

Risk listening: rethinking how we understand and manage risk

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RISK LISTENING: RETHINKING HOW WE UNDERSTAND AND MANAGE RISK

2023 will be full of debate, recrimination and investigation into how New Zealand manages risk. There will be a royal commission inquiry into the management of the pandemicⁱ. We are already seeing the start of the inquiry into preparations for and the aftermath of Cyclone Gabrielle and the other recent weather bombs which caused destruction across the North Island, leading to questions relating to the state of our infrastructure. Across these very different events, issues of risk assessment and response will dominate policy, political and media commentaries. There is a danger this discussion will be politicised, yet the underlying issues are long-term and non-partisan.

As when other calamities have struck, including the 2010 and 2011 Christchurch earthquakes, Cyclone Gabrielle reminds us that these events are never just matters for a single agency or ministry to contend with. Such occurrences have compounding and cascading effects on life and well-being for people, communities, the economy and the environment that go well beyond the affected zone. And the consequences may be felt for years.

Attention is rightly focused on the acute response to a crisis. However, the subsequent ongoing effects are often poorly considered in planning or only considered reactively. Covid-19 illustrated the complex and cascading nature of a systemic disaster. The outbreak soon shifted from being simply a health crisis to one affecting every aspect of our lives and public policy. Social care, mental health, education, economics, diplomatic tensions, food security and supply line disruption are some of the domains involved. Three years on, the political and geostrategic consequences of the pandemic continue to unfold. And although the public and policymakers would like to think the outbreak is over, in social, economic and public health terms it is not.ⁱⁱ Lessons from the pandemic, along with climate change, Cyclone Gabrielle, the Christchurch earthquakes and many other recent events, make for a compelling case for redesigning disaster and risk governance into a multi-sector and multi-level model. Beyond these acute events we need to recognise such compounding stresses as the human costs of forced migration, which will only increase with climate change, and emerging challenges such as those relating to the digital-information environment.

In 2015, several international agreements and commitments were made to support sustainability and well-being, including Agenda 2030, incorporating the Sustainable Development Goals, the Paris Agreement on climate change and the Sendai Framework for Disaster Risk Reduction 2015-2030.

The Sendai Framework recognised that disaster management required a greater focus on pre-emptive planning, risk identification and responsiveness and these all had national and multilateral dimensions. There was strong buy-in from nations and key stakeholders. That framework acknowledged the critical role of science and the need to involve civil society in planning for, managing and recovering from disasters. This requires an awareness of the broad range of both natural and anthropogenic disasters that might be confronted, ranging from biological causes (a pandemic for instance) to an extraplanetary trigger (for example, a space weather event). The recent International Science Council-coordinated mid-term scientific review of the Sendai framework notedⁱⁱⁱ, perhaps not surprisingly, that progress remains variable.

i Summary of Terms of Reference for Royal Commission into COVID and any future pandemic. (<https://www.beehive.govt.nz/sites/default/files/2022-12/Summary%20of%20ToR%20for%20Royal%20Commission%20into%20COVID%20and%20any%20future%20pandemic.pdf>)

ii For an extensive discussion of this see the ISC report *Unprecedented and Unfinished: covid -19 and implications for national and global policy* (<https://council.science/publications/covid19-unprecedented-and-unfinished/>). A second edition will be released in the next few weeks.

iii Report for the Mid-Term Review of the Sendai Framework for Disaster risk Reduction: International Science Council March 2023: <https://council.science/publications/mtr-sendai-framework-disaster-risk-reduction/>

Since agreeing to the framework in March 2015 the world has been hit with a viral zoonotic pandemic that has killed millions, while a number of ongoing challenges including climate change, biodiversity loss and geostrategic instability and conflict continue to escalate. These protracted, complex and evolving crises inhibit progress on the sustainability agenda, revealing fractured commitments to multilateralism and gaps between policy intent and action. Seven years later, it remains critical to expand the capabilities in transdisciplinary science and in knowledge brokerage at the science-policy-action interface to meet the vision of the Sendai Framework. At a technical level, there is a case for developing multi-hazard early warning systems,^{iv} improving the availability and use of risk-related data and improving disaster monitoring to consider vulnerability. But redundancy and resilience still have a low priority in much of policy making. In general we tend to be reactive rather than proactive.

She won't be right

Why does reactivity rule the roost? Is it New Zealand's "she'll be right" attitude, which has been shown repeatedly to be inadequate? Is it our general short-termism, driven in part by our political structure and by our own evolved biases? Is it our under-investment in long-term solutions in favour of short-term gains (what economists term hyperbolic discounting)? Or our failure to remove important decisions from partisan politics, thereby disabling serious long-term thinking? It is all those things and more. However, perhaps the greatest obstacle is the deep disconnect between risk science and decision-making. As outlined in the Koi Tū report [Uncertain but inevitable: The expert-policy-political nexus and high-impact risks](#), the issues of risk communication are more nuanced than simply providing an analysis. They require new thinking to get beyond the cognitive and political biases that impede risk "listening".

Risk management starts with comprehensively identifying hazards, estimating the likelihood of events arising from those hazards,^v and taking a scenario approach to their possible immediate and longer-term effects. Expert input from diverse sources and disciplines is needed to understand the types of risks and complex interactions that we may confront. Constant change means the process must be continuously and systematically reviewed.

As highlighted by the catastrophic weather events in the first two months of 2023 and confounding factors such as where we build or where we allow forest harvesting, our understanding of the "risky landscape" is clearly inadequate. This realisation is not new. In 2012, the UK Chief Science Adviser notified Sir Peter, then New Zealand's Chief Science Advisor, of a likely space weather event^{vi}, and he was shocked to find there was no understanding, let alone preparation, for what could be a very damaging event in an era of reliance on connected digital services. This led him to suggest to the then Prime Minister that a much more systematic approach be taken to hazard and risk identification in all domains, from security to natural disasters. A Strategic Risk and Resilience Panel was established, which urged the development of a formal national risk register similar to those produced in other countries^{vii}.

The risk register and a corresponding public national risk report were completed and ready for release in 2018. However, release of the report was met with political resistance and decisions were made to withhold its publication. The motivation for doing so can only be known by those politicians who made

iv See <https://public.wmo.int/en/our-mandate/focus-areas/natural-hazards-and-disaster-risk-reduction/mhews-checklist>

v This is a function of exposure and vulnerability of people and other things of value ("assets") to the hazard.

vi A massive solar flare that could disable all electronic and electrical systems.

vii Both authors worked with the Department of Prime Minister and Cabinet from 2014-2017 on preparing the risk register with the intention that a public-facing document would also be produced. This acknowledged that an aligned understanding of potential risks was critical not only for central government, but also local government, businesses, NGOs and civil society. By making a risk register public, there is the potential for it to be refined by input from outside experts and local knowledge and experience. Such a register must be continuously adapted to reflect new knowledge and contexts and it must highlight where responsibilities lie.

the decisions, but it appears to relate to the issue of accountability. In the private sector, company directors are accountable for risk. But in the public sector, accountability is so diffuse it is hard for anyone to be held truly to account. Indeed no politician wants to be accountable for a risk that may be massive and complex. It is rational at one level for them to deny rather than confront such risks. This is one of a broader set of cognitive and political biases that inhibit responding to a risk assessment discussed in our 2021 report^{viii}.

When a draft of the risk register was shown to ministers, their tendency was to focus on the impact/probability (risk matrix) chart and offer their own non-expert views about where risks under their remit should sit. Assigning these positions in a risk assessment is a complex and probabilistic process requiring expertise from risk professionals informed by domain experts such as seismologists and epidemiologists. Yet these assessments are often ignored or downplayed by risk-management decision-makers. A classic example was when a very detailed geotechnical report on Christchurch's seismic risk in 2004^{ix} indicated that certain areas were likely to liquefy in an earthquake, noting also that Christchurch had experienced several events that had damaged the city's cathedral spire in the past 100 years. This did not stop the Christchurch City Council from approving large-scale housing developments in these areas. Similarly, despite many areas having had land information memorandum (LIM) reports pointing to the risks of flooding, planners have not been inhibited from increasing housing density even though events have shown that the density exceeded infrastructure capacity.

Tyranny of short-termism

A consistent theme in all of this is our underlying innate bias towards focusing on immediate or short-term matters we can see happening or expect to happen soon. Although understandable in both evolutionary and psychological terms, this is why in so many crises we end up shutting the proverbial stable door after the horse has bolted, addressing the risk after the event instead of before. We haven't invested in ensuring the horse cannot bolt in the first place.

This reflects common biases in thinking about risk. We often think things won't affect us even if they might affect others; we think we can outwit nature or a virus. For politicians needing to make decisions on risk management, these biases are heightened. The incentive of the ballot box favours the short-term rather than dealing with matters such as expensive investment in resilience, for which they are unlikely to receive credit during their term of office^x. The cost-benefit analysis is probabilistic and too often Treasury discounts the compounding social and other costs.

Although most events cannot be precisely predicted, good risk and resilience science can help us prepare for a range of consequences. If we are aware of the possibility that something can go wrong and that at some stage it is likely to, we can prepare for that eventuality. If as a society we had been thinking in this way, perhaps our infrastructure deficit would not be what it is and we might have better considered the cost of infill housing on our stormwater infrastructure. We would have had a second Auckland harbour crossing a long time ago and the issues for planning for climate change and managed retreat would be well advanced.

The fact that these things haven't happened shows the significant gap between risk-assessment processes and policymaking for investment in resilience and risk reduction. The Sendai Framework calls for a systematic approach by governments to risk reduction but central to achieving that is separating

viii *Uncertain but inevitable: The expert-policy-political nexus and high-impact risks*

ix Environment Canterbury (2004). *Christchurch Liquefaction Study – Stage IV*. ECan Report No. U04/25

x An analogy might be the claims of security services that they need more resources – they can insist they have prevented attacks but the media treats such claims with scepticism. But if an event occurs they face the heat.

risk decision-making from short-term political policymaking. The obstacle is the resistance to “risk listening”, meaning that expert risk assessment will always have a hard time being heard and acted on. And the underlying issue is global, as demonstrated by international tardiness in confronting climate change and many other challenges.

There are solutions. We believe the concept of a national risk register should be extended and maintained independently of the political community. It must be public-facing as well as policy-facing, otherwise it is of limited value for all those who need to know what to think about. Transparency is essential. It must be informed pluralistically, involving a diversity of expertise and perspectives to develop scenarios for a broad range of complex and compounding risks.

Given New Zealand’s small size, there is potential for a more coherent system of risk assessment and decision-making than has been evident in recent events. Investing in resilience is a matter of identifying shocks – storms, earthquakes, pandemics – and stresses that make these events worse. Beyond the now obvious effect of climate change, widening of inequity and loss of social cohesion are examples of other types of stress that amplify hazard events. Every major event exaggerates the issues of inequality and the disadvantaged always suffer more.

Clearly investing in resilience is a long-term matter that must extend beyond political cycles and partisanship. An independent national risk assessment unit reporting to Parliament rather than the political Executive might be a good start.



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