



EUREKA!

Governor General's Eureka! Young Science Leaders Forum

2019 – A QUESTION OF RESILIENCE

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The challenge

Each year, the forum challenges young science leaders to come up with approaches to a significant issue facing New Zealand. In 2019, this challenge was resilience.

At a time when our cities and regions are having to adapt to rapidly changing communities and the environment, ageing infrastructure and fluctuating economies (here and overseas), participating teams were set a key challenge to **define resilience**. They were asked to share ideas for building resilience and to identify enablers and inhibitors of resilience.

Forum attendees (46 of whom were secondary school or university students) listened to presentations from climate scientist Dr James Renwick (Victoria University of Wellington), the Head of Resilience Strategy and Research (EQC) Dr Jo Horrocks and PhD student at the joint Massey University/GNS Science Centre for Disaster Research Lisa McLaren. They then discussed issues in small groups and student leaders in each group reported back on their discussions and recommendations, focusing on four main themes:

- Community resilience
- Inner resilience
- Economic resilience
- Infrastructural resilience

General feedback

The first question the teams considered was whether New Zealanders are resilient people now.

The answer was a cautious yes. The team leaders reported back that there are several factors that make New Zealanders more resilient in the face of challenging events. These include heightened awareness or direct experience of natural disasters such as earthquakes and floods, a pioneering spirit and “can do” approach to problems, an innovative culture and willingness to learn from failure and, most importantly, a sense of kotahitanga and solidarity as a nation at times of tragedy such as the Christchurch mosque shootings on 15 March 2019.

But participant also noted that New Zealand continues to rely on a small number of significant industries, mainly the primary sector and tourism, both of which rely on a healthy environment while at the same time changing, or even damaging it. The teams added that as an island nation surrounded by the vast Pacific Ocean, New Zealand’s capacity for resilience could be affected by biosecurity issues (the exposure to risks from unwanted organisms) and the need to transport goods across long distances. Both risk factors are expected to become more serious in a warming world.

The discussions then moved on to a definition of resilience, which was generally seen as a sense of preparedness, physically and emotionally, to anticipate change and to do what we can to plan for events that disrupt everything we know. Students described resilience as the ability to prepare for change, adapt to it and to develop the capacity to recover quickly from difficult situations.

Participants noted that resilience required a willingness to live with uncertainty and to develop planning methods that continue to adapt to changed circumstances.

Optimism and hope, and the wish to make a better future for everybody, were also seen as part of a resilient culture. An overarching theme across all discussions was a call for diversity and an openness to listen to, and incorporate, different community voices.

Summary of recommendations

The participants discussed what would need to happen to make people, communities and infrastructure more resilient. There was significant overlap in ideas, particularly between economic and infrastructural resilience and between community and inner resilience, respectively.

Economic resilience

Participants noted that in order to increase economic resilience, New Zealand should:

- redefine some core values, such as sustainability and equality;
- diversify the economy to reduce dependence on the primary sector and tourism
- diversify the primary sector to limit the risk of biosecurity incursions or changing societal preferences for agricultural produce
- build up secondary industries to keep skills and knowledge in New Zealand and to recruit talent, create jobs
- invest more in research and development in New Zealand, make it the world's "capital of ideas"
- implement subsidies and/or taxes to help the transition to a low-carbon economy
- provide more comprehensive consumer information to allow people to make better choices
- keep track of changing demands and consumer preferences overseas
- safeguard key exports
- provide incentives for farmers to develop more sustainable practices
- nurture relationships with other countries and trading partners
- question the necessity of growth and whether GDP is the best indicator of progress
- look beyond the tension between short-term growth and long-term sustainability
- make the economy more robust
- better understand factors that lead to urban/rural migration
- work to reduce inequality and to increase equity in access to education, work
- ensure that a transition to a more diverse and low-carbon economy is just, leaving nobody behind.

Infrastructural resilience

Participants noted that in order to increase infrastructural resilience, New Zealand should:

- look towards nature for answers to major ecological and environmental issues (e.g. dune restoration to make coastlines more resilient, wetland restoration to improve freshwater quality)
- increase awareness by involving schools in more than curriculum requirements; encourage direct participation in restoration projects and sustainability initiatives (e.g. school gardens)
- develop tax incentives and financial instruments to boost resilience, including insurance products that place an incentive on pre-disaster response planning
- develop backup plans for basic infrastructure such as hospitals, schools, water, power, communications, waste/sewage, roads, ports
- make carbon offsets compulsory
- provide incentives for people to use public transport, from trains and buses to car-share apps
- encourage uptake of electric cars through financial incentives
- make 100% renewable electricity generation a clear target
- encourage innovation towards sustainable technologies
- provide public places for people to connect and gather, including libraries and churches
- strengthen and support the role marae can play following a natural disaster
- develop a national adaptation plan to prepare for the predictable impacts of climate change
- implement rules and basic regulations, and effective systems of implementation, to encourage resilience
- strengthen community structures so that people have networks to help each other during times of infrastructural breakdown
- use mobile networks as emergency communications tools
- develop backup systems for pandemics response logistics so they remain operational during a crisis
- establish and support a neutral, independent news source people can trust to disseminate factual information (an example was suggested to use Wikipedia as a framework, making the dissemination of information more democratic).

Community resilience

Participants noted that in order to increase community resilience, New Zealand should:

- focus on building interconnected and diverse communities
- empower youth to participate in public affairs (e.g. consider lowering the voting age, encourage young people to engage in local politics and become community leaders)
- strengthen cultural awareness
- teach skills of empathy to remove apathy
- incorporate mātauranga Māori in policy development
- learn from other countries' experiences, but adapt to New Zealand context; share knowledge
- take advantage of the benefits of a small population which should make it possible to implement change more quickly
- increase awareness of New Zealand's unique environment and impacts of climate change; improve understanding of locally specific impacts, such as sea level rise at a particular beach, and the variation across New Zealand
- increase awareness of risk behaviour patterns (risk acceptance or aversion) and develop planning frameworks that accommodates these
- plan ahead to be proactive rather than reactive to change
- strengthen the education sector to practise resilience skills, physical and mental, from an early age
- develop student volunteering programmes to provide opportunities to grow skills and networks
- uplift community values, strengthen community cohesion and reward community leaders
- use best available technology to reach out to vulnerable people
- support young people to own their home to help create stable neighbourhoods, networks between schools and families, a sense of belonging and willingness to look after each other
- develop skills for short-term resilience (bouncing back after an event) and long-term preparedness (flexible planning, community support)

- establish motivation to create change
- build a sense of national solidarity
- build political resilience by strengthening local authorities and developing national policy statements of major issues (e.g. adaptation to climate change)
- strengthen capacity in civil defence and the level of preparedness in individual households
- highlight the importance of useful, accurate, unbiased information (e.g. publicly funded media, non-commercial media models)
- support events that help galvanise community, reduce sense that everyone is only responsible for themselves
- tap into shared connections to establish sense of community while growing diversity
- survey what people are prepared to do for highly impacted communities, identify gaps where structured support will be needed
- develop role models for community building and to understand diverse perspectives
- find balance between being realistic and optimistic, while acknowledging the urgency of action on climate change and the pace of change required
- plan for significant numbers of people being displaced, either within New Zealand or arriving here from other parts of the world, overwhelmed by the impacts of climate change.

Inner resilience

Participants noted that in order to increase inner resilience, New Zealand should:

- establish stronger mental health support, including financial support for exiting programmes and development of new initiatives for youth and tangata whenua
- address issues of well-being beyond economic/financial factors
- work to reduce apathy, fear and a sense of powerlessness
- empower people with unbiased information and opportunities to participate, learn skills, connect
- acknowledge rising levels of anxiety and depression and establish support

- develop educational initiatives to teach skills and character strengths to cope at times of adversity
- set achievable milestones to avoid resistance to change and fear of failure
- build on principles of Māori well-being (Ministry of Health Te Whare Tapa Wha), which uses the symbol of the wharenuī to illustrate the importance of the four pillars of spiritual, family, mental and physical health
- encourage people to take action
- acknowledge a diversity of responses that depend on individual perspectives and personal outlook
- encourage distributed, renewable electricity to give people more control (“ownership”) over their use
- promote local political leaders who work towards climate action to avoid future impacts and to build resilience
- develop financial planning and insurance management that take climate risk into account, but keep insurance affordable
- strengthen personal networks to rely on during times of adversity
- focus on issues that rise above politics
- encourage active participation
- encourage and teach humour as a coping strategy to lower stress levels
- develop better communication systems to reach people in distress
- encourage a positive, optimistic and hopeful outlook and readjust expectation to lessen fear and anxiety
- encourage proactive behaviour, provide opportunities for people to be involved in local planning and activities to ease anxiety about the future
- avoid the trap of waiting for somebody else to start the transition to a low-emissions economy, both on a local scale as well as internationally
- encourage boldness, courage, leaps of faith
- listen to younger generations, acknowledge that they need to be part of planning their future
- avoid mass panic.

A resilient future

Several suggestions for how New Zealand could become a more resilient country emerged from the feedback from each group and across all four themes. These fundamental requirements include access to unbiased, reliable information that is freely and widely available, vetted, fact-checked and provided through both educational programmes and the media.

Better support for mental health was also mentioned frequently, acknowledging that levels of anxiety are likely to continue rising and that planning for a resilient future will have to include more comprehensive support programmes and strategies to recognise mental health issues.

Another essential aspect was direct participation and input from a diverse group of people to make sure that decision-making processes incorporate different views. In practical terms, this could mean that more decisions are made through referenda rather than by a small group of elected representatives.

Having backups for essential systems and regular community resilience practise sessions (much like earthquake or fire drills) was also among suggestions from each group as a way of scaffolding people's ability to prepare, respond and recover from challenges. And finally, all participants stressed the urgency of a fair transition to a low-emissions economy.