme winds associated with a cyclone, or a pathogen caused by a food safety issue or biological agent.

Exposure refers to the location, attributes, and value of people and assets (such as buildings, agricultural land, and infrastructure) that are exposed to the hazard.

Vulnerability is the potential extent to which physical, social, economic, and environmental assets may become damaged or disrupted when exposed to a hazard. Vulnerability includes physical vulnerability, which refers to the level of damage sustained by built structures due to the

physical load imparted by a hazard event. It also includes social vulnerability, which refers to damage as it relates to livelihood, social connections, gender, and other factors that influence a community's ability to respond to, cope with, and recover from a disaster.

These three components can be countered by a fourth component, **capacity**, which refers to the strengths, attributes and resources available to reduce or manage the risks associated with the combination of the other three factors.

When these potential impacts are determined probabilistically, that is, are multiplied by how likely the hazardous event is to occur, we can determine our risk – the chance of significant impacts.

3.5 Disaster risk reduction

Disaster risk reduction is the discipline concerned with reducing our risks of and from disasters.

Historically, dealing with disasters focused on emergency response, but towards the end of the 20th century it was increasingly recognised that disasters are not ‘inevitable’ and that it is by reducing and managing conditions of hazard, exposure and vulnerability we can prevent losses and alleviate the impacts of disasters. Since we cannot usually reduce the likelihood of hazards the main opportunity for reducing risk lies in reducing exposure and vulnerability. Reducing these two components of risk requires identifying and reducing the underlying drivers of risk, which are particularly related to economic, urban and rural development choices and practice, degradation of the environment, poverty and inequality² and climate change, which creates and exacerbates conditions of hazard, exposure and vulnerability. Addressing these underlying risk drivers will reduce disaster risk, lessen impacts if they do happen, and, consequently, maintain development and growth.

¹ *The Economic Cost of the Social Impact of Natural Disasters* (2016) Australian Business Roundtable

² The impact of hazards and threats is likely to exacerbate existing inequities that exist across New Zealand. This means that some populations are disproportionately affected by many of the social and economic impacts of risks, particularly Māori, as well as Pasifika, people with disabilities and those living with high levels of social and economic deprivation. Obligations under the Treaty of Waitangi as well as commitments to improving wellbeing mean we need to ensure that any action toward reducing risk does not increase existing inequities. Any plan should explicitly embrace equitable outcomes for all affected people.

Disaster risk reduction can be seen as a policy objective, a risk management process, or a social aspiration. Successful disaster risk reduction tends to result from a combination of 'top-down', institutional changes, strategies, and policies, and 'bottom-up', local and community-based approaches.

3.6 Sendai Framework for Disaster Risk Reduction 2015-2030

In 2015 New Zealand signalled its commitment to the *Sendai Framework for Disaster Risk Reduction 2015-2030* (the 'Sendai Framework'). The Sendai Framework is one of three global agreements developed as part of the 'post-2015 sustainable development agenda'. Together with the Sustainable Development Goals and the *Paris Agreement on Climate Change*, the Sendai Framework aims to be a blueprint for how nations should approach risks to their development – in this case, from disasters.

The Sendai Framework has a desired outcome of:

The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.

To attain this outcome, it has a goal to:

Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience.

The Framework has four priorities, and a series of recommended actions at the global, regional, national, and local levels. It promotes three key ideas:

1. A greater effort to understand risk (in all its dimensions), so that we can prioritise investment, make better risk-informed decisions, and build resilience into everyday processes.
2. A shift of focus from managing disasters to managing risk, including to reduce the underlying drivers of risk (exposure and vulnerability)
3. A broader 'whole-of-society' approach to risk – everyone has a role in reducing and managing risk.

The Framework sets 7 global targets for improved disaster risk reduction, which nations are asked to report on annually. The targets are:

1	Substantially reduce disaster mortality by 2030, aiming to lower average per 100,000 mortality between 2020-2030 compared with 2005-2015.
2	Substantially reduce the number of affected people by 2030, aiming to lower the average figure per 100,000 between 2020-2030 compared with 2005-2015.
3	Reduce disaster economic loss in relation to gross domestic product (GDP) between 2020-2030 compared with 2005-2015.
4	Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.
5	Substantially increase the number of countries with national/local disaster risk reduction strategies by 2020.
6	Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of [the] framework by 2030.
7	Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030

The Sendai Framework has been a key influence in the development of this Strategy. The principles and priorities of the Sendai Framework have been incorporated into it; many of the national and local recommended actions have been instrumental in developing the Strategy objectives.

4. Our goal: a resilient future

Tā mātau whāinga: he anamata manawaroa

In an effort to address our current known risks, manage uncertainty, and be ready for any events that may occur in the future, it is generally agreed that the overarching goal is resilience. But – what does resilience mean to us, as New Zealanders? How do we define it, what are the attributes of resilience, and how do we improve it?

4.1 Vision of a resilient nation

Resilience can mean a lot of different things to different people. In a series of workshops we asked participants to describe what a resilient nation meant to them and the aspirations they have for New Zealand in respect of its disaster resilience. The result is a description of our desired ‘future state’ – the end goal, ‘what success looks like’ for this Strategy. This is shown on pages 20-21.

4.1.1 Guiding principles for this Strategy

Within this vision of a resilient nation, we specifically looked at what principles and values are important to us in pursuing a resilience goal. We agreed that it is important to act with the following in mind:

Manaakitanga	We respect and care for others <ul style="list-style-type: none">• Wellbeing, health and safety• Hospitality, kindness, goodwill
Whanaungatanga, kotahitanga	We nurture positive relationships and partnerships <ul style="list-style-type: none">• Engagement and communication• Collaboration and collective action• Respect of individuality
Kaitiakitanga, tūrangawaewae	We guard and protect the places that are special to us <ul style="list-style-type: none">• Protecting and enhancing our environment and ecosystems• Intergenerational equity• Stewarding our place in the world• Feeling enabled and connected
Matauranga	We value knowledge and understanding <ul style="list-style-type: none">• Using scientific, historic, local, and traditional knowledge• Striving for a common understanding• Accountability and transparency
Tikanga	Our customs and cultural practices are central to who we are <ul style="list-style-type: none">• Cultural identity and expression• Ethical and values-based• Accountability and transparency
Rangatiratanga	We lead by example <ul style="list-style-type: none">• Values-based leadership• Self-determination, principle of subsidiarity



4.2 Resilience: a working definition

In the wake of unprecedented disasters in recent years, “resilience” has become a popular buzzword across a wide range of disciplines, with each discipline attributing its own definition to the term. A definition that has long been used in engineering is that resilience is the capacity for “bouncing back faster after stress, enduring greater stresses, and being disturbed less by a given amount of stress”. This definition is commonly applied to objects, such as bridges or buildings. However, most risks are systemic in nature, and a system – unlike an object – may show resilience not by returning exactly to its previous state, but instead by finding different ways to carry out essential functions; that is, by adapting and transforming to meet challenges.

In terms of disaster resilience, an important quality is also to anticipate and minimise risks as far as possible, such that any impacts are manageable and recoverable.

The working definition of resilience for this strategy is therefore *“the ability to absorb the effects of a disruptive event, minimise adverse impacts, respond effectively, maintain or recover functionality, and adapt in a way that allows for learning and thriving.”*

Below we offer two additional explanations: one, a more technical explanation, and one, a simplified approach.

4.2.1 Getting more technical...

While risks tend to focus on the negative consequences from uncertainty, the concept of resilience encourages us to build capacity to help protect us from vulnerability, and to be able to better deal with the impact from shocks and stresses as they occur. The degree of vulnerability we have then depends on the nature, magnitude and duration of the shocks or stresses that are experienced as well as the level of resilience to these shocks.

Under this interpretation, resilience has two dimensions:

- an **absorption** dimension, which comprises resistance and buffers that can reduce the depth of impact, and
- an **adaptability** dimension, which focuses on elements of adaptability and innovation that maximise the speed of recovery.

Figure 1 below illustrates this idea. When a system is subject to a shock or stress, the level of functioning declines, and can fall rapidly. The depth of the fall in functioning can be thought of as the absorption capacity of the system. A system with a high absorption capacity experiences only a small loss in functioning (e.g., because it has sufficient buffers to absorb the stress or shock to ensure it continues to achieve desired outcomes). The speed of recovery dimension is captured by the time lag between the stress or shock and when functioning returns to a steady-state level. Systems that have high adaptability are able to recover faster than is otherwise the case. The two dimensions together acknowledge that the total impact of a shock is a function of both the depth of the impact and the time it takes to recover.

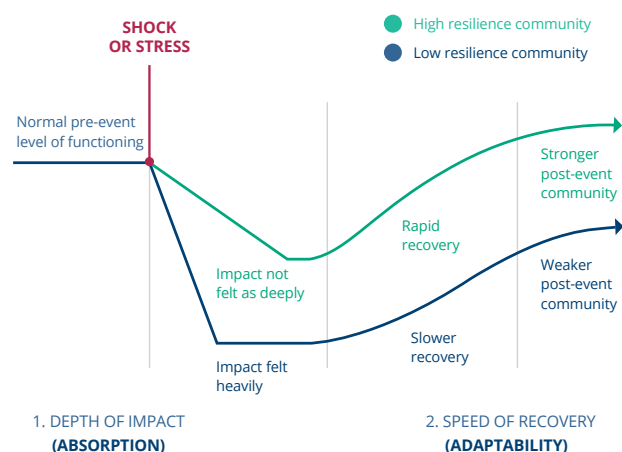


Figure 1 Two dimensions of resilience: absorption and adaptability

4.2.2 Simplifying resilience...

A simpler way of thinking about resilience is our *tolerance for disruption* – how much disruption, in the form of hazards, that we, or the system, can cope with before it becomes a significant impact on our wellbeing.

The implicit suggestion here is that as we are able to remove, avoid, or minimise more risk factors, and build our people, assets, and systems to be responsive and adaptable, so our tolerance for disruption grows – we can deal with a wider range and size of shocks and stresses, without them becoming a major crisis or disaster, and recover fast – and well – without significantly affecting our quality of life. The greater our range of tolerance for disruption, the better off we are.

4.2.3 Types of resilience

Resilience as a concept has wide applicability to a range of disciplines, and has become a popular area of academic study and organisational pursuit over recent years. As a result, it is routine to hear about many different types of resilience, for example ecological, environmental, institutional, infrastructural, organisational, economic, social, community, familial, and individual resilience – to name just a few.

Within this context, it is particularly important to be clear about our goals and objectives; in particular:

Resilience of what, to what, why, and how?

In terms of this Strategy, we have talked about *of what, to what, and why* – to protect and grow our capitals in the face of shocks, stresses, and uncertainty, in order to advance the wellbeing and prosperity of New Zealand. The remainder of this Strategy is about how we do that.



4.2.4 Model of a resilient nation: protecting our capitals from shocks and stresses

The literature review and engagement process to develop this Strategy has identified the following types of resilience are important for protecting our capitals – our future wellbeing – from shocks and stresses:

Social resilience: this includes promoting social connectedness and cohesion, and the effective operation of key social support functions, such as health, education, welfare, and justice, for the protection and strengthening of our social and human capital.

Cultural resilience: including aspects such as cultural values, places, institutions, and practices; our identity as New Zealanders, and our history and heritage.

Economic resilience: this includes the protection and continuity of the macroeconomic environment, businesses, financial markets, financial management practices (including through insurance), thereby protecting our financial capital.

Resilience of the built environment: this includes the resilience of critical infrastructure (namely communications, energy, transport, and water), buildings and housing, effective urban design and planning, and the engineering and construction disciplines, for the protection of our physical capital.

Resilience of the natural environment: including the sustainable use of natural resources, land-use, and the ecological system; managing long-term climate resilience, and improved understanding of both how hazards impact the environment and how the environment can protect society from hazards.

Governance of risk and resilience: including leadership, policy, strategy, security, and the rule of law, for effective oversight, coordination, collaboration, and coherence of resilience activity.

Underpinning knowledge: including up-to-date information on risks, and effective resilience practices.

These are shown in the diagram on the next page.





Figure 2 Model of a Resilient Nation

These types of resilience can operate – in some form – at a range of levels, from individuals and families/whanau, to businesses and organisations, communities and hapū, cities and districts, and at a national level.

For example, at a community level, the attributes of a safe and resilient community are that it:

... is connected: It has relationships within its network, and with external actors who provide a wider supportive environment, and supply goods and services when needed.

... is healthy: it has a good level of individual and population health, access to medical treatment, education, and a range of other social welfare support, when needed.

... has cultural norms: it has a strong identity, attachment to place, and sense of civic responsibility. It is inclusive, and looks to cultural norms and values to sustain it in times of upheaval.

... has economic opportunities: it has a diverse range of employment opportunities, income, and financial services. It is flexible, resourceful, and has the capacity to accept uncertainty and respond to change.

... has infrastructure, services, and safe buildings: it has strong housing, transport, power, water, and sanitation systems. It also has the ability to maintain, repair, and renovate them.

... can manage its natural assets: it recognises the value of natural resources and indigenous ecosystems, and has the ability to protect, enhance, and maintain them.

... is organised: it has the capacity to identify problems, establish priorities, coordinate, collaborate, and act.

... is knowledgeable: it has the ability to assess, manage, and monitor its risks. It can learn new skills, build on past experiences, and plan for its future.

Adapted from: Characteristics of a Safe and Resilient Community, IFRC (2011)

This Strategy asserts that broad attention to resilient practices within and across each of these environments is critical to the overall resilience of the nation, and protection of our capitals and future wellbeing. The model is not a strategy itself, but a checklist, of kinds, to ensure we pay attention to the range of things that are important. It can also operate as a basis for assessment, or as a decision-making tool, for example, to evaluate whether options or investment are meeting, or are sensitive to, multiple needs.

4.3 Resilience and Te Ao Māori

Any comprehensive framework for resilience in New Zealand needs to consider both the resilience of Māori and Māori concepts of resilience. This reflects the status of Māori as the indigenous population of New Zealand and the principles of the Treaty of Waitangi.

4.3.1 Tangata whenua and resilience

Māori share a holistic and community perspective on resilience, which can be characterised as the social, physical, familial, spiritual and environmental wellbeing of whānau, the unit of cultural capital in Te Ao Māori. Sustainable wellbeing is achieved through having a secure Māori identity, that is intergenerationally linked through whānau, local communities, and different iwi, to the earth mother Papatūānuku (the land), from whom all Māori descend. This genealogy imposes moral obligations on Māori to enact guardianship roles and responsibilities to ensure the ora – ongoing wellbeing, or more broadly the resilience – of all residents, flora, fauna and the wider environment (lands, rivers and seas) of New Zealand.

4.3.2 Tangata whenua and disaster risk reduction

When a disaster occurs, the responsibility of caring for others and Te Ao Tūroa (the natural world), falls to whānau, hapū and iwi with historical ties to the areas impacted by the disaster. Whakapapa creates a kinship-based form of capital understood by Māori as whanaungatanga (close relationships), that may be drawn on to aid communities during times of adversity. Whānau, hapū and iwi respond quickly and collectively to provide support and address the immediate needs of communities as well as to institute practices that will aid the recovery, and the development of disaster resilience in affected regions.

This process is considered whakaoranga⁴ – the rescue, recovery and restoration of sustainable wellbeing and may be applied to whānau, hapū, and iwi, tribal homelands as well as all communities and parts of New Zealand impacted by disasters. The whakaoranga process is underpinned by kaupapa Māori (cultural values), informed by mātauranga Māori (cultural knowledge and science) and carried out as

tikanga Māori (cultural practices). These cultural attributes interact to co-create community and environmental resilience in the context of disasters.

Key values that shape Māori inter-generational practices for facilitating whakaoranga (restoration and resilience) include kotahitanga (unity), whānau (family), whakapapa (genealogy), marae (community centres), whakawhanaungatanga (building/maintaining relationships), manaakitanga (respect/support/hospitality), and kaitiakitanga (guardianship). From a Māori perspective, such values link with a set of practices that must be learnt and enacted through giving time and support for the good of all rather than the wellbeing of oneself, and such actions are a positive indicator of a person's mana.

4.3.3 Tangata whenua and a resilient nation

The effective response and significant community support facilitated by Māori in the aftermath of the Canterbury and Kaikōura earthquakes, the floods in Edgumbe as well as in other emergencies, has generated considerable interest in Māori disaster resilience. Māori moral and relational attributes applied to creating community resilience promote a collaborative response to disaster recovery, commitment to environmental restoration, and the extension of hospitality to others experiencing adversity. Māori also have a significant asset base, which has, and will again be mobilised to secure community wellbeing in the aftermath of disasters⁵.

These strengths are highly relevant to developing a resilient New Zealand, and partnering with Māori to build disaster resilience is essential to ensuring that outcome.

This Strategy recognises the importance of whakaoranga, the Māori-Crown relationship, and Māori worldviews generally: it is committed to an inclusive, community approach to resilience; it is focussed on putting people at the centre of resilience, including an emphasis on manaakitanga and wellbeing; it aims to build a partnership approach between iwi and agencies with roles in the emergency management system, and it seeks to build recognition of the role culture – including kaupapa Māori and tikanga Māori – plays in our wider resilience.

⁴ Acknowledgement: The concept and application of the term whakaoranga to disaster resilience were developed in the National Science Challenge Resilience to Nature's Challenges' research project: *Whakaoranga marae*, led by Dr Christine Kenney.

⁵ It is important to note that while many Māori may share a similar worldview, there is still a need to recognise different dynamics both within and between iwi/hapū, and to engage with each on an individual basis. There is also a need to recognise that different iwi, hapū and marae have different resource constraints and asset bases and their ability to respond is dependent on this; not all iwi will have the same resilience or capacity to respond.

4.4 A resilient nation: how are we doing?

The process to develop this Strategy included a collective⁶ evaluation of New Zealand's current state of resilience, including our strengths, barriers to, and opportunities for building resilience. Appendix 3 details the main conclusions, and can be seen as the 'baseline' for the Strategy, as well as the main evidence base on which many of the priorities and objectives are based.

4.5 Conclusion: co-creating a resilient society

Today's world is turbulent and is likely to be so in the future. However, it is also dynamic, and characterised by huge opportunities for leadership and innovation. A critical question for the next 10 years will be how to enable and use those opportunities to effectively build resilience and address the many challenges that will continue to confront us.

One of the key messages is that we need to look to a range of sources for inspiration and relevance as we adapt to a shifting, and increasingly challenging environment. These include exploring new opportunities for engagement and action through technology, new sources of inspiration and activity driven by younger generations, and new methods for measuring and demonstrating impact.

We need to embody agility and flexibility. We need to monitor risks and trends, maintain a learning, growth mindset, and adapt and transform our organisations and ourselves as necessary. Within this, it is important to focus on adaptive capabilities – the skills, abilities, and knowledge that allow us to react constructively to any given situation.

We need to work out how we build our resilience in a smart, cost-effective way, so that it's realistic and affordable, and so it isn't a 'sunk' cost, like stockpiles for a bad day – but rather enables better living standards today.

Above all, we need to work together. Building resilience as siloed sectors is not enough – government, the private sector, and civil society need to be more joined up. More effective ways of tackling challenges are required, which, by necessity, will transcend traditional sector barriers. This includes employing new business models that combine the resources and expertise of multiple sectors of society to address common challenges, as well as creating opportunities that enable leaders across all sectors to participate effectively in decision-making.

It is in this cross-sectoral space that we have the opportunity and ability to underpin the resilience dynamism that we need, by engaging in ways that inspire, support and shape a change agenda that is needed for improved resilience at both the national and local levels. By developing these cross-sectoral opportunities, we can build powerful networks built on trust, commitment, and a focus on the collective good, which can be translated into positive outcomes for society.



⁶ Including representatives from over 300 organisations from local and central government, iwi, social, community, and voluntary sector groups, emergency services, and the private sector including the business, lifelines and infrastructure sectors.

Vision of a resilient New Zealand

He matakītenga o te Aotearoa manawaroa

A future resilient New Zealand is a nation where resilience thinking is integrated into all aspects of life as a matter of course. There is a deep, shared understanding of a wide range of risks and the nature of the action that each of them requires. From an individual level, to families and whānau, communities and settlements, towns and cities, and at a national level, everyone understands their own share of responsibility for reducing risk and strengthening resilience. A strong understanding of risk and resilience is also an integral part of business culture. The sum of these parts builds a risk-savvy, resilient nation.

Strong leadership has created a coherent, joined-up approach to resilience that connects with a range of government departments and organisational mandates. Communities are empowered to problem solve and adapt. At a national level, a long-term resilience strategy and the associated capacities and governance structures are in place. There is a constant flow of up-to-date, evidence-based information on best practice. This supports the capacity for local, site-specific, and innovative response. Rich information flows make it possible for communities and the nation to identify and connect-up resources and use them where they are most needed.

New Zealand communities and neighbourhoods are well connected both by face-to-face interaction and digital networks. There are shared values and social norms in relation to resilience that support a 'whole of society' approach. At the same time, resilience thinking connects with, draws on and permeates all cultures within New Zealand. People make the connection between resilience and their own culture, values traditions, sense of identity and sense of place.



New Zealand takes a proactive, anticipatory, smart approach to limit impacts before they happen, understanding that action up-front limits costs later. This includes taking steps to both to mitigate the risks from climate change, and to adapt to the change that is already taking place. Tough issues are tackled through collective conversation and action.

Resilience is integrated into urban and rural design principles as a matter of course and supported by quality information on safe building materials and design. Rich data and modelling of hazard and risk are enabling the transition to smart land-use, where permanent dwellings and key infrastructure are not built on the highest risk ground.

Response to emergencies is characterized by an end-to-end system that supports cooperative and coordinated emergency management, and timely, accurate, and relevant information that enables the public to understand the situation and take action to protect themselves and others, and limit damaging and costly flow-on effects.

New Zealand as a whole is able to have informed debate about the optimal level of resource to invest in order to ensure that ALL aspects of recovery, including economic recovery, are smooth and swift. Recovery from emergencies is comprehensive, participatory, and inclusive of all peoples and organisations, having had discussions about priorities, processes, and desired outcomes before emergencies happen.



In all, as a nation, we understand that we live in a country exposed to hazards, but we also understand the range of action to take to limit impacts and ensure the hazards, crises, and emergencies we will inevitably face do not become disasters that threaten our prosperity and wellbeing.

Our priorities for improved resilience:

Ā mātau kaupapa matua mō te whakapakari i te manawaroa

Managing risks

Effective response to and recovery from emergencies

Strengthening societal resilience



5. Managing risks

Te whakahaere mōrea

What we want to see: New Zealand is a risk savvy nation that takes all practicable steps to identify, prioritise, and manage risks that could impact the wellbeing and prosperity of New Zealanders, and all who live, work, or visit here.

This priority is concerned with identifying and monitoring risks to our wellbeing, taking action to reduce our existing levels of risk ('corrective risk management'), minimise the amount of new risk we create ('prospective risk management'), and ensuring that everyone has the data, information, knowledge, and tools they need to be able to make informed decisions about resilience.

We have seen how we already have a considerable amount of risk in our society through the hazards we face, the assets we have exposed to those hazards, and the vulnerability of people, assets, and services to impacts. It is important for us to try and reduce that level of existing risk so that the chances of disaster are reduced, and/or the impacts are reduced if or when hazardous events occur.

At the same time, it is critical to recognise how we inadvertently add to that risk through poor development choices, including land-use and building choices. Planning for resilience at the outset of new projects is by far the cheapest and easiest time to minimise risk and has the potential to significantly reduce disaster costs in the future.

Risk information provides a critical foundation for managing disaster risk across all sectors. At the community level, an understanding of hazard events—whether from living memory or oral and written histories— can inform and influence decisions on preparedness, including life-saving evacuation procedures and the location of important facilities.

In the construction sector, quantifying the potential risk expected in the lifetime of a building, bridge, or other critical infrastructure drives the creation and modification of building codes. In the land-use and urban planning sectors, robust analysis of flood (and other) risk likewise drives investment in flood protection and possibly effects changes in insurance as well. In the insurance sector, the quantification of disaster risk is essential, given that the solvency capital of most insurance companies is strongly influenced by their exposure to risk.

A critical part of understanding and managing risk is understanding the full range of costs involved in disasters, both the direct costs from damage and the more indirect and intangible costs resulting from flow-on effects and social impact. We also need to identify the range of financial instruments that may be available to support the activities designed to reduce our risk and build our resilience, including those promoted in this Strategy.

The six objectives designed to progress the priority of managing risks are at all levels to:

Objective	What success looks like
1 Identify and understand risk scenarios (including the components of hazard, exposure, vulnerability, and capacity), and use this knowledge to inform decision-making	By 2030, there is an agreed, standardised, and widely-used methodology for assessing disaster risks at a local government, large organisation, and central government level. Risks can be aggregated and viewed at a national or sub-national level, and the results inform the risk assessment efforts of others. Businesses and small organisations can make use of a simplified version to assess their own risks, and make decisions about courses of action.
2 Put in place organisational structures and identify necessary processes to understand and act on reducing risks	By 2030, the governance of risk and resilience in NZ is informed by multi-sectoral views and participation including the private sector, civil society, and other community representatives. Progress on risk management and towards increased resilience is publicly tracked, and interventions evaluated for effectiveness.
3 Build risk awareness, risk literacy, and risk management capability, including the ability to assess risk	By 2030 we have an agreed 'plain English' lexicon for risk, including better visual products for describing the risk of any situation, hazard, product, or process; government agencies and science organisations regularly communicate with the public about risks in a timely and transparent manner, and in a way that is understandable and judged effective by the public.
4 Address gaps in risk reduction policy (particularly in the light of climate change adaptation)	By 2030 we have had a national conversation – including with affected and potentially-affected communities – about how to approach high hazard areas, and we have a system level-response (including central and local government) with aligned regulatory and funding/financing policies in place.
5 Ensure development and investment practices, particularly in the built environment, are risk-sensitive, taking care not create any unnecessary or unacceptable new risk	By 2030, communities value and accept having resilience as a core goal for all development, recognising that this may involve higher upfront costs though greater net benefits in the long term; plans, policies and regulations are fit for purpose, flexible enough to enable resilient development under a variety of circumstances, and can be easily adapted as risks become better understood; developers aim to exceed required standards for new development, and may receive appropriate recognition for doing so; earthquake prone building remediation meets required timeframes and standards.
6 Understand the economic impact of disaster and disruption, and the need for investment in resilience. Identify and develop financial mechanisms that support resilience activities.	By 2030, there is an improved understanding of the cost of disasters and disruption, including the economic cost of social impact; we are routinely collecting data on disruption, and using it to inform decision-making and investment in resilience; there is a clear mix of funding and incentives in place to advance New Zealand's disaster risk management priorities and build resilience to disasters.

6. Effective response to and recovery from emergencies

Te urupare tōkita me te whakaora mai i ngā ohotata

What we want to see: New Zealand has a seamless end-to-end emergency management system that supports effective response to and recovery from emergencies, reducing impacts, caring for individuals, and protecting the long-term wellbeing of New Zealanders.

Responding to and recovering from disasters remains – and may always remain – our toughest challenge. This is when we have most at risk, when human suffering is potentially at its greatest, and when there is most threat to our property, assets, and economic wellbeing. It is the phase of the fastest pace, of most confusion, of the most pressure, and the highest requirement for good decision-making and effective communications and action. It is also a phase when we have the chance to reduce impacts before they get out of control, to limit the suffering of individuals, families/whānau, communities and hapū, to manage risk and build in resilience for an improved future. In short it is the phase in which we all need to rise to the challenge, be the best that we can be, and work collectively to address the issues in front of us.

There are many strengths in New Zealand's emergency management system. Our system is set up to deal with 'all hazards and risks', we work across the '4Rs', and engage communities in emergency management. There is passion and commitment from all those who respond to emergencies, paid staff and volunteers alike.

In recent years, significant global and local events have changed how we think about emergency management. The Christchurch earthquakes are still fresh in our minds as a nation. A changing climate means we could get more frequent storms and floods. Globally, we see the impact of tsunamis, pandemics, industrial accidents, terrorism incidents and other hazards that cause serious harm to people, environments, and economies. Our risks are changing. Our response system must change too to ensure it works when we need it.

This priority aims to take the progress we have made in responding to and supporting recovery from emergencies over the last 16 years since the CDEM Act came into force. It incorporates the Government's response to the Ministerial Review into *Better Responses to Natural Hazards and Other Emergencies* (2017), and it looks at the next generation of capability and capacity we require. It aims to modernise the discipline of emergency management and ensure we are 'fit-for-purpose', including to address some of the emerging issues of maintaining pace with media and social media, responding to new and complex emergencies, managing whole-of-society response, and the type of command, control, and leadership required to ensure rapid, effective, inclusive, and compassionate response and recovery.



The six objectives designed to progress the priority of effective response to and recovery from emergencies are to:

Objective	What success looks like
7 Implement measures to ensure that the safety and wellbeing of people is at the heart of the emergency management system	By 2025, there is renewed levels of trust and confidence in the emergency management system. A partnership approach with iwi means a collaborative approach and full engagement in relation to emergency management. In emergencies, the safety, needs, and wellbeing of affected people are the highest priority. The public know what is going on, what to expect, and what to do: hazard warnings are timely and effective, and incorporate new technology and social science; strategic information is shared with stakeholders, spokespeople, and the media, so they get the right advice at the right time; and public information management is resourced to communicate effectively with the public, through a variety of channels, in formats that are sensitive to the particular needs of people and groups, such as people with disabilities or non-English speakers.
8 Strengthen the national leadership of the emergency management system	By 2025, more directive leadership of the emergency management system, including setting national standards for emergency management, so there is a consistent standard of care across the country. The Hazard Risk Board provides strengthened stewardship of the system, and there is clear understanding of, and arrangements for, lead and support roles for the full range of national risks.
9 Improve policy and planning to ensure it is clear who is responsible for what, nationally, regionally, and locally, in response and recovery	By 2025, legislative and policy settings support plans at all levels that are clearer about how agencies will work together and who will do what. An updated incident management doctrine provides clarity about roles and functions, and is used by all agencies to manage all events. At a regional level, shared service arrangements are clear about local and regional roles, and mean better use of resources and better holistic service delivery to communities.
10 Build the capability and capacity of the emergency management workforce for response and recovery	By 2030, all Controllers are trained and accredited; people fulfilling incident management roles have the appropriate training, skills, experience and aptitude and volunteers are appropriately trained, recognised, and kept safe in the system. Fly-in Teams supplement local capability and capacity.
11 Improve the information and intelligence system that supports decision-making in emergencies	By 2025, all stakeholders in the emergency management system have access to the same operational and technical information, which provides greater awareness of the situation at hand, and allows timely and effective decision-making.
12 Embed a strategic approach to recovery planning that takes account of risks identified, recognises long-term priorities, and ensures the needs of the affected are at the centre of recovery processes	By 2030, there is significantly increased understanding of recovery principles and practice by decision-makers; readiness for recovery is based on a strong understanding of communities and the consequences local hazards might have on these communities; in particular, it focuses on long-term resilience by linking recovery to risk reduction, readiness, and response through actions designed to reduce consequences on communities.

7. Strengthening societal resilience

Te whakapakari i te manawaroa o te iwi

What we want to see: New Zealand has a culture of resilience that means individuals, organisations, businesses and communities take action to reduce their risks, connect with others, and build resilience to shocks and stresses

This Strategy promotes the strengthening of resilience in the social, cultural, economic, built, natural, and governance environments, at all levels from individuals and families/whānau, to business and organisations, communities and hapū, cities and districts, and at the national level. It promotes integrated, collective, and holistic approaches and the goal of linking bottom-up, grassroots endeavours, with top-down policy and programmes that empower, enable and support individuals and communities.

It is particularly important to ensure an inclusive approach, including engaging with, and considering the needs of, any people or groups who have specific needs, or who are likely to be disproportionately affected by disasters. Not all New Zealanders, or those who work, live, or visit here, will have the same capacity to engage, prepare, or build resilience. It is critical that the needs of all people are accounted for, including how we can best enable, empower, and support people to achieve good outcomes.

A key goal is to strengthen the culture of resilience in New Zealand, whereby New Zealanders see the value of resilience, and understand the range of actions they can take to limit their impacts, or the impacts on others, and ensure the hazards, crises, and emergencies we will inevitably face do not become disasters that threaten our prosperity and wellbeing.

Two key features are especially important to this goal: a learning culture, and developing our future foresight. Developing a strong learning culture is critical for expanding our knowledge and skills, for changing behaviours, for innovating, and for adapting to change. Alongside this, an ability to 'see' and anticipate the future – in terms of both our risk landscape, and the opportunities for improving our resilience – are key factors for success.

Inclusive and participatory governance of disaster resilience at the national, regional and local levels is an important objective, including the development of clear vision, plans, capability, capacity, guidance and coordination within and across sectors. Champions, partnerships, networks, and coalition approaches are crucial, as well

as the development of increased recognition of the role culture plays in resilience. Infrastructure, including physical infrastructure for example roads, bridges, airports, rail, water supply, telecommunications and energy services, and social infrastructure for example health care, education, culture and heritage facilities, banking and finance services, emergency services and the justice system, is recognised as a critical element for healthy economies and stable communities. It enables commerce, movement of people, goods and information, and facilitates society's daily economic and social wellbeing.

The ability of infrastructure systems to function during adverse conditions and quickly recover to acceptable levels of service after an event is fundamental to the wellbeing of communities. This Strategy supports other key policy and programmes in emphasising the importance of infrastructure resilience, in particular for its role in supporting wider community resilience. This includes assessing the adequacy and capacity of current infrastructure assets and networks, identifying key interdependencies and cascading effects, progressively upgrading assets as practicable, and identifying opportunities to 'build back better' in recovery and reconstruction.



The six objectives designed to progress the priority of strengthening societal resilience are at all levels to:

Objective	What success looks like
13 Build a culture of resilience, including a 'future-ready' ethos, through promotion, advocacy, and education	By 2030, the concept of, and requirements for, resilience are observably built in to more facets of New Zealand society, culture, and economy than in 2019. Resilience is an accepted part of who we are and what we need to do to maintain our wellbeing and prosperity, including in policy, plans, job descriptions, and other statutory or contractual obligations.
14 Promote and support prepared individuals, households, organisations, and businesses	By 2030, emergency preparedness is part of everyday life. More people are able to thrive through periods of crisis and change because they have a plan to get through an emergency that they regularly practise, and have emergency supplies that are regularly checked and updated. Public, private, and civil society organisations are able to thrive through periods of crisis and change because they understand what they can do to improve their resilience, and are investing in improving their resilience. People and groups who have particular needs, or who are likely to be disproportionately affected by disasters, are engaged in planning and preparedness, and supported to build their resilience.
15 Cultivate an environment for social connectedness which promotes a culture of mutual help; embed a collective impact approach to building community resilience	By 2030, new methodologies and approaches mean that communities are more knowledgeable about risks, are empowered to problem-solve, and participate in decision-making about their future.
16 Take a whole of city/district/region approach to resilience, including to embed strategic objectives for resilience in key plans and strategies	By 2030, local authorities have adopted strategic objectives aimed at building resilience in their city/district, and work collaboratively with a broad range of partners to steward the wellbeing and prosperity of the city/district.
17 Recognise the importance of culture to resilience, including to support the continuity of cultural places, institutions and activities, and to enable the participation of different cultures in resilience	By 2030, there is an increased understanding and recognition of the role culture plays in resilience; there are improved multi-cultural partnership approaches to disaster planning and preparedness; and there is substantially increased resilience to disasters including cultural heritage.
18 Address the capacity and adequacy of critical infrastructure systems, and upgrade them as practicable, according to risks identified	By 2030, we more fully understand infrastructure vulnerabilities, including interdependencies, cascading effects and impacts on society; we have clarified and agreed expectations about levels of service during and after emergencies, and see infrastructure providers that are working to meet those levels (including through planning and investment), and; we have improved planning for response to and recovery from infrastructure failure.

Our commitment to action

E paiherea ana mātau ki te mahi

Transparency and social accountability

Governance

Measuring and monitoring progress



8. Our commitment to action

E paiherea ana mātau ki te mahi

Producing a strategy is not the end of thinking about resilience – it's the beginning

Ehara te whakairo rautaki i te whakamutunga o te whakaaro mō te manawaroa – he tīmatanga kē.

Two key features of this Strategy are, firstly, a determined effort to improve our national resilience to disasters, and secondly, taking a whole-of-society, inclusive, and collective approach to doing so.

This means holding ourselves to account is paramount.

We will do this in three main ways: a principle of transparency and social accountability, formal governance mechanisms, and measuring and monitoring progress.

8.1 Transparency and social accountability

It is critical that we are transparent about both our risks and our capacity to manage them. It is only by exposing the issues and having open conversations that we will make progress on overcoming barriers, and build on strengths and opportunities.

Efforts to tackle the challenge of accountability have traditionally tended to concentrate on improving the 'supply side' of governance, including methods such as political checks and balances, administrative rules and procedures, auditing, and formal enforcement processes.

These are still important, and will be built into the process to monitor this Strategy. However, we also want to pay attention to the 'demand side' of good governance: strengthening the voice and capacity of all stakeholders (including the public, and any groups disproportionately affected by disasters), to directly demand greater accountability and responsiveness from authorities and service providers.

Enhancing the ability of the public to engage in policy, planning, and practice is key.

We must find ever-more effective and practical ways to do this. This could include activities such as: representation on governance or planning groups, deliberate efforts to engage different stakeholder groups on specific challenges, citizen or civil society-led action, or utilising the whole new generation of engagement offered by social media.

8.2 Governance of this strategy

The Strategy will be owned and managed by existing governance mechanisms, including those through the National Security System, and at a regional level by CDEM Groups.

8.3 Measuring and monitoring progress

The monitoring and evaluation of resilience building initiatives in New Zealand must capture progress at several points along the pathway to lasting change. A Theory of Change (Figure 3) helps us think about how to assess the process of social change, beginning by defining the desired impacts on society and working backward to programme design and required inputs. The desired *impact* of government policy in New Zealand is to enhance the intergenerational wellbeing of New Zealanders. Through a resilience lens that must include the continuity and enhancement of wellbeing in the face of acute and chronic shocks.

The decisive measure of the disaster risk reduction and resilience programmes that we implement in New Zealand will be the extent to which it can be associated with reductions in the negative effects of shocks and stresses (*outcomes*). In most cases, however, we will need to evaluate changes to resilience in the absence of shocks and we will need to assess the actions that have been shown through research and practice to contribute to disaster risk reduction and resilience (*outputs*). Finally, to assess our capacity to achieve outputs, we must consider the required resources or *inputs* across the systems supporting resilience building initiatives.

Each step will require a different monitoring and evaluation focus, will fall within the remit of different actors, and be guided by separate, but overlapping policy frameworks. The logframe in Figure 4 highlights the logical linkages between each step in the theory of change model to the guidance and indicators needed for monitoring⁷.

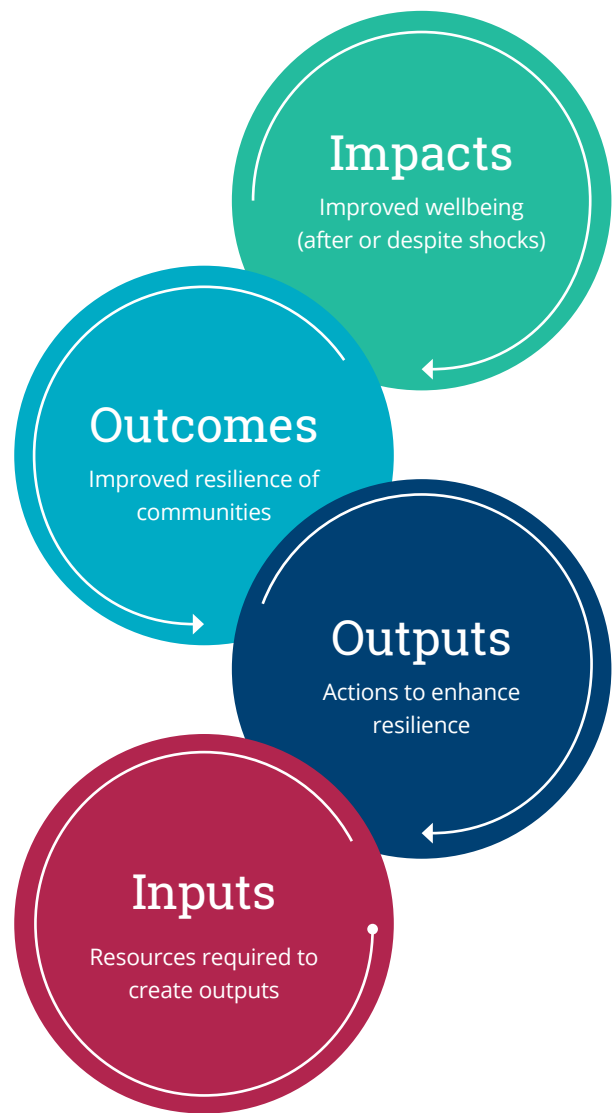


Figure 3 Theory of change for resilience



⁷ Acknowledgement: the measuring and monitoring regime for this Strategy was developed in association with the National Science Challenge Resilience to Nature's Challenges' Trajectories workstream, led by Dr Joanne Stevenson

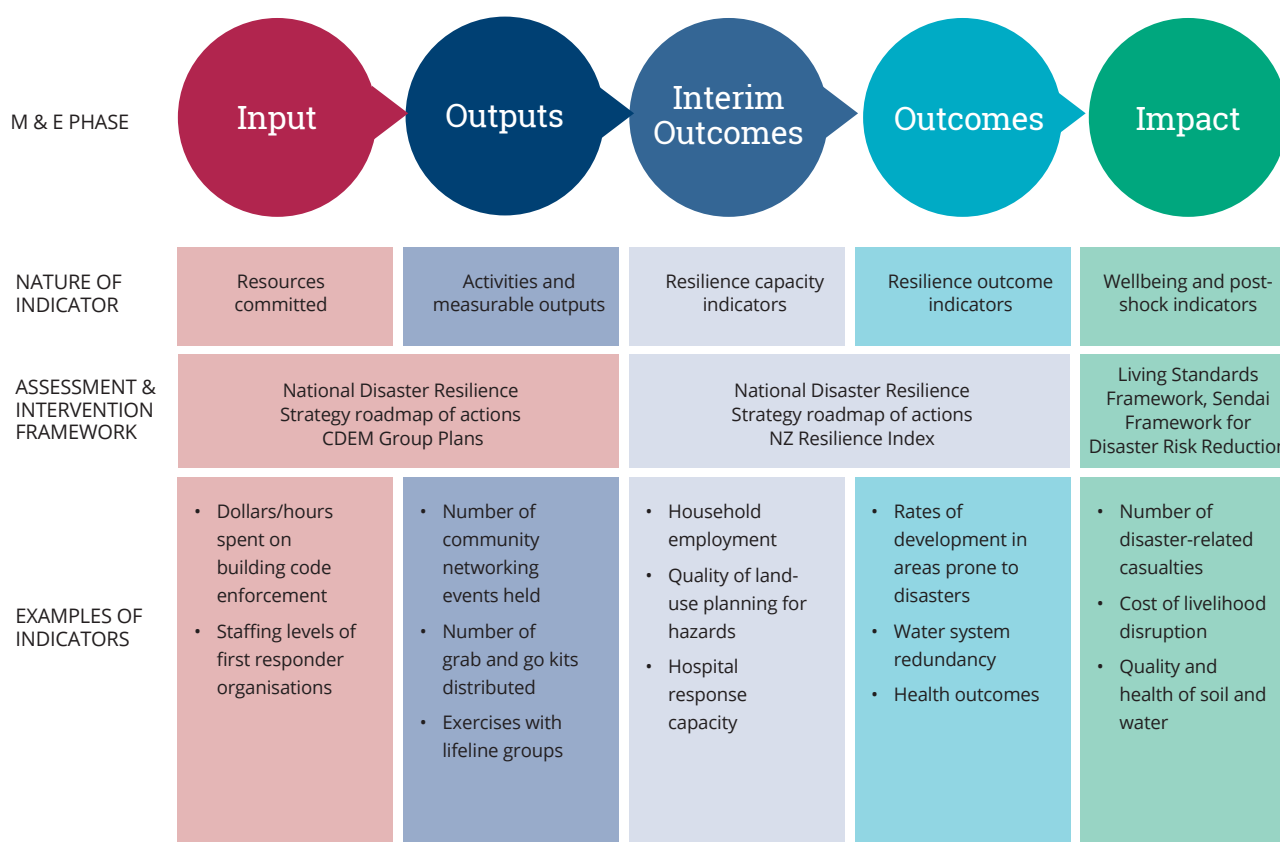


Figure 4 Logframe for resilience monitoring and evaluation

8.3.1 Measuring inputs and outputs: progress on our goals and objectives

Inputs and outputs will be guided by the roadmap of actions that will accompany the National Disaster Resilience Strategy, at a regional level by CDEM Group Plans, and at a local level by those designing and implementing resilience outreach and enhancement programmes in communities across New Zealand.

8.3.2 Measuring outcomes: progress on resilience

Interim outcomes refer to proxies that have been identified through research and practice to reflect systems' capacity to absorb the negative effects of shocks and adapt and transform in dynamic environments. Outcomes are items that can directly confirm that targeted systems (e.g., individuals, communities, infrastructure systems) are able to absorb, respond, recover, adapt, or transform in the face of hazards and disasters.

A resilience index developed as part of the National Science Challenge: Resilience to Nature's Challenges will capture progress on a series of indicators designed to measure resilience attributes.

8.3.3 Measuring impact: progress on reduced losses from disasters

Our progress towards the desired impact we want to have will be measured by tracking losses from emergencies on an annualised basis, compared against baseline data collected for 2005-2015. This reflects our Sendai Framework reporting requirements.

Definitions, scope, and baseline data for these monitoring mechanisms will be produced in a separate, supporting document.

8.3.4 Formal reporting

Progress on this Strategy will be reported biennially by the Ministry of Civil Defence and Emergency Management, for the duration of its term, and will include:

- Progress on goals and objectives
- Progress on resilience, and
- Progress on impacts

These reports will be publicly available.

Appendices

Ngā āpitihanga

Overview of this Strategy

What can I do?

Analysis of our current state as a baseline for this Strategy

Two key opportunities



Appendix 1: Overview of this Strategy

National Disaster Resilience Strategy

Working together to manage risk and build resilience

Our Vision

New Zealand is a disaster resilient nation that acts proactively to manage risks and build resilience in a way that contributes to the wellbeing and prosperity of all New Zealanders

Our Goal

To strengthen the resilience of the nation by managing risks, being ready to respond to and recover from emergencies, and by empowering and supporting individuals, organisations, and communities to act for themselves and others, for the safety and wellbeing of all.

We will do this through:

1 Managing Risks

2 Effective Response to and Recovery from Emergencies

3 Strengthening Societal Resilience

OUR OBJECTIVES

1. Identify and understand risk scenarios (including the components of hazard, exposure, vulnerability, and capacity), and use this knowledge to inform decisionmaking
2. Put in place organisational structures and identify necessary processes to understand and act on reducing risks
3. Build risk awareness, risk literacy, and risk management capability, including the ability to assess risk
4. Address gaps in risk reduction policy (particularly in the light of climate change adaptation)
5. Ensure development and investment practices, particularly in the built environment, are risk-sensitive, taking care not to create any unnecessary or unacceptable new risk
6. Understand the economic impact of disaster and disruption, and the need for investment in resilience. Identify and develop financial mechanisms that support resilience activities.

7. Implement measures to ensure that the safety and wellbeing of people is at the heart of the emergency management system
8. Strengthen the national leadership of the emergency management system to provide clearer direction and more consistent response to and recovery from emergencies
9. Improve legislation policy and planning to ensure it is clear who is responsible for what, nationally, regionally, and locally, in response and recovery
10. Build the capability and capacity of the emergency management workforce for response and recovery
11. Improve the information and intelligence system that supports decision-making in emergencies to enable informed, timely, and consistent decisions by stakeholders and the public
12. Embed a strategic approach to recovery planning that takes account of risks identified, recognises longterm priorities, and ensures the needs of the affected are at the centre of recovery processes

13. Build a culture of resilience, including a 'future-ready' ethos, through promotion, advocacy, and education
14. Promote and support prepared individuals, households, organisations, and businesses
15. Cultivate an environment for social connectedness which promotes a culture of mutual help; embed a collective impact approach to building community resilience
16. Take a whole of city/district/region approach to resilience, including to embed strategic objectives for resilience in key plans and strategies
17. Recognise the importance of culture to resilience, including to support the continuity of cultural places, institutions and activities, and to enable the participation of different cultures in resilience
18. Address the capacity and adequacy of critical infrastructure systems, and upgrade them as practicable, according to risks identified

Appendix 2: What can I do?

Ngā āpitihanga 2: He aha he mahi māku?

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Individuals and families/whānau

Te tangata me ngā whānau



Understand your risk

... the hazards or disruptions you could experience, your exposure – the things you have that are at risk to those disruptions, and your vulnerability – how you and your things might be adversely affected.

Reduce your risk factors

Think about the range of ways you could reduce your exposure or vulnerability, and invest in doing so where possible.

Future proof where possible

When making new purchases, think about how to future-proof yourself and build in resilience.

Prepare yourself and your household

Think about the range of impacts that could occur from crises or emergencies (for example, power, water, or communications outages, access or transport issues, the need to stay in or out of your home for an extended period), and think about the things you would want or need to have available to you during that time.

Plan for disruption

... including to consider how you would meet up with family/whānau and friends if there was a communications outage or access issues.

Stay informed

Find out more; talk to others about risk and resilience; sign up for alerts and warnings.

Know your neighbours

... and participate in your community – you are each other's front line.

Businesses and organisations

Ngā pakihi me ngā whakahaere



Understand your risk

in all its dimensions (in terms of the hazards or disruptions you could experience, your exposure – the assets you have that are at risk to those disruptions, your vulnerability – how your assets and business might be adversely affected, and your capacity – the strengths and resources you have available to manage it) so you can make good decisions about how to manage it.

Make resilience a strategic objective and embed it in appropriate plans and strategies

The continuity of your business (and the wellbeing of the people that rely on your products/services) depends on it.

Invest in organisational resilience

By a) reducing and managing the factors that are causing your risk, b) ensuring comprehensive business continuity planning, and c) considering and building your adaptive capacity.

Benefit today, benefit tomorrow

Try to find solutions that have an everyday benefit and any crisis/disaster benefit is by-product.

Consider your social impact

Consider how you can contribute to the resilience of your community, city or district – for social good, or because there are benefits for you.

Keep the long term in mind

Consider the longer-term changes in your environment, for example, the impact of climate change, and what you could do about them

Collaborate with others and build your network

Find others with similar objectives in respect of risk and resilience, and collaborate with them – we are stronger together, and you have much to contribute and gain.

Learn about response and recovery

Understand how response and recovery will work in your district or area of interest, and build your own capacity to respond to and recover from disruption.

Communities and hapū

Ngā hapori me ngā hapū



Understand your risk

Seek to build a collective understanding of your risks: the hazards or disruptions you could face, your collective exposure in terms of people, property, and assets, and your vulnerabilities – how your people/property/assets could be adversely affected.

Reduce your risk factors

Consider whether there are ways to reduce your community's exposure or vulnerabilities – it needn't cost money, but there may be avenues if it does.

Keep the long-term in mind

Consider the longer term changes in your environment, for example, the impact of climate change, and what you could do about them.

Learn about response and recovery

Understand how response to and recovery from emergencies will work in your district.

Understand your collective resources

Think about what resources you have, now or in an emergency, and how you could put them to work.

Make a plan

Community response and recovery planning helps communities understand how they can help each other after a disaster. Ask your local emergency management office for help if you need it.

Benefit today, benefit tomorrow

Try to find solutions that have an everyday benefit and any crisis/disaster benefit is by-product.

Organise community events

Communities who know each other are stronger communities – in good times and in bad.

Cities and districts

Ngā tāonenui me ngā takiwā



Understand your risk

Identify and understand risk scenarios, including what is driving high risk ratings, and use this knowledge to inform decision-making.

Organise for resilience

Consider whether your governance of risk and resilience is fit for purpose; engage all interested parties and take a whole-of-city/district approach.

Make resilience a strategic objective

Make resilience a cross-cutting strategic objective: the economic prosperity of your city/district, and the wellbeing of your communities depend on it.

Lead, promote, and champion

... city/district-wide investment in resilience; ensure resilience is a vital partner to economic development.

Tackle gaps in hazard risk management policy

... including matters of retreat or relocation from high risk areas, and adaptation to climate change.

Pursue resilient urban development

... including risk-aware land-use decisions, and urban design and growth that incorporates resilience.

Increase infrastructure resilience

Assess risk, and ensure the resilience of critical assets and continuity of essential services.

Safeguard natural buffers

... to enhance the protective functions offered by natural ecosystems.

Strengthen financial capacity

Understand the economic impact of disasters in your area, and the need for investment in resilience. Identify and develop financial mechanisms that can support resilience activities.

Strengthen societal capacity

Cultivate an environment for social connectedness which promotes a culture of mutual help. Support and enable grassroots efforts and organisations. Support diversity and promote inclusion.

Invest in organisational resilience

... by ensuring you have comprehensive business continuity planning in place, and by considering and building your adaptive capacity.

Build your capability and capacity for response and recovery

... including next-level, designed-for-the-future capability.

Government and national organisations Kāwanatanga me ngā whakahaere ā-motu



Organise for resilience

Participate in mechanisms for the coordination of risk and resilience activity, and the implementation of this Strategy.

Monitor, assess and publicly report

... on a) national risks, b) economic loss from disasters, c) resilience, and d) progress on this strategy.

Champion resilience approaches

... and whole-of-society participation; promote stewardship | kaitiakitanga, wellbeing | manaakitanga, and working together | whanaungatanga.

Make resilience easy

... affordable, and common sense for clients, stakeholders, partners, decision-makers, and the public.

Invest in organisational resilience

... by a) understanding risk scenarios, including what is driving high risk ratings for your organisation and/or clients, b) reducing and managing the factors that are causing your risk, b) ensuring comprehensive business continuity planning, and c) considering and building your adaptive capacity.

Invest in societal resilience

... by understanding societal needs and values, before, during, and after emergencies. Ensure investments are multi-purpose, for stronger communities today and in case of emergency,

Work together

... and align risk/resilience-related policy and practice.

Tackle our complex risks

Tackle and progress some of the most complex risks facing society, including approaches for addressing risk in the highest hazard communities, and adapting to climate change.

Build capability and capacity

... including next-level, designed-for-the-future response and recovery capability.

Appendix 3: Analysis of our current state as a baseline for this Strategy

In order to form an effective strategy for the future and move towards a state of enhanced resilience, it is useful to look at our current state – our strengths, barriers, and opportunities – and how we capitalise on areas of strength and opportunity, overcome obstacles to progress, and make the smartest possible choices about actions and investment. Furthermore, in the quest to be ‘future ready’, it is useful to consider what other environmental and societal trends are occurring around us, even now, and how we can use them to build our resilience.

Strengths

New Zealand already has a number of strengths in respect of disaster resilience.

1. We have good social capital in our communities. New Zealand communities are aware, knowledgeable, passionate, and well-connected. In general, they have a strong sense of local identity and belonging to their environment, a belief in manaakitanga and concern for their fellow citizens, and a sense of civic duty.
2. We are a first world nation that has comprehensive education, health, and social welfare systems, which build our people and look after the most vulnerable in society.
3. We have a strong cultural identity, including the special relationship between Māori and the Crown provided through the Treaty of Waitangi. New Zealand is also one of a handful of culturally and linguistically ‘super-diverse’ countries, which brings a number of economic and social benefits (the ‘diversity dividend’). We value our culture, our kaupapa and tikanga. We celebrate and foster a rich and diverse cultural life.
4. We have a high-performing and relatively stable economy. The New Zealand economy made a solid recovery after the 2008-09 recession, which was shallow compared to other advanced economies. Annual growth has averaged 2.1% since March 2010, emphasising the economy’s resilience.
5. We have very high insurance penetration. Most countries struggle to get their ratio of insured to non-insured up to an acceptable level. Because of the Earthquake Commission, New Zealand’s insurance penetration is 98 per cent. This means that a good proportion of the economic costs of most natural hazard events are covered by re-insurance.
6. We have a stable political system, low levels of corruption, and freedom of speech.
7. We have a good range of policy in place for disaster risk management, including the Civil Defence Emergency Management Act 2002, the Resource Management Act 1991, the Building Act 2004, the Local Government Act 2002, and a range of other legislation and regulatory instruments. This includes regulation for land-use and building standards – critical factors in building more resilient futures.
8. We have an effective national security coordination system that takes an all-hazards approach and has governance at the political, executive, and operational levels.
9. At the regional level consortia of local authorities, emergency services, lifeline utilities, and social welfare agencies (government and non-government) form Civil Defence Emergency Management Groups that coordinate across agencies and steward emergency management in their regions.
10. We have an engaged and well connected science community, including a number of platforms specifically targeting the advancement of knowledge and understanding about natural hazards and resilience. In general, there are good links between scientists, policy makers and practitioners. Scientists practice an increasing level of community outreach, engage in a co-creation approach, and are focussed on outcomes.
11. Organisations and agencies work well together. While there’s always room for improvement, a multi-agency approach is the ‘norm’, which means better coordination of activities, more efficient use of resources, and better outcomes.
12. We are a small country, which makes us well-connected, uncomplicated, and agile. We can ‘get things done’ in relatively short order.
13. We are experienced. We have seemingly had more than our fair share of crises, emergencies, and disasters over the last ten years. This has brought some bad times, but the silver lining is the awareness that it has built in everyone, the knowledge about ‘what works’ and what is needed, and the willingness to act.

Barriers to resilience

While we have a lot going for us, we also have some things that limit our resilience. The process to develop this strategy identified a number of barriers to resilience, and barriers to our pursuit of resilience.

What is limiting our resilience?

1. Some of our people still suffer considerable poverty, social deprivation, and/or health issues that limit wellbeing, quality of life, and resilience.
2. Our level of individual and household preparedness for emergencies is not as high as it should be, given our risks.
3. Our businesses and organisations are not as prepared as they could be, leading to loss of service and losses in the economy when severe disruption strikes.
4. Some of our critical assets and services are ageing and vulnerable. These are in most places being addressed by asset management plans and asset renewal programmes, (including strengthening, conservation and restoration), but these will take time (and resources) to implement.
5. We live in some high-risk areas, and are continuing to build in high-risk areas – particularly around the coast, on steep slopes, fault lines, reclaimed land, and flood plains. We live and build there because they are nice places to live, and because sometimes there is no other choice. However, at some point we need to consider – how much risk is too much?
6. We are only just starting to tackle some of the ‘truly hard’ issues around existing levels of risk, such as how to adapt to or retreat from the highest risk areas, including to adapt to the impacts of climate change. There is likely high cost around many of these options.
7. We have gaps in our response capability and capacity, as outlined in a recent Ministerial Review into better responses to emergencies in New Zealand (Technical Advisory Group report, 2017). These are predominantly around capability of individuals, capacity of response organisations, and powers and authorities of those individuals and organisations to act. The review also identified issues with communication and technology, in particular, the challenges of response intelligence and communications staying apace with social media.

What is limiting our pursuit of resilience?

1. Not enough people and organisations are taking action to prepare or build their resilience for disasters. This is generally either because it is seen as too expensive or difficult, because of other priorities, because it ‘might never happen’, or because of an expectation of a rapid and comprehensive institutional response.
2. Building community resilience – even where playing a facilitative role – is resource intensive. It also requires a high level of skill and understanding to navigate diverse communities and complex issues.
3. Emergency management issues tend to be ‘headline’ issues that require immediate corrective action. This is understandable, and needed, but means we often focus more on fixing the problems of the day, and addressing issues from the last event, than forecasting the future and taking action for the long-term.
4. Risk reduction and resilience are often perceived as ‘expensive’, and limiting of economic development and business growth.
5. At the same time, the full cost of disasters often isn’t visible (particularly the cost of indirect and intangible impacts, including social and cultural impacts), meaning it isn’t factored into investment decision-making.
6. Perverse incentives don’t encourage resilience – too often, as a society, we are aiming for the ‘minimum’ standard or ‘lowest cost’. This can deter people from aiming higher or for the ‘most resilient’ solution.
7. Recovery is often underestimated. The Christchurch earthquake recovery and many other smaller events have shown us just how complex, multi-faceted, difficult, expensive, and long-term recovery is. Other parts of the country need to consider how they would manage recovery in their city or district, and give priority to resourcing capability and capacity improvements.
8. We have had difficulty translating resilience theory into action. There is an abundance of academic theory on resilience, but turning that theory into practical action has, until recently anyway, been difficult to come by.

Opportunities

As well as strengths and barriers, it is important to consider what opportunities we have or may have on the horizon. The opportunities the strategy development process has identified are:

1. Awareness and understanding of disasters, disaster impacts and disaster risk, is at an all-time high following a series of domestic events over the last 5-10 years, including the Canterbury and Kaikōura earthquakes. This includes a willingness to act on lessons and to do so in a smart, coordinated, and collaborative way.
2. Our hazards are obvious and manifest. This is both a curse and an opportunity: we have high risk, but we also have an awareness, understanding, and willingness to do something about them, in a way that countries with less tangible risks might not. If we address risk and build resilience to our 'expected' hazards, we will hopefully be better prepared for when the 'less expected' hazards occur.
3. We have an incredible wealth of resilience-related research currently underway, including several multi-sectoral research platforms that aim to bring increased knowledge to and improved resilience outcomes for New Zealanders. Over the next few years there will be a steady stream of information about 'what works', and tried and tested methodologies we can employ in all parts of society.
4. We also have a lot of other work – in terms of resilience-related policy and practice – underway in organisations at all levels and across the country. Connecting the pieces of the jigsaw, sharing knowledge, and working together should enable even more improved outcomes.
5. There is a particular opportunity for building processes that support collective impact. Collective impact is a way of organising a range of stakeholders around a common agenda, goals, measurement, activity, and communications to make progress on complex societal challenges. [see page 46]
6. The introduction of the three post-2015 development agendas (Sendai Framework, Sustainable Development Goals, and Paris Agreement for Climate Change) brings an additional impetus and drive for action, as well as practical recommendations that we can implement. They also bring a strong message about integration, collaboration, and a whole-of-society approach.
7. The Government has a strong focus on wellbeing, particularly intergenerational wellbeing, and improved living standards for all. Simultaneously, local government has a renewed interest in the 'four wellbeings' with those concepts being re-introduced to the Local Government Act as a key role of local government. These priorities are entirely harmonious, and lead swiftly into a conversation with both levels of government on how to protect and enhance living standards through a risk management and resilience approach.
8. We have only just begun to scratch the surface of best resilience practice, including how to make the most of investment in resilience. There is much to learn from the Triple Dividend of Resilience [see page 47] – ensuring our investments provide multiple benefits or meet multiple needs, and are the smartest possible use of limited resources. The Triple Dividend also supports better business cases, allowing us to better position our case for resilience and convince decision-makers of the benefits of investment.
9. We are a small agile nation. We are ambitious, innovative, motivated, and informed: we can lead the world in our approach to resilience.

‘Wild cards’

The world is changing at an unprecedented rate driven by technical innovation and new ways of thinking that will fundamentally transform the way we live. As we move away from the old structures and processes that shaped our past, a new world of challenges and opportunities awaits us. While there might be uncertainty about how some of these factors might shape our risk and our capacity to manage that risk, there are some common implications that are critical to take account of as we work to build resilience.

1. The revolution in technology and communication is a key feature of today's world. Regardless of the issue, technology is reshaping how individuals relate to one another. It shifts power to individuals and common interest groups, and enables new roles to be played with greater impact. Organisations and groups that can anticipate and harness changing social uses of technology for meaningful engagement with societal challenges will be more resilient in the future.
2. Local organisations and grassroots engagement is an important component. This is driven in part by the aforementioned technology and communication shifts that give local groups more influence and lower their costs for organising and accessing funding, but also the rising power of populations in driving actions and outcomes.
3. Following on from these, populations currently under the age of 30 will be a dominant force in the coming two decades – both virtually, in terms of their levels of online engagement, and physically, by being a critical source of activity. Younger generations possess significant energy and global perspectives that need to be harnessed for positive change.
4. The role of culture as a major driver in society, and one that desperately needs to be better understood by leaders across governments, the private sector, and civil society. Culture is a powerful force that can play a significant role (both positive and negative, if it is not handled sensitively), and is therefore a force with which stakeholders should prepare to constructively engage.
5. High levels of trust across organisations, sectors and generations will become increasingly important as a precondition for influence and engagement. This trust will need to be based on more than just the existence of regulations and incentives that encourage compliance. Organisations can build trust among stakeholders via a combination of “radical transparency” and by demonstrating a set of social values that drive behaviour that demonstrates an acknowledgement of the common good.
6. The importance of cross-sector engagement, particularly between government, the private sector, and civil society. The challenge of disaster risk can no longer be the domain of government alone. A collective approach is needed, including to utilise all resources, public and private, available to us, and to consider innovative approaches to managing and reducing risk. This includes the private sector and civil society participating in policy and planning, and oversight and decision-making. This requires active participation on the part of the private sector, and transparency, openness, and responsiveness on the part of politicians and public officials.
7. The need for higher levels of accountability, transparency, measurement. More work is required to ensure that those tackling societal challenges have the appropriate means of measuring impact. These mechanisms will need to be technology-enabled, customised to the challenge at hand, and transparent.

Appendix 4: Two key opportunities

Working together: making collective impact

Collective Impact is a framework to tackle complex social problems. It is a structured approach to making collaboration work across government, business, non-profit organisations and communities to achieve significant and lasting social change.

The Collective Impact approach is premised on the belief that no single policy, government department, organisation or program can tackle or solve the increasingly complex social problems we face as a society. The approach calls for multiple organisations or entities from different sectors to set aside their own, specific agendas in favour of a common agenda, shared measurement and alignment of effort. Unlike collaboration or partnership, Collective Impact initiatives have centralised infrastructure – known as a backbone organisation – with dedicated resources to help participating organisations shift from acting alone to acting in concert.

Collective Impact was first written about in the Stanford Social Innovation Review in 2011. Five key elements were identified:

- 1. A common agenda**
This means coming together to collectively define the problem and create a shared vision to solve it.
- 2. Shared measurement**
This means agreeing to track progress in the same way, which allows for continuous improvement.
- 3. Mutually reinforcing activities**
This means coordinating collective efforts to maximize the end result.
- 4. Continuous communication**
This means building trust and relationships among all participants.
- 5. A backbone organisation**
This means having a team dedicated to orchestrating the work of the group.

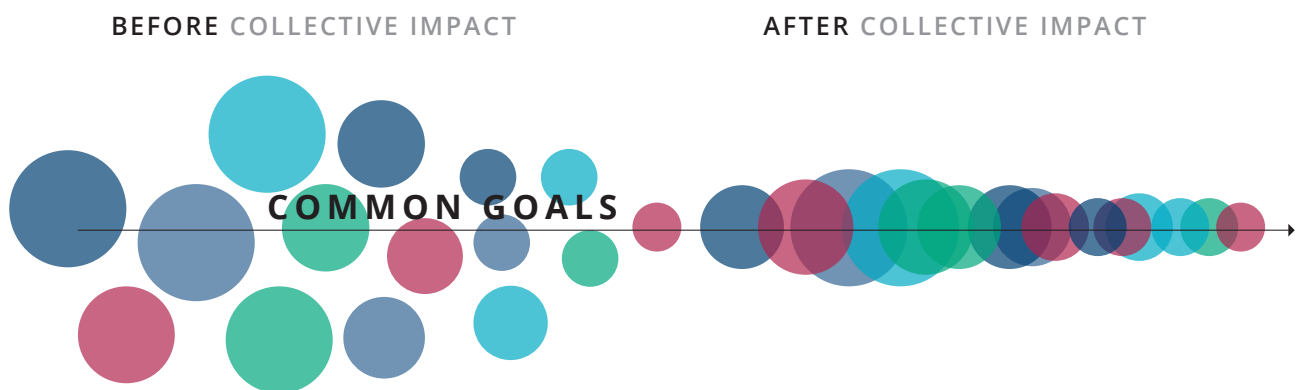


Figure 5 Common goals, before and after Collective Impact

This Strategy aims to emulate the intent and conditions of collective impact. The process to develop this Strategy was based on a series of workshops around the country over two years; a measurement and monitoring regime will track achievement of objectives and ensure we are making progress towards outcomes; the objectives of the Strategy detail focus areas in which we can undertake a series of mutually-reinforcing activities at all levels;

the Strategy advocates strongly for relationship and partnership building, and the emergency management sector, through the National CDEM Plan, and regional CDEM Group Plans act as backbone organisations, driving the agenda and coordinating activity.

Changing the narrative: the triple dividend of resilience

In New Zealand we have first-hand, recent examples of how much disasters can cost. The direct costs alone can be significant; as we start to consider methodologies for counting the economic cost of social impact, the total cost of disasters and disruptive events will be significantly more – maybe even double the reported ‘direct’ costs.

Even so, it is often difficult to make a case for investment in disaster risk management and resilience, even as we cite research on benefit-cost ratios – how upfront investment in risk management can save millions in future costs. We know these ratios to be true, we have seen examples of it, even here in New Zealand, so why is it such a hard case to make?

Other than short-term political and management cycles, it is generally due to how we calculate ‘value’. Traditional methods of appraising investments in disaster risk management undervalue the benefits associated with resilience. This is linked to the perception that investing in disaster resilience will only yield benefits once disaster strikes, leading decision-makers to view disaster risk management investments as a gamble that only pays off in the event of a disaster – a ‘sunk’ cost, that gives them no short-term benefit.

However, there is increasing evidence that building resilience yields significant and tangible benefits, even if a disaster does not happen for many years – or ever.

A 2015 report outlines the ‘Triple Dividend of Resilience’, or the three types of benefits that investments in disaster risk management can yield. They are:

1. Avoiding losses when disasters strike
2. Stimulating economic activity thanks to reduced disaster risk, and
3. Generating societal co-benefits.

While the first dividend is the most common motivation for investing in resilience, the second and third dividends are typically overlooked. The report presents evidence that by actively addressing risk, there can be immediate and significant economic benefits to households, the private sector, and, more broadly, at the macro-economic level. Moreover, integrating multi-purpose designs into resilience investments can both save costs, and provide community and other social benefits (for example, strengthened flood protections works that act as pedestrian walkways, parks or roads).

New Zealand needs to learn from this concept and ensure that our investments in resilience are providing multiple benefits to both make smart use of our limited resources, and to assure decision-makers that their investment is worthwhile, and will pay dividends – in the short and long term.

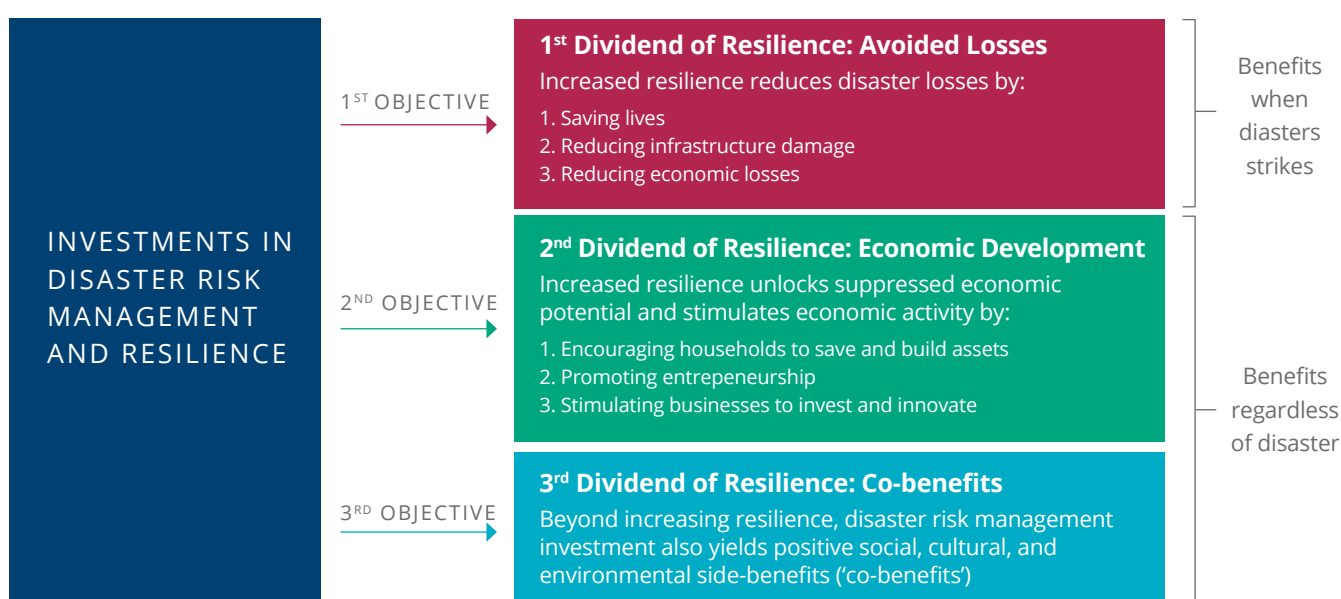


Figure 6 The Triple Dividend of Resilience Investment

Adapted from: The Triple Dividend of Resilience – Realising development goals through the multiple benefits of disaster risk management (Global Facility for Disaster Reduction and Recovery, the World Bank, Overseas Development Institute, 2015)

